

Easy Offer

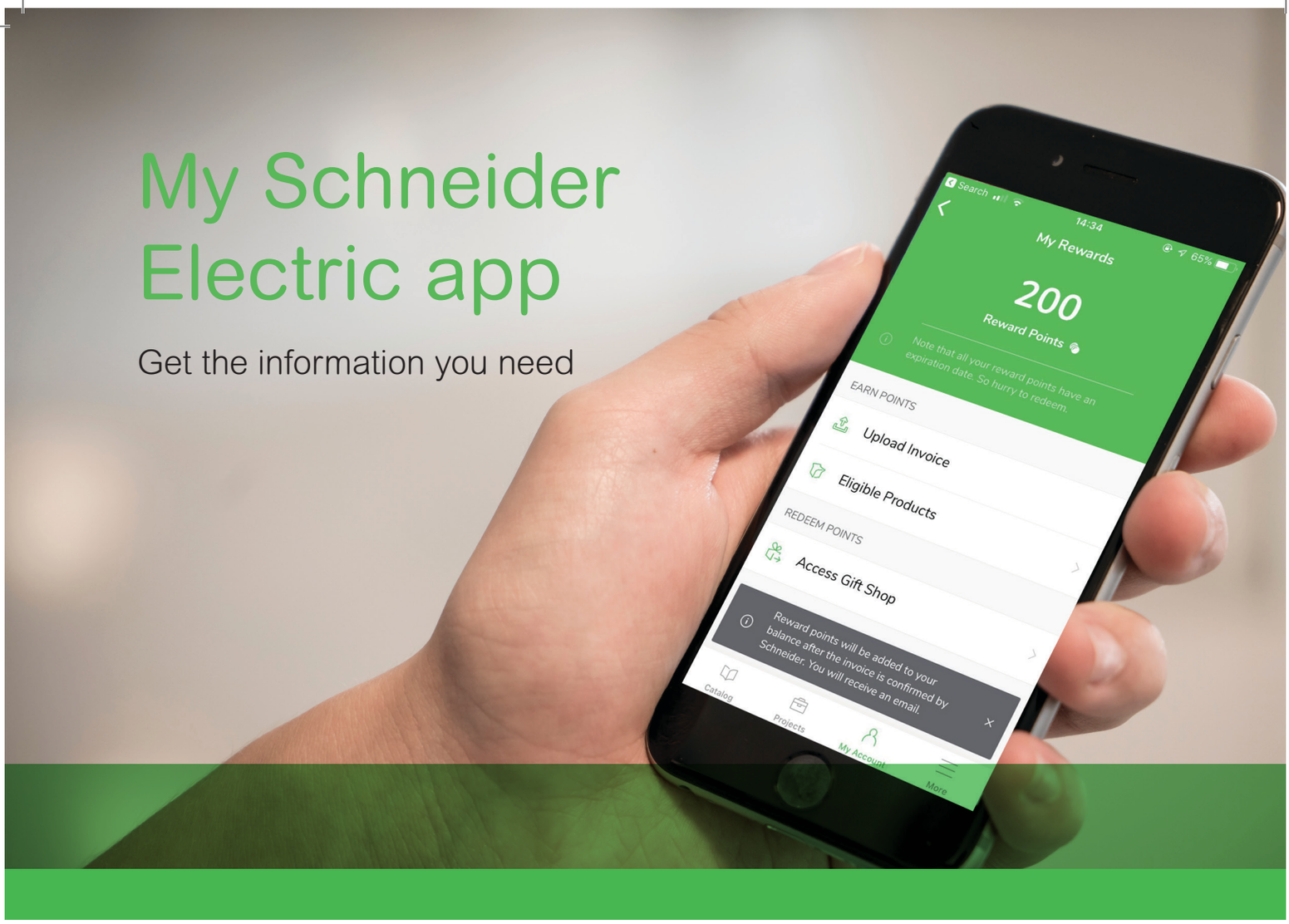
Product Catalogue 2019

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Final Distribution Devices

Miniature Circuit Breaker

PB111299-35



PB111300-35



PB111301-35



PB111302-35



Function

Easy 9 circuit breakers combine the following functions:

- short circuit protection
- overload protection

Easy 9 circuit breakers are designed for all housing and residential applications

- SANS IEC60947 standards

Certified compliant SANS IEC 60947-2

Breaking capacity (Icu = Ics)		
Ph/Ph	400 V AC	3 kA
Ph/N	230 V AC	3 kA
Insulation voltage (Ui)		500 V
Rated impulse withstand voltage (Uimp)		4 kV
Magnetic tripping	C curve	8.5 In ± 20 %

No. of Poles	Breaking Capacity (kA)	Rating (A)	Reference
1P	3	6	EZ9F53106
	3	10	EZ9F53110
	3	16	EZ9F53116
	3	20	EZ9F53120
	3	25	EZ9F53125
	3	32	EZ9F53132
	3	40	EZ9F53140
	3	50	EZ9F53150
	3	63	EZ9F53163
2P	3	6	EZ9F53206
	3	10	EZ9F53210
	3	16	EZ9F53216
	3	20	EZ9F53220
	3	25	EZ9F53225
	3	32	EZ9F53232
	3	40	EZ9F53240
	3	50	EZ9F53250
	3	63	EZ9F53263
3P	3	6	EZ9F53306
	3	10	EZ9F53310
	3	16	EZ9F53316
	3	20	EZ9F53320
	3	25	EZ9F53325
	3	32	EZ9F53332
	3	40	EZ9F53340
	3	50	EZ9F53350
	3	63	EZ9F53363
4P	3	6	EZ9F53406
	3	10	EZ9F53410
	3	16	EZ9F53416
	3	20	EZ9F53420
	3	25	EZ9F53425
	3	32	EZ9F53432
	3	40	EZ9F53440
	3	50	EZ9F53450
	3	63	EZ9F53463

Additional characteristics

Endurance (O-C)	Electrical	4,000 cycles
	Mechanical	10, 000 cycles
Operating temperature		-5˚C to 60˚C
Storage temperature		-40˚C to 85˚C
Clamping Screw	Screw Head 6.5mm blade PZ2 recessed	
Tightening torque		
6 to 25A	2 N.m	
32A to 63A	3.5 N.m	

Residual Current Circuit Breaker





Function

Easy 9 RCCB combines the following functions:

- Tripping in case of leakage current only
- One RCCB protects several circuits when fitted upstream, a group of circuit breakers

Description

- Current ratings 63 A
- Sensitivity: 30 mA
- Overall size: 2 or 4 modules

Certified compliant SANS 767 IEC 61008-1*

	2P	4P
Voltage Rating (Ue)	230 V AC, 50Hz	400 V AC, 50Hz
Rated impulse withstand voltage (Uimp)	4 kV	4 kV

No. of Poles	Rating (A)	Sensitivity (mA)	Reference
2P	63	30	EZ9R03263
4P	63	30	EZ9R03463

Additional characteristics

*Endurance (O-C	Electrical	2000 cycles	2000 cycles
	Mechanical	5000 cycles	5000 cycles
*Conditional rated short circuit current	with Easy9 mcb	3kA	3kA
Operating temperature	-5˚C to 60˚C		
Storage temperature	-40˚C to 85˚C		
Clamping Screw	Screw Head 6.5mm blade PZ2 recessed		
Tightening torque	3.5 N.m		

Switch-disconnectors

Functions

The switch-disconnectors are used for:
- Control (opening and closing of circuits under load).
- Disconnection of on-load electrical circuits already protected against overloads and short-circuits.



1P

Easy9 control switches	
Rating (Ie)	
63 A	**EZ9S16163**
Voltage rating (Ue)	230 V, 50/60 Hz
Width in 9-mm modules	2



2P

Easy9 control switches	
Rating (Ie)	
63 A	**EZ9S16263**
Voltage rating (Ue)	400 V, 50/60 Hz
Width in 9-mm modules	4



3P

Easy9 control switches	
Rating (Ie)	
63 A	**EZ9S16363**
Voltage rating (Ue)	400 V, 50/60 Hz
Width in 9-mm modules	6

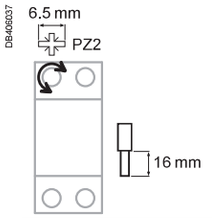


4P

Easy9 control switches	
Rating (Ie)	
63 A	**EZ9S16463**
Voltage rating (Ue)	400 V, 50/60 Hz
Width in 9-mm modules	8

Certified compliant IEC 60947-3

Connection



≤ 50 mm²	Tightening torque: 3.5 N.m
Flexible copper cables	
≤ 35 mm²	Tightening torque: 3.5 N.m
Comb busbars	





- Position contact indication
- Suitable for industrial isolation according to IEC 60947-3 standard
- Manual control on front face by O-I lever

Characteristics

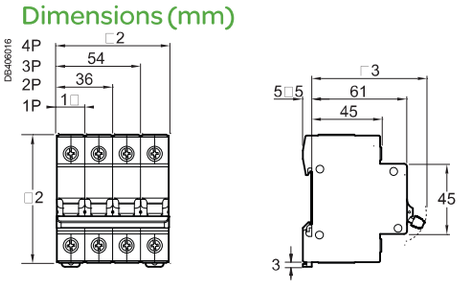
Main characteristics

Operating category	AC-22 A
Permissible rated short-time withstand current (Icw)	12 Ie, 1 second
Conditional rated short-circuit current (Inc)	3000 A
Rated short-circuit closing current (Icm)	15 Ie

Additional characteristics

Degree of protection (IEC 60529)	Device only	IP20	
	Device in modular enclosure	IP40	
Endurance (O-C)	Mechanical	63A	8500 cycles
	Electrical	63A	1500 cycles
Operating temperature		-5°C to +55°C	
Storage temperature		-5°C to +70°C	
Tropicalisation (IEC 60068-1)		Treatment 2 (relative humidity 95 % to 55°C)	

Dimensions (mm)



Weight (g)

Type	Easy9 switch-disconnectors
1P	90
2P	175
3P	260
4P	345

Surge protection devices



1P

Easy9 surge arrester			
Maximum discharge current (Imax)	Nominal discharge current (In)	Voltage protection level (Up)	
20 kA	10 kA	1.3 kV	**EZ9L33120**
Width in 9-mm modules	2		



1P+N

Easy9 surge arrester			
Maximum discharge current (Imax)	Nominal discharge current (In)	Voltage protection level (Up)	
20 kA	10 kA	1.3 kV	**EZ9L33620**
Width in 9-mm modules	4		



3P+N

Easy9 surge arrester			
Maximum discharge current (Imax)	Nominal discharge current (In)	Voltage protection level (Up)	
20 kA	10 kA	1.3 kV	**EZ9L33720**
Width in 9-mm modules	8		

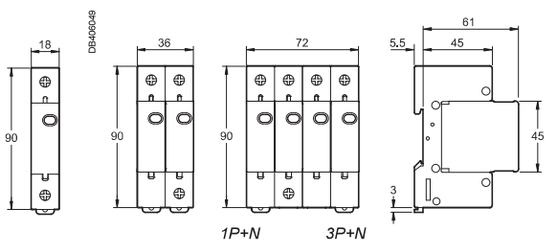
Characteristics

Network maximum voltage	Ph / Ph	400 V, 50/60 Hz
	Ph / N	230 V, 50/60 Hz
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40
Storage temperature		-5°C to +70°C
Operating temperature		-5°C to +60°C

Certified compliant with IEC 61643-11

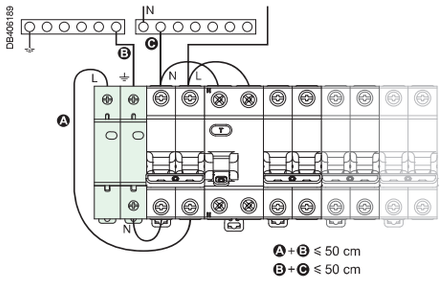
Weight (g)

Type	Easy9 SPD
1P+N	188
3P	282
3P+N	376

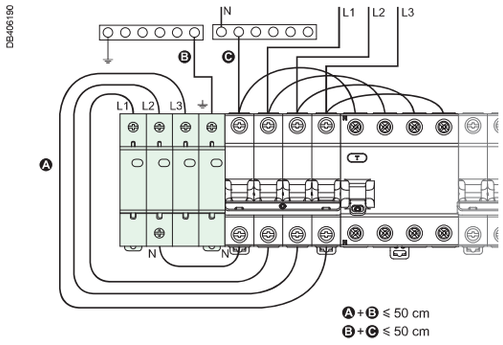


Connection

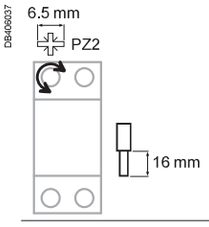
Network: single phase
Earthing system: TT or TN-S



Network: three phases
Earthing system: TT or TN-S



Connection



Rigid copper cables

5 to 25 mm²	Tightening torque: 2.5 N.m

Flexible copper cables

5 to 25 mm²	Tightening torque: 2.5 N.m





Moulded Case Circuit Breakers / Switch Disconnectors

EasyPact EZC
So easy and simple



Easy to choose.
Easy to install.
Easy to use.

Moulded Case Circuit Breakers
15A to 630A

- Breaking capacity from 10 to 50kA at 400/415V
- 3 frame sizes from 100 to 630A
- 3 and 4 pole frame
- Fixed current rating, non-adjustable

- Unique! All three protection functions built into the 250A frame
  – Overload, Short-circuit & Earth leakage.
- Field installable auxiliaries and accessories
- With just three sizes, EasyPact is the simple, universal solution to fit all low protection needs.
- The EZC range is particularly adapted to the OEM and Building markets, offering optimum performance at a competitive price.

Buildings

OEM

EasyPact EZC

Functions and characteristics
Selection table

CPB100602



EZC100-3P.

CPB100603



EZC100-4P.

CPB100604



EZC250-3P.

EasyPact EZC circuit breakers			
Fixed version			
Plug-in version			
Number of poles			
Rated current (A)	In	at 40 °C	
Rated insulation voltage (V)	Ui		
Rated impulse withstand voltage (kV)	Uimp		
Rated operational voltage (V)	Ue	AC 50/60 Hz	
		DC	

Electrical characteristics as per IEC60947-2, EN60947-2, JIS C8201-2-1			
Ultimate breaking capacity (kA rms)	Icu	AC 50/60 Hz	110/130 V
			220/230/240 V
			380 V
			400/415 V
			440 V
			550 V
		DC	125 V (1P)
			250 V (2P in series)
Rated service breaking capacity (kA rms)	Ics	% Icu	110-400 V
			415-550 V
Suitability for isolation			
Utilisation category			
Pollution degree			
Endurance (C-O cycles)	Mechanical		
	Electrical	In/415 V	

Electrical characteristics as per NEMA-AB1			
Breaking capacity (kA rms)	HIC	AC 50/60 Hz	240 V
			277/480 V

Protection		
Overload protection	Bimetal	
Instantaneous protection	Magnetic	Fixed (±20 %)

Auxiliaries		
Indication contacts	Auxiliary switch	AX
	Alarm switch	AL
	Combined AX + AL	AXAL
Voltage releases	Shunt trip release	SHT
	Undervoltage release	UVR

Installation		
Connection	Crimp lugs/bars	
Accessories	Box lugs for bare cables	
	Rotary handles	Direct
		Extended
	Terminal extensions	
	Spreaders	
	Phase barriers	
	Terminal shields	
	Padlocking system	
	DIN rail adaptor	

Dimension and weight		
Dimensions (mm)	D x H	
	W	
Weight (kg)		

EasyPact EZC

Functions and characteristics
Selection table

EZC100B	EZC100F	EZC100N	EZC100H	EZC250F	EZC250N	EZC250H
■	■	■	■	■	■	■
■	■	■ (3)	■ (3)	■	■	■
3	3	3-4	2-3-4	3	3	3
16, 25, 32, 40, 50, 63	16, 25, 32, 40, 50, 63, 80, 100	16, 25, 32, 40, 50, 63, 80, 100	16, 25, 32, 40, 50, 63, 80, 100	100, 125, 150, 160, 175, 200, 225, 250	100, 125, 150, 160, 175, 200, 225, 250	100, 125, 160, 175, 225, 250
690	690	690	690	690	690	690
6	6	6	6	6	6	6
550	550	550	550	550	550	550
-	250	250	250	250	250	250
10	25	25	100	25	50	85
10	25	25	100	25	50	85
7.5	10	18	30	18	25	36
7.5	10	15	30	18	25	36
5	7.5	10	20	15	20	25
2.5	5	5	10	5	8	10
-	5	5	10	5	20	30
-	5	5	10	5	20	30
25 %	50 %	50 %	50 %	50 %	50 %	50 %
25 %	50 %	50 %	25 %	50 %	50 %	50 %
■	■	■	■	■	■	■
A	A	A	A	A	A	A
3	3	3	3	3	3	3
8 500	8 500	8 500	8 500	10 000	10 000	10 000
1 500	1 500	1 500	1 500	5 000	5 000	5 000
-	-	25	100	25	50	85
-	-	10 (1)	18 (2)	15	18	25 (2)
fixed	fixed	fixed	fixed	fixed	fixed	fixed
fixed	fixed	fixed	fixed	10 In	10 In	10 In
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■ (2)	■	■	■
■	■	■	■ (2)	■	■	■
-	-	-	-	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■ (2)	■	■	■
■	■	■	■	■	■	■
■	■	■	■	-	-	-
60 x 130	60 x 130	60 x 130	60 x 130	60 x 165	60 x 165	60 x 165
75	75	75 (3P) 100 (4P)	75 (3P) 100 (4P)	105	105	105
0.78	0.78	0.78 (3P) 1.0 (4P)	0.78 (3P) 1.0 (4P)	1.3	1.3	

(1) For 277 V only.
(2) For 3 and 4 poles only.
(3) For 3P only.

EasyPact EZC

Functions and characteristics
Selection table

CPB100605



EZC250-4P.

CPB100606



EZCV250-4P.

CPB100607



EZC400-3P.

EasyPact EZC circuit breakers			
Fixed version			
Plug-in version			
Number of poles			
Rated current (A)	In	at 40 °C	
Rated insulation voltage (V)	Ui		
Rated impulse withstand voltage (kV)	Uimp		
Rated operational voltage (V)	Ue	AC 50/60 Hz	
		DC	
Electrical characteristics as per IEC 60947-2, EN 60947-2 and JIS C8201-2-1/C8201-2-2			
Ultimate breaking capacity (kA rms)	Icu	AC 50/60 Hz	220/230 V
			380 V
			400/415 V
			440 V
			550 V
		DC	125 V (1P)
			250 V
			(2P in series)
Rated service breaking capacity (kA rms)	Ics	% Icu	
Suitability for isolation			
Utilisation category			
Pollution degree			
Endurance (C-O cycles)	Mechanical		
	Electrical	In/415 V	
Electrical characteristics as per NEMA-AB1			
Breaking capacity (kA rms)	HIC	AC 50/60 Hz	240 V
			277/480 V
Protection			
Overload protection	Bimetal		
Instantaneous protection	Magnetic		fixed (± 20%)
Earth-leakage protection			
Sensitivity (A)	IΔn		adjustable
Time-delay (ms)	Δt		adjustable
Max. breaking time (s)	at 2 IΔn		
Auxiliaries			
Indication contacts	Auxiliary switch	OF/AX	
	Alarm switch	SD/AL	
	Combined AX + AL	AXAL	
	Earth-alarm switch	ALV	
Voltage releases	Shunt trip release	MX/SHT	
	Undervoltage release	MN/UVR	
Installation			
Connection	Crimp lugs / bars		
Accessories	Box lugs for bare cables		
	Rotary handles	Direct	
		Extended	
	Terminal extensions		
	Spreaders		
	Phase barriers		
	Terminal shields		
	Padlocking system		
Dimension and weight			
Dimensions (mm)	D x H		
	W		
Weight (kg)			

EasyPact EZC

Functions and characteristics
Selection table

EZC250N	EZC250H	EZCV250N	EZCV250H	EZC400N	EZC400H	EZC630N	EZC630H
■	■	■	■	■	■	■	■
■	■	■	■	-	-	-	-
4	4	3-4	3-4	3-4	3-4	3-4	3-4
63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	63, 80, 100, 125, 150, 160, 175, 200, 225, 250	320, 350, 400	320, 350, 400	400, 500, 600	400, 500, 600
690	690	440	440	690	690	690	690
6	6	6	6	6	6	6	6
550	550	440	440	440	440	440	440
250	250	-	-	250	250	250	250
50	85	85	100	40	70	40	70
25	36	25	36	36	50	36	50
25	36	25	36	36	50	36	50
20	25	20	25	36	50	36	50
8	10	-	-	-	-	-	-
20	30	-	-	-	-	-	-
20	30	-	-	-	-	-	-
50 %	50 %	50 %	50 %	50 %	50 %	100% (220-415V) 50% (440V)	100% (220-415V) 50% (440V)
■	■	■	■	■	■	■	■
A	A	A	A	A	A	A	A
3	3	3	3	3	3	3	3
10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
5 000	5 000	5 000	5 000	4 000	4 000	3 000	3 000
50	85	50	85	50	85	50	85
18	25	-	-	25	35	25	35
fixed	fixed	fixed	fixed	fixed	fixed	fixed	fixed
10 In	10 In	10 In	10 In	10 In	10 In	10 In (400/500A) 5000A (600A)	10 In (400/500A) 5000A (600A)
-	-	0.1/0.3/0.5/1	0.1/0.3/0.5/1	-	-	-	-
-	-	0/200/500/1000	0/200/500/1000	-	-	-	-
-	-	0.15/0.4/1/2	0.15/0.4/1/2	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	-	-	-	-
-	-	■	■	-	-	-	-
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
68 x 165	68 x 165	68 x 165	68 x 165	140 x 255	140 x 255	140 x 255	140 x 255
140	140	105 (3P) 140 (4P)	105 (3P) 140 (4P)	140 (3P) 185 (4P)	140 (3P) 185 (4P)	140 (3P) 185 (4P)	140 (3P) 185 (4P)
1.8	1.8	1.6 (3P) 2.1 (4P)	1.6 (3P) 2.1 (4P)	4.8 (3P) 6.4 (4P)	4.8 (3P) 6.4 (4P)	4.8 (3P) 6.4 (4P)	4.8 (3P) 6.4 (4P)

EZC100 3P/4P

Circuit breaker



EZC100-3P



EZC100-4P

EasyPact EZC100 – With thermal-magnetic trip unit

Type	Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
EasyPact EZC100N –With thermal-magnetic trip unit				
3 Pole, 3P3d	15	16	EZC100N3016	
	15	25	EZC100N3025	
	15	32	EZC100N3032	
	15	40	EZC100N3040	
	15	50	EZC100N3050	
	15	63	EZC100N3063	
	15	80	EZC100N3080	
	15	100	EZC100N3100	
4 Pole, 4P3d	15	16	EZC100N4016	
	15	25	EZC100N4025	
	15	32	EZC100N4032	
	15	40	EZC100N4040	
	15	63	EZC100N4063	
	15	80	EZC100N4080	
	15	100	EZC100N4100	
EasyPact EZC100H –With thermal-magnetic trip unit				
3 Pole, 3P3d	30	16	EZC100H3016	
	30	25	EZC100H3025	
	30	32	EZC100H3032	
	30	40	EZC100H3040	
	30	50	EZC100H3050	
	30	63	EZC100H3063	
	30	80	EZC100H3080	
	30	100	EZC100H3100	
4 Pole, 4P3d	30	16	EZC100H4016	
	30	25	EZC100H4025	
	30	32	EZC100H4032	
	30	40	EZC100H4040	
	30	63	EZC100H4063	
	30	80	EZC100H4080	
	30	100	EZC100H4100	

EZC100N/H

Accessories





















EasyPact EZC100 N/H Accessories

Type	Description		Reference	Price per unit
Terminal Accessories				
Spreaders				
	Spreaders for 3P breaker		EZASPDR3P	
3 Pole	Spreaders for 4P breaker		EZASPDR4P	
4 Pole				
Terminal Shields				
	Terminal shields for 3P breaker (68 mm depth)	Set of 2	EZATSHD3P	
	Terminal shields for 4P breaker (68 mm depth)	Set of 2	EZATSHD4P	
Phase barriers				
	Phase barriers for EZC100	Set of 2	EZAFASB2	
Electrical auxiliaries				
Indication contacts				
	Auxiliary switch (AX)		EZAUX10	
	Alarm switch (AL)		EZAUX01	
	Auxiliary switch + alarm switch (AX + AL)		EZAUX11	
Voltage releases				
AC	Shunt Trip (MX/SHT)			
	100-130 V		EZASHT100AC	
	200-277 V		EZASHT200AC	
	380-480 V		EZASHT380AC	
DC	Shunt Trip (MX/SHT)			
	24 V		EZASHT024DC	
AC	Under Voltage Releases (MN/UVR)			
	110-130 V	MN/UVR	EZAUVR110AC	
	200-240 V	MN/UVR	EZAUVR200AC	
	380-415 V	MN/UVR	EZAUVR380AC	
	Shunt Trip (MX/SHT)			
DC	24 V	MN/UVR	EZAUVR024DC	
Rotary handles				
Direct rotary handle (for 3/4P breaker)				
	Direct rotary handle (black)		EZAROTDS	
	Direct rotary handle (red/yellow)		EZAROTDSRY	
Extended rotary handle (for 3/4P breaker)				
	Extended rotary handle (black)		EZAROTE	
	Extended rotary handle (red/yellow)		EZAROTERY	
Locks				
Padlocking system				
	Padlocking system		EZALOCK	
	Padlocking system			
Installation accessory				
DIN rail adaptor	For 2 x 1P or 1 x 2P or 1 x 3P breaker		EZADINR	
	Note: for 4P breaker, use 2 adaptors			

EZC250N/H 3/4P

Circuit breaker & Accessories



EZC250-3P



EZC250-4P

EasyPact EZC250F

Type	Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
With thermal magnetic trip unit				
3 Pole, 3P3d	18	125	EZC250F3125	
	18	160	EZC250F3160	
	18	200	EZC250F3200	
	18	225	EZC250F3225	
	18	250	EZC250F3250	

EasyPact EZC250N

With thermal magnetic trip unit				
3 Pole, 3P3d	25	125	EZC250N3125	
	25	160	EZC250N3160	
	25	200	EZC250N3200	
	25	225	EZC250N3225	
	25	250	EZC250N3250	
4 Pole, 4P3d	25	125	EZC250N4125	
	25	160	EZC250N4160	
	25	200	EZC250N4200	
	25	225	EZC250N4225	
	25	250	EZC250N4250	

EZC250N/H 3/4P

Earth-leakage circuit breaker

EasyPact EZC250N

Type	Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
With thermal magnetic trip unit and earth leakage protection				
3 Pole, 3P3d	25	63	EZCV250N3063	
	25	80	EZCV250N3080	
	25	100	EZCV250N3100	
	25	125	EZCV250N3125	
	25	160	EZCV250N3160	
	25	200	EZCV250N3200	
	25	250	EZCV250N3250	
4 Pole, 4P3d	25	63	EZCV250N4063	
	25	80	EZCV250N4080	
	25	100	EZCV250N4100	
	25	125	EZCV250N4125	
	25	160	EZCV250N4160	
	25	200	EZCV250N4200	
	25	250	EZCV250N4250	

EasyPact EZC250H

Type	Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
With thermal magnetic trip unit and earth leakage protection				
3 Pole, 3P3d	36	63	EZCV250N3063	
	36	80	EZCV250N3080	
	36	100	EZCV250N3100	
	36	125	EZCV250N3125	
	36	160	EZCV250N3160	
	36	200	EZCV250N3200	
	36	250	EZCV250N3250	
4 Pole, 4P3d	36	63	EZCV250N4063	
	36	80	EZCV250N4080	
	25	100	EZCV250N4100	
	25	125	EZCV250N4125	
	25	160	EZCV250N4160	
	25	200	EZCV250N4200	
	25	250	EZCV250N4250	

EZC250
Accessories

EasyPact EZC250F/N/H, EZCV250N/H Accessories





















Type	Description		Reference	Price per unit
Terminal Accessories				
Spreaders				
3 Pole	Spreaders for 3P breaker	Set of 3	EZESPDR3P	
4 Pole	Spreaders for 4P breaker	Set of 4	EZESPDR4P	
Terminal Shields				
	Terminal shields for 3P breaker (68 mm depth)	Set of 2	EZETSHD3PN	
	Terminal shields for 4P breaker (68 mm depth)	Set of 2	EZETSHD4PN	
Phase barriers				
	Phase barriers for 60 mm depth	Set of 2	EZEFASB2	
	Phase barriers for 68 mm depth	Set of 3	EZEFASB3N	
Electrical auxiliaries				
Indication contacts				
	Auxiliary switch (AX)		EZEAX	
	Alarm switch (AL)		EZEAL	
	Auxiliary switch + alarm switch (AX + AL)		EZEAXAL	
	Earth-leakage alarm switch (ALV) (only for EZCV250)		EZEALV	
Voltage releases				
AC	Shunt Trip (MX/SHT)			
	120-130 V	MX/SHT	EZESHT120AC	
	200-240 V	MX/SHT	EZESHT200AC	
	380-440 V	MX/SHT	EZESHT400AC	
DC	Shunt Trip (MX/SHT)			
	24 V	MX/SHT	EZESHT024DC	
AC	Under Voltage Releases (MN/UVR)			
	110-130 V for EZC25 3 Pole (only)	MN/UVR	EZEUVR110AC	
	200-240 V for EZC250 3 Pole (only)	MN/UVR	EZEUVR200AC	
	380-415 V for EZC250 3 Pole (only)	MN/UVR	EZEUVR400AC	
DC	Under Voltage Releases (MN/UVR)			
	24 V for EZC250 3 Pole (only)	MN/UVR	EZEUVR024DC	
AC	Under Voltage Releases (MN/UVR (1))			
	110-130 V for EZC250 4 Pole and EZCV 3/4 Poles	MN/UVR (1)	EZEUVRN110AC	
	200-240 V for EZC250 4 Pole and EZCV 3/4 Poles	MN/UVR (1)	EZEUVRN200AC	
	380-415 V for EZC250 4 Pole and EZCV 3/4 Poles	MN/UVR (1)	EZEUVRN400AC	
DC	Under Voltage Releases (MN/UVR(1))			
	24 V for EZC250 4 Pole and EZCV 3/4 Poles	MN/UVR (1)	EZEUVRN024DC	
Rotary handles				
Direct rotary handle				
	Direct rotary handle (black)		EZEROTDS	
	Direct rotary handle (red/yellow)		EZEROTDSRY	
Extended rotary handle				
	Extended rotary handle (black)		EZEROTE	
	Extended rotary handle (red/yellow)		EZEROTERY	
Locks				
Padlocking system				
	Padlocking system for EZC250-3P		EZELOCK	
	Padlocking system for EZC250-4P and EZCV250-3/4P		EZELOCKN	

EZC400, 630N/H 3/4P

Accessories



EZC400-3P

EasyPact EZC400N

Type	Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
With thermal magnetic trip unit				
3 Pole, 3P3d	36	320	EZC400N3320N	
	36	350	EZC400N3350N	
	36	400	EZC400N3400N	

EasyPact EZC400H 4P3D

With thermal magnetic trip unit				
4 Pole, 4P3d	36	320	EZC400N4320N	
	36	350	EZC400N4350N	
	36	400	EZC400N4400N	

EZC400/630

Accessories



















EasyPact EZC400/630 N/H Connection accessories (Cu or Al)

Type	Description		Reference	Price per unit
Terminal extensions				
3 Pole	EZC400/630 3P Spreaders 50 mm	Set of 3	LV432490	
4 Pole	EZC400/630 4P Spreaders 50 mm	Set of 4	LV432491	
3 Pole	EZC400/630 3P Spreaders 70 mm	Set of 3	LV432492	
4 Pole	EZC400/630 4P Spreaders 70 mm	Set of 4	LV432493	
Insulation accessories				
3 Pole	EZC400/630 3P Short terminal shield, 45mm (1 piece)	Set of 3	LV432591	
4 Pole	EZC400/630 4P Short terminal shield, 45mm (1 piece)	Set of 4	LV432592	
3 Pole	EZC400/630 3P Long terminal shield, 45mm (1 piece)	Set of 3	LV432593	
4 Pole	EZC400/630 4P Long terminal shield, 45mm (1 piece)	Set of 4	LV432594	
3/4 Poles	EZC400/630 Interphase barriers (set of 6 per pack)	Set of 6	LV432570	
Electrical auxiliaries				
Auxiliary contacts (changeover)				
	OF or SD or SDE(*) or SDV		29450	
	SDE adapter mandatory for trip unit TM		LV540050	
Voltage releases				
AC	Voltage			
	110-130 V 50/60 Hz	MX	LV429386	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MX	LV429387	
	380-415 V 50 Hz and 440-480 V 60 Hz	MX	LV429388	
	110-130 V 50/60 Hz	MN	LV429406	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MN	LV429407	
	380-415 V 50 Hz and 440-480 V 60 Hz	MN	LV429408	
DC	Voltage			
	12 V	MX	LV429382	
	24 V	MX	LV429390	
	125 V	MX	LV429393	
	250 V	MX	LV429394	
	12 V	MN	LV429402	
	24 V	MN	LV429410	
	125 V	MN	LV429413	
	250 V	MN	LV429414	
Rotary handles				
Direct rotary handles				
	Standard black handle		LV432597	
Standard extended rotary handle				
	Standard extended rotary handle		LV432598	

EasyPact CVS
The easy choicefor quality and value



High visibility ON, ISOLATION, and OFF indicators help you quickly identify and diagnosis faults and reduce downtime.



With ultra-compact size and adjustable settings ideal for telecom, distributed generation and final distribution applications.

Small and Medium Buildings

Small and Medium Industry

LV circuit breakers from 16 to 630A

The EasyPact™ CVS range of Class II, moulded-case circuit breakers from Schneider Electric™ is precision engineered to help make your installations safer and more reliable while adapting to today's tight construction and upgrade budgets. Offering exceptional capability, quality, and value, EasyPact CVS is the easy choice for all your most common electrical distribution applications in medium-sized commercial and industrial buildings.

Just the right fit

The perfomance you need
EasyPact CVS provides an exceptional feature set at its price point, including extended current limiting capacity and adjustable thermal protection.

At a cost-effective investment
Pay for only what you need and don't settle for lower grade alternatives. With simplicity of selection, purchasing, stocking, and installation designed into every breaker, count on EasyPact CVS to deliver unbeatable value throughout its life cycle.

With the quality you demand
Using advanced manufacturing methods and premium materials, EasyPact CVS delivers the Schneider Electric commitment to quality.

EasyPact CVS

Charateristics and performance

PB106462



EasyPact CVS100/160/250

PB106463



EasyPact CVS400/630

Common characteristics				
Rated voltages				
Insulation voltage (V)	Ui			690
Impulse withstand voltage (kV)	Uimp			8
Operational voltage (V)	Ue	AC 50/60 Hz		440
Suitability for isolation		IEC/EN 60947-2		yes
Utilisation category				A
Pollution degree		IEC 60664-1		3

Circuit breakers

Performance Electrical characteristics as per IEC 60947-2				
Rated current (A)	In	50 °C		
Number of poles				
Breaking capacity levels				
Breaking capacity (kA rms)				
	Icu	AC 50/60 Hz	220/240 V 380/415 V	
			440 V	
Service breaking capacity (kA rms)				
	Ics	AC 50/60 Hz	220/240 V 380/415 V 440 V	
Durability (C-O cycles)		Mechanical		
		Electrical	415V	In/2
				In

Protection			
Overload/short-circuit protection	Thermal magnetic		
	Electronic		
		with neutral protection (Off-0.5-1)	
Installation/connections Dimensions and weights			
Dimensions (mm) W x H x D	Fixed, front connections	3P 4P	
Weight (kg)	Fixed, front connections	3P	
		4P	
Connections			
Connection terminals	Pitch	Without/With spreaders	
Large Cu or Al cables	Cross-section	mm²	

EasyPact CVS

Charateristics and performance

CVS100	CVS160	CVS250	CVS400	CVS630
100	160	250	400	630
3, 4	3, 4	3, 4	3, 4	3, 4
B F	B F	B F	F N	F N
40 70	40 70	40 70	40 70	40 70
25 36	25 36	25 36	36 50	36 50
20 36	20 36	20 36	30 42	30 42
40 70	40 70	40 70	40 70	40 70
25 36	25 36	25 36	36 50	36 50
15 18	15 18	15 18	23 32	23 32
30000	25000	20000	15000	15000
30000	25000	20000	12000	8000
12000	12000	10000	6000	4000

■	■	■	■	■
-	-	-	■	■
-	-	-	■	■
105 x 161 x 86	105 x 161 x 86	105 x 161 x 86	140 x 255 x 110	140 x 255 x 110
140 x 161 x 86	140 x 161 x 86	140 x 161 x 86	185 x 255 x 110	185 x 255 x 110
1.8	1.8	2.0	4.7	5.2
2.2	2.3	2.6	6.3	7.1
35/45 mm	35/45 mm	35/45 mm	45/52.5 mm 45/70 mm	45/52.5 mm 45/70 mm
300	300	300	4 x 240	4 x 240

CVS 100 / 160 / 250B

Complete fixed/FC device



With thermal-magnetic trip unit TM-D

Type		Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
CVS100B					
3Pole, 3P3D	TM16D	25	16	ZZA_LV510300	
	TM25D	25	25	ZZA_LV510301	
	TM32D	25	32	ZZA_LV510302	
	TM40D	25	40	ZZA_LV510303	
	TM50D	25	50	ZZA_LV510304	
	TM63D	25	63	ZZA_LV510305	
	TM80D	25	80	ZZA_LV510306	
	TM100D	25	100	ZZA_LV510307	
4Pole, 4P3D	TM16D	25	16	ZZA_LV510310	
	TM25D	25	25	ZZA_LV510311	
	TM32D	25	32	ZZA_LV510312	
	TM40D	25	40	ZZA_LV510313	
	TM50D	25	50	ZZA_LV510314	
	TM63D	25	63	ZZA_LV510315	
	TM80D	25	80	ZZA_LV510316	
	TM100D	25	100	ZZA_LV510317	
CVS160B					
3Pole, 3P3D	TM125D	25	125	ZZA_LV516302	
	TM160D	25	160	ZZA_LV516303	
4Pole, 4P3D	TM125D	25	125	ZZA_LV516312	
	TM160D	25	160	ZZA_LV516313	
CVS250B					
3Pole, 3P3D	TM200D	25	200	ZZA_LV525302	
	TM250D	25	250	ZZA_LV525303	
4Pole, 4P3D	TM200D	25	200	ZZA_LV525312	
	TM250D	25	250	ZZA_LV525313	

The accesssories of the Easypact CVS range are shared with the Compact NSX range



CVS 100 / 160 / 250F / NA

Complete fixed/FC device



With thermal-magnetic trip unit TM-D

Type		Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
CVS100F					
3Pole, 3P3D	TM16D	36	16	ZZA_LV510330	
	TM25D	36	25	ZZA_LV510331	
	TM32D	36	32	ZZA_LV510332	
	TM40D	36	40	ZZA_LV510333	
	TM50D	36	50	ZZA_LV510334	
	TM63D	36	63	ZZA_LV510335	
	TM80D	36	80	ZZA_LV510336	
	TM100D	36	100	ZZA_LV510337	
4Pole, 4P3D	TM16D	36	16	ZZA_LV510340	
	TM25D	36	25	ZZA_LV510341	
	TM32D	36	32	ZZA_LV510342	
	TM40D	36	40	ZZA_LV510343	
	TM50D	36	50	ZZA_LV510344	
	TM63D	36	63	ZZA_LV510345	
	TM80D	36	80	ZZA_LV510346	
	TM100D	36	100	ZZA_LV510347	
CVS160F					
3Pole, 3P3D	TM125D	36	125	ZZA_LV516332	
	TM160D	36	160	ZZA_LV516333	
4Pole, 4P3D	TM125D	36	125	ZZA_LV516342	
	TM160D	36	160	ZZA_LV516343	
CVS250F					
3Pole, 3P3D	TM200D	36	200	ZZA_LV525332	
	TM250D	36	250	ZZA_LV525333	
4Pole, 4P3D	TM200D	36	200	ZZA_LV525342	
	TM250D	36	250	ZZA_LV525343	





With NA switch-disconnector unit

Type		Rating (A)	Reference	Price per unit
CVS100NA				
3P	100-NA	100	LV510425	
4P	100-NA	100	LV510426	
CVS160NA				
3P	160-NA	160	LV516425	
4P	160-NA	160	LV516426	
Compact CVS250NA				
3P	250-NA	250	LV525425	
4P	250-NA	250	LV525426	

Easypact CVS100/250 Accessories

SDE adapter mandatory for TM-D trip unit TM	LV429451

The accesssories of the Easypact CVS range are shared with the Compact NSX range

CVS 100 / 160 / 250

Complete fixed/FC device





















EasyPact and Vigi CVS100/160/250

Type	Description		Reference	Price per unit
+ Vigi module				
3 Pole	ME type for CVS100/160 (200 to 440V)		LV429212	
3 Pole	MH type for CVS100/160 (220 to 440 V)		LV429210	
3 Pole	MH type for CVS250 (220 to 440 V)		LV431535	
4 Pole	ME type for CVS100/160 (200 to 440V)		LV429213	
4 Pole	MH type for CVS100/160 (220 to 440 V)		LV429211	
4 Pole	MH type for CVS250 (220 to 440 V)		LV431536	
Terminal extensions				
3 Pole	CVS100/160/250 3P Sprederes from 35mm to 45 mm pitch	Set of 3	LV431563	
4 Pole	CVS100/160/250 4P Sprederes from 35mm to 45 mm pitch	Set of 4	LV431564	
Insulation accessories				
3 Pole	CVS100/160/250 3P (1 Short terminal shield)	Set of 3	LV429515	
4 Pole	CVS100/160/250 4P (1 Short terminal shield)	Set of 4	LV429516	
3 Pole	CVS100/160/250 3P (1 Long terminal shield)	Set of 3	LV429517	
4 Pole	CVS100/160/250 4P (1 Long terminal shield)	Set of 4	LV429518	
3/4 Poles	CVS100/160/250 Interphase barriers (set of 6 per pack)	Set of 6	LV429329	
Electrical auxiliaries				
Auxiliary contacts (changeover)				
	OF or SD or SDE(*) or SDV		29450	
	SDE adapter mandatory for trip unit ™		LV429451	
Voltage releases				
AC	Voltage			
	110-130 V 50/60 Hz	MX	LV429386	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MX	LV429387	
	380-415 V 50 Hz and 440-480 V 60 Hz	MX	LV429388	
	110-130 V 50/60 Hz	MN	LV429406	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MN	LV429407	
	380-415 V 50 Hz and 440-480 V 60 Hz	MN	LV429408	
DC	Voltage			
	12 V	MX	LV429382	
	24 V	MX	LV429390	
	125 V	MX	LV429393	
	250 V	MX	LV429394	
	12 V	MN	LV429402	
	24 V	MN	LV429410	
	125 V	MN	LV429413	
	250 V	MN	LV429414	
Rotary handles				
Direct rotary handles			LV429337	
	Standard black handle			
Standard extended rotary handle				
	Standard extended rotary handle		LV429338	

CVS 400 / 630

Complete fixed/FC device

PB106463



PB106463





With thermal-magnetic trip unitTM-D

Type		Breaking Capacity (kA)	Rating (A)	Reference	Price per unit
CVS400F					
3Pole, 3P3D	TM320D	36	320	ZZA _ LV540305	
	TM400D	36	400	ZZA _ LV540306	
4Pole, 4P3D	TM320D	36	320	ZZA _ LV540308	
	TM400D	36	400	ZZA _ LV540309	
CVS630F					
3Pole, 3P3D	TM500D	36	500	ZZA _ LV563305	
	TM600D	36	600	ZZA _ LV563306	
4Pole, 4P3D	TM500D	36	500	ZZA _ LV563308	
	TM600D	36	600	ZZA _ LV563309	
CVS400N					
3Pole, 3P3D	TM320D	50	320	ZZA _ LV540315	
	TM400D	50	400	ZZA _ LV540316	
4Pole, 4P3D	TM320D	50	320	ZZA _ LV540318	
	TM400D	50	400	ZZA _ LV540319	
CVS630N					
3Pole, 3P3D	TM500D	50	500	ZZA _ LV563315	
	TM600D	50	600	ZZA _ LV563316	
4Pole, 4P3D	TM500D	50	500	ZZA _ LV563318	
	TM600D	50	600	ZZA _ LV563319	

Easypact CVS400/630 NAswitch-disconnector

3Pole	400A-NA	400	LV540400
	630A-NA	630	LV563400
4Pole	400A-NA	400	LV540401
	630A-NA	630	LV563401

Easypact CVS400/630Accessories

SDE adapter mandatory for TM-D and ETS 2.3 trip units	LV540050

The accesssories of the Easypact CVS range are shared with the Compact NSX range

CVS 400 / 630

Complete fixed/FC device

















EasyPact and Vigi CVS400/630

Type	Description		Reference	Price per unit
+ Vigi module				
3 Pole	Type MB 200 to 440 V		LV432455	
4 Pole	Type MB 200 to 440 V		LV432456	
Terminal extensions				
3 Pole	CVS400/630 3P Spredereres 50 mm	Set of 3	LV432490	
4 Pole	CVS400/630 4P Spredereres 50 mm	Set of 4	LV432491	
3 Pole	CVS400/630 3P Spredereres 70 mm	Set of 3	LV432492	
4 Pole	CVS400/630 4P Spredereres 70 mm	Set of 4	LV432493	
Insulation accessories				
3 Pole	CVS400/630 3P Short terminal shield, 45mm (1 piece)	Set of 3	LV432591	
4 Pole	CVS400/630 4P Short terminal shield, 45mm (1 piece)	Set of 4	LV432592	
3 Pole	CVS400/630 3P Long terminal shield, 45mm (1 piece)	Set of 3	LV432593	
4 Pole	CVS400/630 4P Long terminal shield, 45mm (1 piece)	Set of 4	LV432594	
3/4 Poles	CVS400/630 Interphase barriers (set of 6 per pack)	Set of 6	LV432570	
Electrical auxiliaries				
Auxiliary contacts (changeover)				
	OF or SD or SDE(*) or SDV		29450	
	SDE adapter mandatory for trip unit TM		LV540050	
Voltage releases				
AC	Voltage			
	110-130 V 50/60 Hz	MX	LV429386	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MX	LV429387	
	380-415 V 50 Hz and 440-480 V 60 Hz	MX	LV429388	
	110-130 V 50/60 Hz	MN	LV429406	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	MN	LV429407	
	380-415 V 50 Hz and 440-480 V 60 Hz	MN	LV429408	
DC	Voltage			
	12 V	MX	LV429382	
	24 V	MX	LV429390	
	125 V	MX	LV429393	
	250 V	MX	LV429394	
	12 V	MN	LV429402	
	24 V	MN	LV429410	
	125 V	MN	LV429413	
	250 V	MN	LV429414	
Rotary handles				
Direct rotary handles				
	Standard black handle		LV432597	
Standard extended rotary handle				
	Standard extended rotary handle		LV432598	





Air Circuit Breakers

EasyPact MVS

The easy choice for reliable performance



- Performance without compromise
- Assured quality and safety you can trust
- Deliver exceptional reliability and flexibility in its class
- Outstanding value for an optimized feature set
- Precision engineered to meet your needs
- Unbeatable value throughout its lifecycle
- Simple to choose and easy to install

Small to Medium Buildings

Small to Medium Industry

Panel Builders



EasyPact MVS

LV power circuit breakers and switch-disconnectors 800 to 4000A

- 800 to 4000A ratings
- Breaking capacity: 65kA
- Suitable for 690V applications
- Complete selectivity with Ics=Icu=Icw (1 s)
- Intelligent ET range of trip system with display
- Fully protected neutral on 4 pole breakers
- Common accessories for complete range
- Conforms to IEC 60947- 2 & 3

MVS Selection Guide

Range	Current rating	Type	Pole	Operating mechanism	Installation	Protection No.	Type	Neutral position
EasyPact MVS (from 800 to 4000A) Icu=Ics=Icw (1 sec)=50kA & 65kA								
MVS	08 10 12 16 20 25 32 40	N H	3 4	M N O P Q R S T	F W	2 5 6 0	L A V D	12 digits
								Neutral on right hand side
3	2	1	1	1	1	1	1 L A V D	Type Basic protection Protection+current metering Protection+voltage metering Switch disconnector
							Protections No.	
						2 5 6 0	LI protection LSI protection LSIG protection No protection for switch disconnector	
						Type of installation		
					F W	Fixed Draw-out		
					Operating mechanism			
				M	Manually operated ACB/SD			
				N	Electrical 200/240 VAC		MCH + XF + MX	
				O	Electrical 110/130 VAC		MCH + XF + MX	
				P	Electrical 380/415 VAC		MCH + XF + MX	
				Q	Electrical 200/250 VDC		MCH + XF + MX	
				R	Electrical 100/125 VDC		MCH + XF + MX	
				S	Electrical 48/60V DC		MCH + XF + MX	
				T	Electrical 24/30V DC		MCH + XF + MX	
				Number of poles				
			3P 4P	3 Poles 4 Poles				
			Type based on breaking capacity					
		N	Circuit breaker/ switch disconnector Icu=Ics=Icw(1sec)=50kA					
		H	Circuit breaker/ switch disconnector Icu=Ics=Icw(1sec)=65kA					
		Current rating						
	08 10 12 16 20 25 32 40	800A 1000A 1250A 1600A 2000A 2500A 3200A 4000A						

Example 1	MVS32N4EW6LR							
	MVS EasyPact MVS	32 3200A	N 50kA	4 4 Pole	E Electrical operated	W Draw-out type	6 LSIG protection	L Basic trip unit with LED indications	R Neutral on right hand side
Example 2	MVS16H3MF0DR							
	MVS EasyPact MVS	16 1600A	H 65kA	3 3 Pole	M Manual operated	F Fixed	0 No protection	D Switch disconnector	R Neutral on right hand side

MVS

Functions and characteristics
Circuit breakers and switch-disconnectors (MVS08 to MVS40)

CPB100000



Circuit breaker.

CPB100014



Switch disconnector.

Common characteristics			
Number of poles			3/4
Rated insulation voltage (V)	Ui		1000
Impulse withstand voltage (kV)	Uimp		12
Rated operational voltage (V AC 50/60 Hz)	Ue		690
Suitability for isolation	IEC 60947-2		Yes
Degree of pollution	IEC 60664-1		4
Basic circuit-breaker			
Circuit-breaker as per IEC 60947-2			
Rated current (A)	In		at 40°C/ 50°C (1)
Rating of 4th pole (A)			
Sensor ratings (A)			
Type of circuit breaker			
Ultimate breaking capacity (kA rms)	Icu		220...440V
V AC 50/60 Hz			690 V
Rated service breaking capacity (kA rms)	Ics		% Icu
Utilisation category			
Rated short-time withstand current (kA rms)	Icw	1s	220...440 V
V AC 50/60 Hz			690V
		3s	440/690V
Rated making capacity (kA peak)	Icm		220...440 V
V AC 50/60 Hz			690 V
Breaking time (ms) between tripping order and arc extinction			
Closing time (ms)			
Switch-disconnector as per IEC60947-3 and Annex A			
Type of switch-disconnector			
Operational current AC23A			
Rated making capacity (kA peak)	Icm		
Rated short-time withstand current (kA rms)	Icw	1s	
		3s	
Maintenance/Connection/Installation			
Service life	Mechanical	with maintenance	
C/O cyclesx1000		without maintenance	
	Electrical	without maintenance	440 V
			690 V
Connection		Horizontal	
		Vertical	
Dimensions (mm)		Drawout	3P
(H x W x D)			4P
		Fixed	3P
			4P
Weight (kg) (approximate)		Drawout	3P/4P
		Fixed	3P/4P

(1) 50°C Rear Vertical Connections,

MVS

Functions and characteristics
Circuit breakers and switch-disconnectors (MVS08 to MVS40)

	MVS08	MVS10	MVS12	MVS16	MVS20	MVS25	MVS32	MVS40
	800	1000	1250	1600	2000	2500	3200	4000
	800	1000	1250	1600	2000	2500	3200	4000
	800	1000	1250	1600	2000	2500	3200	4000
	H	H	H	H	H	H	H	H
	65	65	65	65	65	65	65	65
	50	50	50	50	50	50	50	50
	100%	100%	100%	100%	100%	100%	100%	100%
	B	B	B	B	B	B	B	B
	65	65	65	65	65	65	65	65
	50	50	50	50	50	50	50	50
	36	36	36	36	36	36	36	36
	143	143	143	143	143	143	143	143
	105	105	105	105	105	105	105	105
	25	25	25	25	25	25	25	25
	<70	<70	<70	<70	<70	<70	<70	<70
	MVS08	MVS10	MVS12	MVS16	MVS20	MVS25	MVS32	MVS40
	HA	HA	HA	HA	HA	HA	HA	HA
	800	1000	1250	1600	2000	2500	3200	4000
	143	143	143	143	143	143	143	143
	65	65	65	65	65	65	65	65
	36	36	36	36	36	36	36	36
	20	20	20	20	20	20	20	20
	10	10	10	10	10	10	10	10
	6000	6000	6000	6000	6000	5000	5000	5000
	4000	4000	4000	4000	4000	2500	2500	2500
	Yes							
	Yes							
	439 x 441 x 395							
	439 x 556 x 395							
	352 x 422 x 297							
	352 x 537 x 297							
	70/85					90/120		
	40/50					60/80		

MVS800A to 4000A





Easypact MVS 800A to 4000A

Type	Description	Breaking capacity (kA)	Current Rating (A)	Reference	Price per unit
MVS fixed type H (65kA at 415V) Air Curcuit Breaker with ETA2 trip unit					
3 Pole	MVS 3P 800A 65kA Fixed	65	800	ZZA_MVS08H3MF2A	
3 Pole	MVS 3P 1000A 65kA Fixed	65	1000	ZZA_MVS10H3MF2A	
3 Pole	MVS 3P 1250A 65kA Fixed	65	1250	ZZA_MVS12H3MF2A	
3 Pole	MVS 3P 1600A 65kA Fixed	65	1600	ZZA_MVS16H3MF2A	
3 Pole	MVS 3P 2000A 65kA Fixed	65	2000	ZZA_MVS20H3MF2A	
3 Pole	MVS 3P 2500A 65kA Fixed	65	2500	ZZA_MVS25H3MF2A	
3 Pole	MVS 3P 3200A 65kA Fixed	65	3200	ZZA_MVS32H3MF2A	
3 Pole	MVS 3P 4000A 65kA Fixed	65	4000	ZZA_MVS40H3MF2A	
4 pole	MVS 4P 800A 65kA Fixed	65	800	ZZA_MVS08H4MF2A	
4 pole	MVS 4P 1000A 65kA Fixed	65	1000	ZZA_MVS10H4MF2A	
4 pole	MVS 4P 1250A 65kA Fixed	65	1250	ZZA_MVS12H4MF2A	
4 pole	MVS 4P 1600A 65kA Fixed	65	1600	ZZA_MVS16H4MF2A	
4 pole	MVS 4P 2000A 65kA Fixed	65	2000	ZZA_MVS20H4MF2A	
4 pole	MVS 4P 2500A 65kA Fixed	65	2500	ZZA_MVS25H4MF2A	
4 pole	MVS 4P 3200A 65kA Fixed	65	3200	ZZA_MVS32H4MF2A	
4 pole	MVS 4P 4000A 65kA Fixed	65	4000	ZZA_MVS40H4MF2A	
MVS withdrawable type H (65kA at 415V) Air Curcuit Breaker with ETA2 trip unit					
3 Pole	MVS 3P 800A 65kA Withdrawable	65	800	ZZA_MVS08H3MW2A	
3 Pole	MVS 3P 1000A 65kA Withdrawable	65	1000	ZZA_MVS10H3MW2A	
3 Pole	MVS 3P 1250A 65kA Withdrawable	65	1250	ZZA_MVS12H3MW2A	
3 Pole	MVS 3P 1600A 65kA Withdrawable	65	1600	ZZA_MVS16H3MW2A	
3 Pole	MVS 3P 2000A 65kA Withdrawable	65	2000	ZZA_MVS20H3MW2A	
3 Pole	MVS 3P 2500A 65kA Withdrawable	65	2500	ZZA_MVS25H3MW2A	
3 Pole	MVS 3P 3200A 65kA Withdrawable	65	3200	ZZA_MVS32H3MW2A	
3 Pole	MVS 3P 4000A 65kA Withdrawable	65	4000	ZZA_MVS40H3MW2A	
4 pole	MVS 4P 800A 65kA Withdrawable	65	800	ZZA_MVS08H4MW2A	
4 pole	MVS 4P 1000A 65kA Withdrawable	65	1000	ZZA_MVS10H4MW2A	
4 pole	MVS 4P 1250A 65kA Withdrawable	65	1250	ZZA_MVS12H4MW2A	
4 pole	MVS 4P 1600A 65kA Withdrawable	65	1600	ZZA_MVS16H4MW2A	
4 pole	MVS 4P 2000A 65kA Withdrawable	65	2000	ZZA_MVS20H4MW2A	
4 pole	MVS 4P 2500A 65kA Withdrawable	65	2500	ZZA_MVS25H4MW2A	
4 pole	MVS 4P 3200A 65kA Withdrawable	65	3200	ZZA_MVS32H4MW2A	
4 pole	MVS 4P 4000A 65kA Withdrawable	65	4000	ZZA_MVS40H4MW2A	

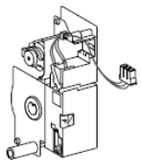
MVS800A to 4000A



Easypact MVS 800A to 4000A

Type	Description	Breaking capacity (kA)	Current Rating (A)	Reference	Price per unit
MVS fixed type HA Air Switch Disconnectors					
3 Pole	MVS 3P 800A HA Switch Disconnector Fixed	143	800	ZZA_MVS08H3MF0D	
3 Pole	MVS 3P 1000A HA Switch Disconnector Fixed	143	1000	ZZA_MVS10H3MF0D	
3 Pole	MVS 3P 1250A HA Switch Disconnector Fixed	143	1250	ZZA_MVS12H3MF0D	
3 Pole	MVS 3P 1600A HA Switch Disconnector Fixed	143	1600	ZZA_MVS16H3MF0D	
3 Pole	MVS 3P 2000A HA Switch Disconnector Fixed	143	2000	ZZA_MVS20H3MF0D	
3 Pole	MVS 3P 2500A HA Switch Disconnector Fixed	143	2500	ZZA_MVS25H3MF0D	
3 Pole	MVS 3P 3200A HA Switch Disconnector Fixed	143	3200	ZZA_MVS32H3MF0D	
3 Pole	MVS 3P 4000A HA Switch Disconnector Fixed	143	4000	ZZA_MVS40H3MF0D	
4 pole	MVS 4P 800A HA Switch Disconnector Fixed	143	800	ZZA_MVS08H4MF0D	
4 pole	MVS 4P 1000A HA Switch Disconnector Fixed	143	1000	ZZA_MVS10H4MF0D	
4 pole	MVS 4P 1250A HA Switch Disconnector Fixed	143	1250	ZZA_MVS12H4MF0D	
4 pole	MVS 4P 1600A HA Switch Disconnector Fixed	143	1600	ZZA_MVS16H4MF0D	
4 pole	MVS 4P 2000A HA Switch Disconnector Fixed	143	2000	ZZA_MVS20H4MF0D	
4 pole	MVS 4P 2500A HA Switch Disconnector Fixed	143	2500	ZZA_MVS25H4MF0D	
4 pole	MVS 4P 3200A HA Switch Disconnector Fixed	143	3200	ZZA_MVS32H4MF0D	
4 pole	MVS 4P 4000A HA Switch Disconnector Fixed	143	4000	ZZA_MVS40H4MF0D	
MVS Withdrawable type HA Air Switch Disconnectors					
3 Pole	MVS 3P 800A HA SD Withdrawable	143	800	ZZA_MVS08N3MW0D	
3 Pole	MVS 3P 1000A HA SD Withdrawable	143	1000	ZZA_MVS10N3MW0D	
3 Pole	MVS 3P 1250A HA SD Withdrawable	143	1250	ZZA_MVS12N3MW0D	
3 Pole	MVS 3P 1600A HA SD Withdrawable	143	1600	ZZA_MVS16N3MW0D	
3 Pole	MVS 3P 2000A HA SD Withdrawable	143	2000	ZZA_MVS20N3MW0D	
3 Pole	MVS 3P 2500A HA SD Withdrawable	143	2500	ZZA_MVS25N3MW0D	
3 Pole	MVS 3P 3200A HA SD Withdrawable	143	3200	ZZA_MVS32N3MW0D	
3 Pole	MVS 3P 4000A HA SD Withdrawable	143	4000	ZZA_MVS40N3MW0D	
4 pole	MVS 4P 800A HA SD Withdrawable	143	800	ZZA_MVS08N4MW0D	
4 pole	MVS 4P 1000A HA SD Withdrawable	143	1000	ZZA_MVS10N4MW0D	
4 pole	MVS 4P 1250A HA SD Withdrawable	143	1250	ZZA_MVS12N4MW0D	
4 pole	MVS 4P 1600A HA SD Withdrawable	143	1600	ZZA_MVS16N4MW0D	
4 pole	MVS 4P 2000A HA SD Withdrawable	143	2000	ZZA_MVS20N4MW0D	
4 pole	MVS 4P 2500A HA SD Withdrawable	143	2000	ZZA_MVS25N4MW0D	
4 pole	MVS 4P 3200A HA SD Withdrawable	143	3200	ZZA_MVS32N4MW0D	
4 pole	MVS 4P 4000A HA SD Withdrawable	143	4000	ZZA_MVS40N4MW0D	

MVS
Accessories



Type	Description	Reference	Price per unit
Remote operation			
Gear Motor			
AC 50/60 Hz	MCH (1 part)		
	100/130 V Ac	47893	
	200/240 VAC	47894	
	380/415 V AC	47896	
DC	24/30 V DC	47888	
	100/130 V DC	47890	
	200/250 V DC	47891	

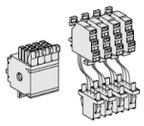


Closing release (XF)	Standard coil (1 part)		
AC 50/60 Hz	24/30 V DC, 24 V AC	33659	
DC	100/130 V AC/DC	MVS15511	
	200/250 V AC/DC	MVS15512	
	380/480 V AC	MVS15513	

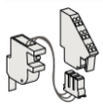
Opening release (MX)	Standard coil (1 part)		
AC 50/60 Hz	24/30 V DC, 24 V AC	33659	
DC	100/130 V AC/DC	33661	
	200/250 V AC/DC	33662	
	380/480 V AC	33664	



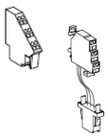
Undervoltage release (MN)	Standard coil		
AC 50/60 Hz	24/30 V DC, 24 V AC	33668	
DC	100/130 V AC/DC	33670	
	200/250 V AC/DC	33671	
	380/480 V AC	33673	



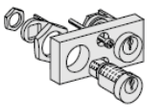
Indication contacts			
	ON/OFF indication contacts (OF)		
	1 additional block of 4 contacts	47080	



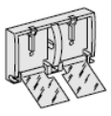
Ready to close contacts			
	1 changeover contact (5A at 240V)	47080	
	Control wiring terminals for fixed circuit breaker	47074	
	Control wiring terminals for draw-out circuit breaker	47849	



Control terminal block	Control terminal block		
	for fixed circuit breaker	47074	
	for draw-out circuit braker	47849	



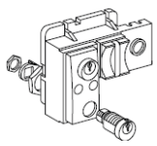
Chassis locking	Disconnected position locking		
By Ronis keylocks	1 lock with 1 key + adaptation kit	64937	
	2 locks 1 key + adaptation kit	64938	
	Ronis 1 lock + 1 keys (without adaptation kit)	41940	
	Ronis 2 locks + 1 keys (without adaptation kit)	41950	
	Adaptation kit (without key locks)	48564	



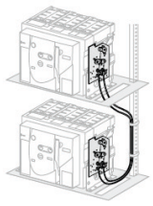
Circuit breaker locking	Pushbutton locking device		
	By Padlocks	48536	

MVS

Accessories

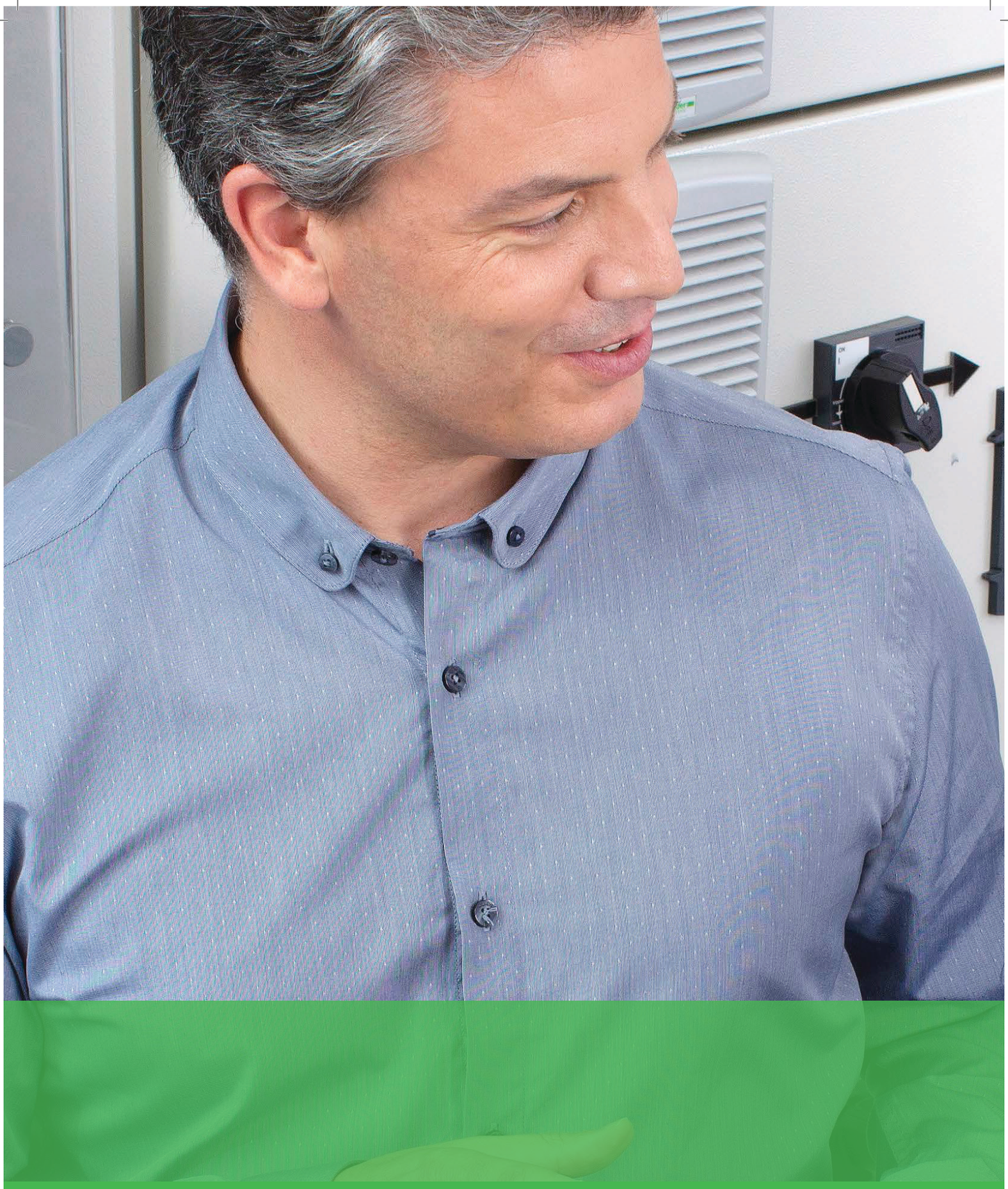


Type	Description	Reference	Price per unit
By Ronis keylocks	Off position locking		
	1 lock with 1 key + adaptation kit	64931	
	2 locks 1 key + adaptation kit	64932	
	Ronis 1 lock + 1 keys (without adaptation kit)	41940	
	Ronis 2 locks + 1 keys (without adaptation kit)	41950	
	Adaptation kit (without key locks)	64925	



Mechanical interlocking for souce change over			
Interlocking of two (2) devices using cables (*)			
	Choose 2 adaptation sets (1 for each device + 1 set of cables)		
	1 adaptation fixture for EasyPact MVS fixed devices	47926	
	1 adaptation fixture for EasyPact MVS drawout devices	47926	
	1 set of 2 cables	33209	
Interlocking of three (3) devices using cables (*)			
	Choose 3 adaptation (inclusing 3 adaptation fixtures + cables)		
	3 sources, only 1 device closed, fixed or drawout devices	48610	
	2 sources + 1 coupling, fixed or drawout devices	48609	
	2 normal + 1 replacement source, fixed or drawout devices	48608	
(*) Can be used with any combination of EasyPact MVS, fixed or drawout devices.			

Installation Manuals	
Mechanical interlocking for EasyPact MVS souce change over	MVS21738
General electrical and mechanical accessories for EasyPact MVS	MVS21736





Power Monitoring

PowerLogic Panorama

Product selection guide

Current transformers



CT
current transformer

Installation

insulated cable,
diameter 21 to 35 mm,
through transformer
busbar through transformer
cable connections

Characteristics

transformation ratio:
40/5 A to 6000/5 A

accuracy: class 0.5 to 3
maximum rated

operational voltage: 720 V AC
tropicalised

Basic panel meters






Name	DM3210	DM3110	DM1310	EM1200
Function	Voltmeter	Ammeter	Frequency	Power, Energy, Power factor

Applications

Panel instrumentation

Panel instrumentation	V	I	F	VAF

Energy efficiency and cost

Sub billing and cost allocation	
Demand and load management	
Billing analysis	

Power availability and reliability

Compliance monitoring	
Sag/swell, transient	
Harmonics	

Revenue metering

Revenue meter	

Characteristics

Measurement accuracy	0.5%	0.5%	0.2%	0.5%
Installation	Flush Mounted, 96mm x 96mm	Flush Mounted, 96mm x 96mm	Flush Mounted, 96mm x 96mm	Flush Mounted, 96mm x 96mm
Voltage measurement	44 to 480 VAC L-L 50/60Hz ±5% Hz 25 to 277 VAC L-L 50/60Hz±5% Hz		20-100 Hz (44 to 480 VAC L-L /25 to 277 VAC L-L)	“80-480 VAC L-l Direct upto 999kV with PT”
Current measurement		CT Operated (1A / 5A AC Nominal, 50mA to 6A AC; 50/60Hz ±5%Hz)		250mA to 6A with 5mA starting current 150mA to 1.2A with CT input, 1mA starting current
Communication ports				Yes
Inputs / Outputs				
Memory capacity				

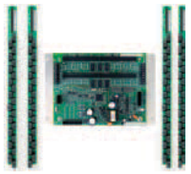
PowerLogic Panorama

Product selection guide

Basic energy meters

Multi-circuit metering




Name	iEM2000/ iEM2010 /iEMw2000T	iEM2100	iEM3000 Series	BCPM	EM4800
Function	kilowatt-hour meters			branch circuit monitor IEC 61036 Class 1	multi-circuit energy meter Class 0.5 ANSI C12.1, C12.20 Class 0.5S IEC 62053-22

Applications

Panel instrumentation

Panel instrumentation	E			I, U, F, P, Q, S, PF, E (Power demand and current demand)	I, U, F, P, Q, S, PF, E (Power demand and current demand)

Energy efficiency and cost

Sub billing and cost allocation					
Demand and load management					
Billing analysis					

Power availability and reliability

Compliance monitoring					
Sag/swell, transient					
Harmonics					

Revenue metering

Revenue meter					

Characteristics

Measurement accuracy		Class 1	Class 1	Class 1/0.5s	class 1 (mains active energy)	Class 0.5S
					Installed in panel or enclosure	Installed in panel or enclosure
Installation		DIN Rail Mounted	DIN Rail Mounted	DIN Rail Mounted	90 – 277 V Line to Neutral voltage Inputs	80 - 480 V AC L-L without PTs, Up to 999 kV with external PTs
					CT strips for branch circuits and external CTs for mains	Split- or solid-core CTs
Voltage measurement		44 to 480 V AC L-L 50/60Hz ±5% Hz	230 VAC ± 20 VAC	3 x 100/173 VAC to 3x 277/480 VAC (50/60Hz)	1 for main	2
		25 to 277 VAC L-L 50/60Hz ±5% Hz				2
Current measurement		40 Direct Connected	63A Direct Connected	63A Direct Connected		
				125A Direct Connected		
				CT Operated		
Communication ports	Pulse		Pulse / Modbus / Mbus	Pulse / Modbus / Mbus		

Basic multi-function metering







Name	PM3000 Series	PM2100/PM2200	PM5100/PM5300/ PM5500
Function	metering & sub-metering Class 0.5S IEC 62053-22 Class 1 IEC 62053-21 Class 2IEC 62053-23	Class 0.5S IEC 62053-22 Class IEC 61000-4-2 Class IEC 61000-3-3	metering & sub-metering Class 0.5S IEC 62053-22 Class 0.2S (PM55xx) IEC 62053-22 Class 1/2 IEC 62053-24

Applications

Panel instrumentation

Panel instrumentation	I, U, F, P, Q, S, PF, E (Power demand and current demand)	I, U, F, P, Q, S, PF, E (Power demand and current demand)	I, U, F, P, Q, S, PF, E (Power demand and current demand)

Energy efficiency and cost

Sub billing and cost allocation			
Demand and load management			
Billing analysis			

Power availability & reliability

Harmonics			
Dip/swell, transient			
Compliance monitoring			

Revenue metering

Revenue metering			

Characteristics

Measurement accuracy (active energy)	Class 0.5	Class 0.5	Class 0.2S (PM55xx) Class 0.5S
Installation	DIN rail	Flush mount 96 mm x 96 mm	Flush mount 96 mm x 96 mm
Voltage measurement	50V to 330V AC (Ph-N) 80V to 570V AC (Ph-Ph) up to 1MV AC (ext VT)	20-480 V AC (L-L) 20-277 V AC (L-N)	20 V L-N / 35 V L-L to 277 V L-N /480 V L-L /600 V L-L (PM55xx)
Current measurement	external CT	external CT	external CT
Communication ports	1	1	2
Inputs / Outputs	2 I/O		4 I/O 6 I/O (PM55xx)
Memory capacity			256 kb 1.1 MB (PM55xx)

CT, Ip/5 A ratio

Catalogue numbers



METSECT5CC●●●



METSECT5ME●●●



METSECT5MB●●●



METSECT5MA●●●



METSECT5MC●●●



METSECT5MF●●●



METSECT5MD●●●

Presentation of commercial reference numbers

MET SE CT R FF XXX

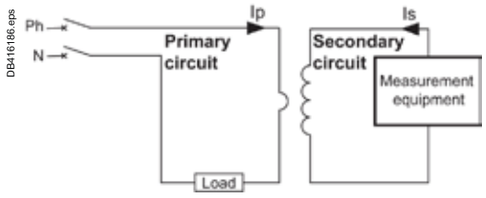
- First digit = secondary rating, R = 5 Amps
- 2 letters = Form Factor
- Last 3 digits = primary rating/10

Examples:

- METSECT5CC008 = 5 A secondary, Cables only, 75 A primary
- METSECT5MC080 = 5 A secondary, Mixed for cables and bars, 800 A primary.

Internal profile type	Cables (mm)	Bars (mm)	Rating Ip/5 A (A)	Commercial reference number
CC				
	Ø21	-	40	METSECT5CC004
			50	METSECT5CC005
			60	METSECT5CC006
			75	METSECT5CC008
			100	METSECT5CC010
			125	METSECT5CC013
			150	METSECT5CC015
			200	METSECT5CC020
			250	METSECT5CC025
Type M- current transformer (mixed: cable/bar profile)				
ME				
	Ø22	10 x 30	150	METSECT5ME015
		11 x 25	200	METSECT5ME020
		12 x 20	250	METSECT5ME025
			300	METSECT5ME030
			400	METSECT5ME040
			500	METSECT5ME050
			600	METSECT5ME060
MB				
	Ø26	12 x 40	250	METSECT5MB025
		15 x 32	300	METSECT5MB030
			400	METSECT5MB040
MA				
	Ø27	10 x 32	150	METSECT5MA015
		15 x 25	200	METSECT5MA020
			250	METSECT5MA025
			300	METSECT5MA030
			400	METSECT5MA040
MC				
	Ø32	10 x 40	250	METSECT5MC025
		20 x 32	300	METSECT5MC030
		25 x 25	400	METSECT5MC040
			500	METSECT5MC050
			600	METSECT5MC060
			800	METSECT5MC080
MF				
	Ø35	10 x 40	250	METSECT5MF025
			300	METSECT5MF030
			400	METSECT5MF040
			500	METSECT5MF050
MD				
	Ø40	12 x 50	500	METSECT5MD050
		20 x 40	600	METSECT5MD060
			800	METSECT5MD080

CT current transformers, Ip/5 A ratio



Application diagram of a CT.

The Ip/5 A ratio current transformer delivers at the secondary a current (Is) of 0 to 5 A that is proportional to the current measured at the primary (Ip).
This allows them to be used in combination with measurement equipment:

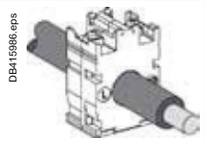
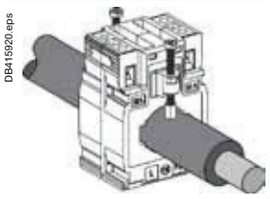
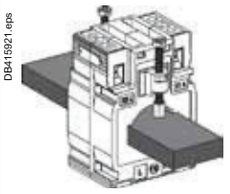
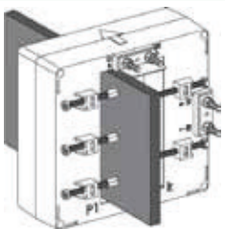
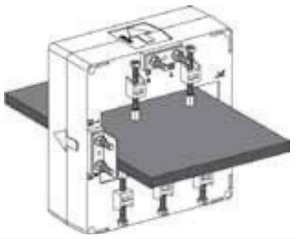
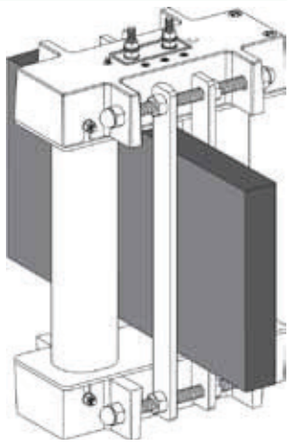
- Ammeters.
- Kilowatt-hour meters.
- Measurement units.
- Control relays.
- etc.

When the primary is energized, the measurement equipment nearly acts as a short circuit which keeps the secondary voltage very low. This voltage will increases significantly if the short circuit is removed.

CT selection - conductor rating aspects

The choice depends on the conductor profile and the maximum intensity of the primary circuit.

CT with let-through primary

Conductor type	Cable	Mixed, bars or cables	Vertical or horizontal bars	Vertical bars	
Suggested Current Transformer and mounting	 DB415986.eps	 DB415920.eps  DB415921.eps	 DB415988.eps  DB415987.eps	 DB415989.eps	
Ratings (A)	40 to 250	150 to 800	200 to 4000	500 to 600	5000 to 6000
CT internal profile	Type C	Type M	Type D (1)	Type V	
		 MA MB MC MD ME MF		 VF	 VV

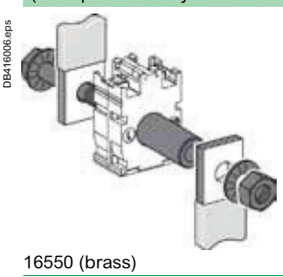
(1) Two secondary connectors (parallel internal wiring - only one secondary winding) for easier cable access. 1 lateral + 1 on one extremity. Warning: only one must be used at a time.

Specific mounting: use of cylinder

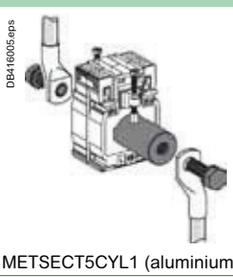
A cylindrical metallic spacer ensures a proper CT positioning when the conductor or the CT cannot be positioned perpendicular. Secured by bolt + nut.

CT with primary connection by screw and nut

(example: use of cylinder with bar or cable)



16550 (brass)



METSECT5CYL1 (aluminium)

Acti 9 iEM2000 Series

Energy Meters



iEM2000T



iEM2010



iEM2105



iEM2155

The Acti 9 iEM2000 and iEM2100 Series Energy Meters offer a cost-attractive, competitive range of single-phase DIN rail-mounted energy meters ideal for sub-billing and cost allocation applications.

Combined with communication systems, like Smart Link, the Acti 9 iEM2000 Series makes it easy to integrate electrical distribution measurements into customer's energy management systems. It's the right energy meter at the right price for the right job.

Two versions are available: 40 A direct measure (iEM2000 models), and 63 A direct measure (iEM2100 models). Within each set of models, there are different versions to match the specific application, from basic to more advanced:

- iEM2000T single-phase kilowatt-hour meter without display, with kWh pulse output.
- iEM2000 single-phase kilowatt-hour meter, kWh pulse outputs, MID certified.
- iEM2100 single-phase kilowatt-hour meter.
- iEM2105 single-phase kilowatt-hour meter, with partial counter, kWh pulse output.
- iEM2010 single-phase kilowatt-hour meter, kWh pulse outputs, MID certified.
- iEM2110 single-phase kilowatt-hour meter, multi-tariffs with partial counter and current and voltage, power measurement. pulse outputs, MID certified.
- iEM2135 single-phase kilowatt-hour meter, multi-tariffs with partial counter and current and voltage, power measurement. M-Bus communication, MID certified.
- iEM2150 single-phase kilowatt-hour meter with partial counter and current, voltage, power measurement. Modbus communication.
- iEM2155 single-phase kilowatt-hour meter, multi-tariffs with partial counter and current and voltage, power measurement. Modbus communication, MID certified.

Innovative design makes the meters smart and simple:
- Easy to install for panel builders.
- Easy to commission for contractors and installers.
- Easy to operate for end users.

Applications
- Cost management applications.
- Bill verification
- Sub-billing and cost allocation, including two tariffs.

Network management applications.
- Basic electrical parameters like current, voltage and power.

Market segments
- Buildings & Industry .
- Data centres and networks.
- Infrastructure (airports, road tunnels, telecom).

Characteristics
- Self-powered meters.
- Compliance with IEC 62053-21, IEC 62053-23, EN 50470-3.
- Compact, 1 or 2 module width.
- Onboard Modbus or M-Bus communication.
- Anti-tamper security features ensure the integrity of your data.
- Single phase circuit plus neutral.
- IP40 front panel and IP20 casing.
- Operating frequency 50/60 Hz.
- MID compliant (selected models) providing certified accuracy and data security.

Meter model and description	Current measurement	Comm. ref. no.
iEM2000T basic energy meter, without display	Direct connected to 40 A	A9MEM2000T
iEM2000T basic energy meter, MID certified	Direct connected to 40 A	A9MEM2000
iEM2000T energy meter, kWh pulse output, MID certified	Direct connected to 40 A	A9MEM2010
iEM2100 basic energy meter	Direct connected to 63 A	A9MEM2100
iEM2105 energy meter, kWh pulse output with partial meter	Direct connected to 63 A	A9MEM2105
iEM2110 energy meter, kWh and kvarh pulse outputs with two tariffs, four quadrant energy measurement, MID certified	Direct connected to 63 A	A9MEM2110
iEM2135 energy meter, M-Bus communication, four quadrant energy measurement, two tariffs, MID certified	Direct connected to 63 A	A9MEM2135
iEM2150 energy meter, Modbus communication, four quadrant energy measurement	Direct connected to 63 A	A9MEM2150
iEM2155 energy meter, Modbus communication, four quadrant energy measurement, two tariffs, MID certified	Direct connected to 63 A	A9MEM2155

Acti 9 iEM2000 Series

Energy Meters

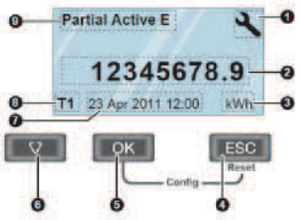
iEM2000 & iEM2100 technical specifications									
FUNCTION GUIDE	iEM2000T	iEM2000	iEM2010	iEM2100	iEM2105	iEM2110	iEM2135	iEM2150	iEM2155
Direct connection	Up to 40 A			Up to 63 A					
Width	1 x 18 mm module (18 mm)			2 x 18 mm modules (36 mm)					
MID compliance		n	n			n	n		n
Multi-tariff						2 tariffs	2 tariffs		2 tariffs
Four quadrant energy measurement						n	n	n	n
Communication							M-Bus	Modbus	
Digital input (tariff switching)						1	1		1
Pulse output for kWh/ kvarh	1		1		1	2			
Pulse output operation	100 pulses / kWh (120 ms long)				1 pulse / kWh (200 ms long)	1 to 1000 pulses / kWh or kvarh (30 to 100 ms long)			
Accuracy class:Active Energy	Class 1 IEC 62053-21	Class 1 IEC 62053-21 Class B EN50470-3	Class 1 IEC 62053-21 Class B EN50470-3	Class 1 IEC 62053-21	Class 1 IEC 62053-21	Class 1 IEC 62053-21 Class B EN50470-3	Class 1 IEC 62053-21 Class B EN50470-3	Class 1 IEC 62053-21	Class 1 IEC 62053-21 Class B EN50470-3
Accuracy class: Reactive Energy						Class 2 (according to IEC62053-23)			
Display capacity		999999.9 kWh		99999 kWh or 999.99 MWh		999999.99 kWh			
Voltage range (L-N)	184 to 276 VAC			184 to 276 VAC		92 to 276 VAC			
Meter constant LED	3200 flashes per kWh			1000 flashes per kWh					
Wiring capacity (Top)	4 mm^2			6 mm^2		4 mm^2			
Wiring capacity (Bottom)	10 mm^2			16 mm^2		32 mm^2			
Consumption	<10 VA			2.5 VA		3 VA			
Temperature	-10°C to 55°C			-25°C to 55°C					
kWh	n	n	n	n	n	n	n	n	n
kVARh						n	n	n	n
Active power						n	n	n	n
Reactive power						n	n	n	n
Power Factor						n	n	n	n
Current and voltage						n	n	n	n
Frequency						n	n	n	n

Acti 9 iEM3000 Series Energy Meters

Functions and characteristics







Front of meter parts
1 Configuration mode
2 Values and parameters
3 Unit
4 Cancellation
5 Confirmation
6 Selection
7 Date and time
8 Tariff currently used (iEM3235, iEM3255, iEM3265, iEM3275)
9 Functions/Measurements

The PowerLogic Energy Meter Series iEM3000 offers a cost-attractive, competitive range of DIN rail-mounted energy meters ideal for sub-billing and cost allocation applications.
Combined with communication systems, like Smart Link, the iEM3000 series make it easy to integrate electrical distribution measurements into customer's facility management systems. It's the right energy meter at the right price for the right job.
Two versions are available: 63A direct measure (iEM3100) and current transformers associated meter (iEM3200).
For each range, eight versions are available to satisfy basic to advanced applications:

Characteristics

- Self-powered meters
- Chain measurement (meters + CTs) accuracy class 1
- Compliance with IEC 61557-12, IEC 62053-21/22, IEC 62053-23, EN50470-3
- Compact, 5 module width
- Graphical display for easy viewing
- Onboard Modbus
- Easy wiring (without CTs) iEM3100 series
- Double fixation on DIN rail (horizontal or vertical)
- Anti-tamper security features ensure the integrity of your data
- MID compliant (selected models) providing certified accuracy and data security

Function guide		iEM3100	iEM3110	iEM3115	iEM3135	iEM3150	iEM3155	iEM3165	iEM3175	iEM3200	iEM3210	iEM3215	iEM3235	iEM3250	iEM3255	iEM3265	iEM3275
Direct measurement (up to 63 A)																	
Measurement inputs through CTs (1 A, 5A)																	
Measurement inputs through VTs																	
Active energy measurements class (total & partial kWh)																	
Four Quadrant Energy measurements																	
Electrical measurements (I, V, P, etc.)																	
Multi-tariff (internal clock)				4	4		4	4	4			4	4		4	4	4
Multi-tariff (external control)				4	2		2	2	2			4	2		2	2	2
Measurement display (number of lines)																	
Digital inputs	Programmable (Tariff control or WAGES input)				1		1	1	1				1		1	1	1
	Tariff control only			2								2					
Digital ouputs	Programmable (kWh pulse or kW alarm)				1		1	1					1		1	1	
	kWh pulse only		1								1						
kW overload alarm																	
M-Bus																	
Modbus																	
BACnet																	
LON																	
MID (legal metrology certification)																	
Width (18 mm module in DIN Rail mounting)		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Power Meter Series iEM3000

Type	Description	Reference	Price per unit
iEM3000	iEM3100 Din Rail Acti9 Energy Meter 63A	A9MEM3100	
	iEM3110 Din Rail Acti9 Energy Meter 63A Pulse MID	A9MEM3110	
	iEM3115 Din Rail Acti9 Energy Meter 63A MID Multi-Tarif	A9MEM3115	
	iEM3135 Din Rail Acti9 Energy Meter 63A M-Bus Comm Port	A9MEM3135	
	iEM3150 Din Rail Acti9 Energy Meter 63A Modbus	A9MEM3150	
	iEM3155 Din Rail Acti9 Energy Meter 63A Modbus, MID + 1DI Wages	A9MEM3155	
	iEM3165 Din Rail Acti9 Energy Meter 63A BACnet MS/TP, MID + 1DI Wages	A9MEM3165	
	iEM3175 Din Rail Acti9 Energy Meter 63A LON TP/FT-10, MID + 1DI Wages	A9MEM3175	
	iEM3200 Din Rail Acti9 Energy Meter TC	A9MEM3200	
	iEM3210 Din Rail Acti9 Energy Meter TC Pulse MID	A9MEM3210	
	iEM3215 Din Rail Acti9 Energy Meter TC MID Multi-Tarif	A9MEM3215	
	iEM3235 Din Rail Acti9 Energy Meter TC M-Bus Comm Port	A9MEM3235	
	iEM3250 Din Rail Acti9 Energy Meter TC Modbus	A9MEM3250	
	iEM 3255 Din Rail Acti9 Energy Meter TC Modbus, MID + 1DI Wages	A9MEM3255	
	iEM3265 Din Rail Acti9 Energy Meter TC BACnet MS/TP, MID + 1DI Wages	A9MEM3265	
	iEM3275 Din Rail Acti9 Energy Meter TC LON TP/FT-10, MID + 1DI Wages	A9MEM3275	
	iEM3200 Din Rail Acti9 Energy Meter 125A	A9MEM3300	
	iEM3210 Din Rail Acti9 Energy Meter 125A Pulse MID	A9MEM3310	
	iEM3215 Din Rail Acti9 Energy Meter 125A M-Bus Comm Port	A9MEM3335	
	iEM3235 Din Rail Acti9 Energy Meter 125A Modbus	A9MEM3350	
	iEM3250 Din Rail Acti9 Energy Meter 125A Modbus, MID + 1DI Wages	A9MEM3355	
	iEM 3255 Din Rail Acti9 Energy Meter 125A BACnet MS/TP, MID + 1DI Wages	A9MEM3365	
	iEM3265 Din Rail Acti9 Energy Meter 125A LON TP/FT-10, MID + 1DI Wages	A9MEM3375	

Acti 9 iEM3000 Series Energy Meters

Functions and characteristics

Function guide		iEM3100 iEM3200 iEM3300	iEM3110 iEM3210 iEM3310	iEM3115 iEM3215	iEM3135 iEM3235 iEM3335	iEM3150 iEM3250 iEM3350	iEM3155 iEM3255 iEM3355 iEM3455 iEM3555	iEM3165 iEM3265 iEM3365 iEM3465 iEM3565	iEM3175 iEM3275 iEM3375
Width (18 mm module, DIN rail mounting)		5 / 5 / 7	5 / 5 / 7	5 / 5	5 / 5 / 7	5 / 5 / 7	5 / 5 / 7 / 5 / 5	5 / 5 / 7 / 5 / 5	5 / 5 / 7
Direct measurement (up to 63A or 125A)		63A / – / 125A	63A / – / 125A	63A / –	63A / – / 125A	63A / – / 125A	63A / – / 125A / LVCT / Rog.	63A / – / 125A / LVCT / Rog.	63A / – / 125A
Measurement inputs through CTs (1A, 5A)		– / ■ / –	– / ■ / –	– / ■	– / ■ / –	– / ■ / –	– / ■ / – / LVCT / Rog.	– / ■ / – / LVCT / Rog.	– / ■ / –
Measurement inputs through VTs					– / ■ / –	– / ■ / –	– / ■ / – / ■ / ■	– / ■ / – / ■ / ■	– / ■ / –
Active Energy measurements class (Total & partial kWh)		1 / 0.5S / 1	1 / 0.5S / 1	1 / 0.5S	1 / 0.5S / 1	1 / 0.5S / 1	1 / 0.5S / 1 / 0.5S / 0.5S	1 / 0.5S / 1 / 0.5S / 0.5S	1 / 0.5S / 1
Four Quadrant Energy measurements					■		■	■	■
Electrical measurements (I, V, P, ...)					■	■	■	■	■
Multi-tariff (internal clock)				4	4		4	4	4
Multi-tariff (external control)				4	2		2	2	2
Measurement display (number of lines)		3	3	3	3	3	3	3	3
Digital inputs	Programmable (Tariff control or WAGES input)				1		1	1	1
	Tariff control only			2					
Digital ouputs	Programmable (kWh pulse or kW alarm)				1		1	1	
	kWh pulse only		1						
kW overload alarm					1		1	1	
M-Bus protocol					■				
Modbus protocol						■	■		
BACnet protocol								■	
LON									■
MID (legal metrology certification)			■	■	■		3155 / 3255 / 3355	3165 / 3265 / 3365	■



Acti 9 iEM3100 models direct connected (63 A) Direct connected up to 63 A

Connectivity advantages	
Programmable digital input	External tariff control signal (4 tariffs) Remote Reset partial counter External status, e.g. breaker status Collect WAGES pulses
Programmable digital output	kWh overload alarm (iEM3135, iEM3155, iEM3165 iEM3235, iEM3255, iEM3265, EM3335, iEM3355, iEM3365, iEM3455, iEM3465, iEM3555, iEM3565) kWh pulses
Graphic LCD display	Scroll energies Current, voltage, power, frequency, power factor
Communication	Serial communication options are available with M-Bus, Modbus, BACnet or LON protocols
Standards	
Industry standards	IEC 61557-12, IEC 61036, IEC 61010, UL61010-1, IEC 62053-21/22 Class 1 and Class 0.5S, IEC 62053-23 ANSI C12.20 0.5%

PB108424



Acti 9 iEM3200 models (1 A / 5 A CT connected)

Multi-tariff capability
The Acti 9 iEM300 Series allows arrangement of kWh consumption in four different register. This can be cotrolled by:
- Digital Inputs. Signal can be provided by PLC or utilities
- Internal clock programmable by HMI
- Through communication

This function allows users to:
- Make tenant metering for dual source applications to differentiate backup source or utility source
- Understand the consumption during working time and non-working time, and between working days and weekends
- Follow up feeders consumption in line with utility tariff rates

Acti 9 iEM3000 Series Energy Meters

Catalogue numbers

Specification guide	iEM3100/iEM3300 Models							
	iEM3100 iEM3300	iEM3110 iEM3310	iEM3115	iEM3135 iEM3335	iEM3150 iEM3350	iEM3155 iEM3355	iEM3165 iEM3365	iEM3175 iEM3375
Current (max.) Direct connected (iEM31xx)	63A for iEM3100 models, 125A for iEM3300 models							
Meter constant LED	500/kWh							
Pulse output		Up to 1000p/kWh		Up to 1000p/kWh		Up to 1000p/kWh		
Multi-tariff			4 tariffs	4 tariffs		4 tariffs		
Communication				M-bus	Modbus	Modbus	BACnet	LON
DI/DO		0/1	2/0	1/1		1/1	1/1	1/0
MID (EN50470-3)		■		■		■	■	■
Network	1P+N, 3P, 3P+N							
Accuracy class	Class 1 (IEC 62053-21 and IEC61557-12) Class B (EN50470-3)							
Wiring capacity	16 mm² for iEM3100 models, 50 mm² for iEM3300 models							
Display max.	LCD 99999999.9kWh							
Voltage (L-L)	3 x 100/173 V AC to 3 x 277/480 V AC (50/60 Hz)							
IP protection	IP40 front panel and IP20 casing							
Temperature	-25°C to 55°C (K55)							
Product size	5 x 18 mm for iEM3100 models, 8 x 18 mm for iEM3300 models							
Overvoltage and measurement	Category III, Degree of pollution 2							
kWh	■	■	■	■	■	■	■	■
kVARh				■		■	■	■
Active power				■	■	■	■	■
Reactive power				■		■	■	■
Currents and voltages				■	■	■	■	■
Overload alarm				■		■	■	■
Hour counter				■		■	■	■

Specification guide	iEM3200 Models							
	iEM3200	iEM3210	iEM3215	iEM3235	iEM3250	iEM3255	iEM3265	iEM3275
1 A / 5 A CTs (max current)	6 A							
Meter constant LED	5000/kWh							
Pulse output frequency		Up to 500p/kWh		Up to 500p/kWh		Up to 500p/kWh		
Multi-tariff			4 tariff	4 tariffs		4 tariffs		
Communication				M-bus	Modbus	Modbus	BACnet	LON
DI/DO		0/1	2/0	1/1		1/1	1/1	1/0
MID (EN50470-3)		■	■	■		■	■	■
Network	1P+N, 3P, 3P+N support CTs			1P+N, 3P, 3P+N support CTs & VTs				
Accuracy class	Class 0.5S (IEC 62053-22 and IEC61557-12) Class C (EN50470-3)(1)							
Wiring capacity	6 mm² for currents and 4 mm² for voltages							
Display max.	LCD 99999999.9kWh or 99999999.9MWh							
Voltage (L-L)	3 x 100/173 V AC to 3 x 277/480 V AC (50/60 Hz)							
IP protection	IP40 front panel and IP20 casing							
Temperature	-25°C to 55°C (K55)							
Product size	5 steps of 18 mm							
Overvoltage & measurement	Category III, Degree of pollution 2							
kWh	■	■	■	■	■	■	■	■
kVARh				■		■	■	■
Active power				■	■	■	■	■
Reactive power				■		■	■	■
Currents and voltages				■	■	■	■	■
Overload alarm				■		■	■	■
Hour counter				■		■	■	■

(1) For 1 A CTs Class 1 (IEC6253-21 and IEC61557-12 Class B (EN50470-3)

Power Meter Series PM3200

Functions and characteristics



Power Meter Series PM3200

This PowerLogic Power meter offers basic to advanced measurement capabilities. With compact size and DIN rail mounting, the PM3200 allows mains and feeders monitoring in small electrical cabinets. Combined with current transformers and voltage transformers, these meters can monitor 2-, 3- and 4-wire systems. The graphic display has intuitive navigation to easily access important parameters.

Function guide		PM3200 Range			
		PM3200	PM3210	PM3250	PM3255
Performance standard					
IEC61557-12 PMD/Sx/K55/0.5					
General					
Use on LV and HV systems					
Number of samples per cycle		32	32	32	32
CT input 1A/5A					
VT input					
Multi-tariff		4	4	4	4
Multi-lingual backlit display					
Instantaneous rms values					
Current, voltage	Per phase and average				
Active, reactive, apparent power	Total and per phase				
Power factor	Total and per phase				
Energy values					
Active, reactive and apparent energy; import and export					
Demand value					
Current, power (active, reactive, apparent) demand; present					
Current, power (active, reactive, apparent) demand; peak					
Power quality measurements					
THD Current and voltage					
Data recording					
Min/max of the instantaneous values					
Power demand logs					
Energy consumption log (day, week, month)					
Alarms with time stamping			5	5	15
Digital inputs/digital outputs			0/1		2/2
Communication					
RS-485 port					
Modbus protocol					



Power Meter Series PM3255



Power Meter Series PM3210

Connectivity advantages	
Programmable digital input	External tariff control signal (4 tariffs) Remote Reset partial counter External status like breaker status Collect WAGES pulses
Programmable digital output	Alarm (PM3255) kWh pulses
Graphic LCD display	Backlit graphic display allows smart navigation in relevant information and in multi languages
Communication	Modbus RS485 with screw terminals allows connection to a daisy chain

Power Meter Series PM3200

Type	Description	Reference	Price per unit
PM3200	PM3200 Din rail Acti9 Power meter 63A	METSEPM3200	
	PM3210 Din rail Acti9 Power meter 63A +THD + 5 Alarms + pulse output	METSEPM3210	
	PM3250 Din rail Acti9 Power meter 63A +THD + 14 Alarms + RS485 Modbus	METSEPM3250	
	PM3255 Din rail Acti9 Power meter 63A +THD + 14 Alarms + RS485 Modbus + Mem	METSEPM3255	

*For all other meters, please contact the Schneider Electric Customer Care Center (CCC) with telephone details on the last page.

Power Meter Series PM3200

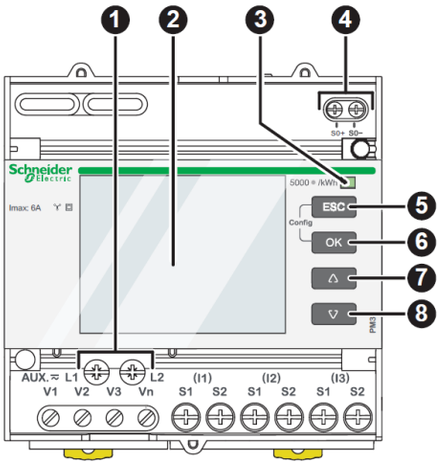
Functions and characteristics



Power Meter Series PM3200



Power Meter Series PM3255



Front of meter parts
1 Control power
2 Display with white backlit
3 Flashing yellow meter indicator (to check accuracy)
4 Pulse output for remote transfer (PM3210)
5 ESC Cancellation
6 OK Confirmation
7 Up
8 Down

This PowerLogic Power meter offers basic to advanced measurement capabilities. With compact size and DIN rail mounting, the PM3200 allows mains and feeders monitoring in small electrical cabinets. Combined with current transformers and voltage transformers these meters can monitor 2-, 3- and 4-wire systems. The graphic display has intuitive navigation to easily access important parameters.

Four versions are available offering basic to advanced applications:

- ■ PM3200.
- □ Electrical parameters I, In, U, V, PQS, E, PF, Hz.
- □ Power/current demand.
- □ Min/max.
- ■ PM3210 .
- □ Electrical parameters I, In, U, V, PQS, E, PF, Hz, THD.
- □ Power/current demand, peak demand.
- □ Min/max.
- □ 5 timestamped alarms.
- □ kWh pulse output.
- ■ PM3250
- □ Electrical parameters I, In, U, V, PQS, E, PF, Hz, THD.
- □ Power/current demand, peak demand.
- □ Min/max.
- □ 5 timestamped alarms
- □ LED to indicate communications
- □ RS-485 port for Modbus communication
- ■ PM3255.
- □ Electrical parameters I, In, U, V, PQS, E, PF, Hz, THD.
- □ Power/current demand and peak demand.
- □ Flexible power and energy data logging.
- □ Min/max. and 15 timestamped alarms.
- □ LED to indicate communications.
- □ Up to 4 tariffs management.
- □ 2 digital inputs, 2 digital outputs.
- □ Memory for load profile (demand 10mn to 60mn).
- □ Memory for Energy (kWh, kVARh, kVAh) logging at 10, 15, 20, 30 or 60 minutes.
- □ RS-485 port for Modbus communication.

- ■ Innovative design makes the meters smart and simple.
- ■ Easy to install for panel builders.
- ■ Easy to commission for contractors and installers.
- ■ Easy to operate for end users.

Applications

Cost management applications
- ■ Bill checking
- ■ Sub-billing, including WAGES view
- ■ Cost allocation,including WAGES view

Network management applications
- ■ Panel instrumentation
- ■ Up to 15 onboard timestamped alarms to monitor events
- ■ Easy integration with PLC system by input/output interface

Market segments
- ■ Buildings
- ■ Industry
- ■ Data centres and networks
- ■ Infrastructure (airports,road tunnels, telecom)

Commecial Reference numbers

Meter model and description	Performance	Comm. ref. no.
PM3200 basic power meter	Basic power meter	METSEPM3200
PM3210 power meter with pulse output	Power, current, THD, peak demand	METSEPM3210
PM3250 power meter with RS-485 port	Power, current, THD, peak demand	METSEPM3250
PM3255 power meter plus 2 digital inputs, 2 digital outputs with RS485 port	Power, current, THD, peak demand, memory for load profile	METSEPM3255

Power Meter Series PM3200

Functions and characteristics

Function guide		PM3200 Range			
		PM3200	PM3210	PM3250	PM3255
Performance standard					
IEC61557-12 PMD/Sx/K55/0.5		■	■	■	■
General					
Use on LV and HV systems		■	■	■	■
Number of samples per cycle		32	32	32	32
CT input 1 A/5 A		■	■	■	■
VT input		■	■	■	■
Multi-tariff		4	4	4	4
Multi-lingual backlit display		■	■	■	■
Instantaneous rms values					
Current, voltage	Per phase and average	■	■	■	■
Active, reactive,apparent power	Total and per phase	■	■	■	■
Power factor	Total and per phase	■	■	■	■
Energy values					
Active, reactive and apparent energy; import and export		■	■	■	■
Demand value					
Current, power (active, reactive, apparent) demand; present		■	■	■	■
Current, power (active, reactive, apparent) demand; peak			■	■	■
Power quality measurements					
THD Current and voltage			■	■	■
Data recording					
Min/max of the instantaneous values		■	■	■	■
Power demand logs					■
Energy consumption log (day, week, month)					■
Alarms with time stamping			5	5	15
Digital inputs/digital outputs			0/1		2/2
Communication					
RS-485 port				■	■
Modbus protocol				■	■

PB108434



Power Meter Series PM3210

Connectivity advantages	
Programmable digital input	External tarif control signal (4 tariffs). Remote Reset partial counter. External status like breaker status. Collect WAGES pulses.
Programmable digital output	Alarm (PM3255) kWh pulses
Graphic LCD display	Backlit graphic display allows smart navigation in relevant information and in multi languages
Communication	Modbus RS-485 with screw terminals allows connection to a daisy chain

PM2000 multi-function meters

Functions and characteristics



PM2000 series LED display meter



PM2000 LCD display

- Functions and characteristics
- Introducing EasyLogic PM2000 series,next generation power meter which offers all the measurement capabilities equired to monitor an electrical installation in a single 96 x 96mm (3.77 x 3. 77 in) unit. PM2000 meters are available in LED and LCD display variants .

- PM2100 series:LED display type: Intuitive navigation with self-guided, three buttons, Bright red colour LEDsof 14.2 mm (0.55 in) height. Two columns of LEDs, one on each side of the meter's front panel indicates the parameter name chosen for display
- PM2200 series: LCD display type: Monochrome graphical LCD of 128x128 resolution with viewable area of 67 x 62.5 mm (2.63 in x 2.46 in) lets the users read all three phase measured values simultaneously. The bright anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Intuitive menus, multi-language text, icons and graphics create a friendly environment to learn about your electrical network.

Applications

Cost management:

- Electrical installation remote monitoring
- Energy accounting and balancing
- Tenant and sub-billing
- Panel instrumentation
- Energy management

Network management:

- Power quality analysis: THD and individual harmonics up to 15th and 31st order for Volts and Amps, per-phase
- Measurement of True PF and Displacement PF
- Recording Min/Max values of instantaneous parameters with date & timestamp
- Optional 10 modules comprising either 2 Digital Inputs and 2 Outputs, or 2Analogue Inputs and 2 Outputs for comprehensive WAGES monitoring
- Calculates % unbalance for voltage & current

Main characteristics:

- Easy to install: Mounts using two clips, no tools are required. Compact meter with 54 mm (2.12 in) depth, connectable up to 480 +/-10% AC Volts L-L without voltage transformers for installations compliant with measurement category III, and double insulated.
- Easy to operate: Test LED at the front panel used for test and calibration of the meter on site or laboratory. Heart-beat LED indicates normal functioning and communication status if connected to RS485 network.

Product standard compliance

- ◘ Active energy Class 1.0 as per IEC 62053-21
- ◻ Active energy Class 0.5S as per IEC 62053-22 (partial compliance for active energy test clause only)
- ◘ Reactive energy Class 2.0 as per IEC 62053-23
- ◘ Reactive energy Class 1.0 as per IEC 62053-24 (partial compliance for reactive energy test clause only)

- Tested in accordance with IEC 62052-11 standard for
  - ◘ 5A, I-nominal
  - ◘ 1 A, I-nominal (field settable).

- Power quality analysis: The PM2000 offers THD measurements and Individual harmonics up to 15th order for voltage and current parameters, per-phase basis in PM2x20 variants, and up to 31st order in PM2x30 types.
- Load management: Simultaneous display of peak, present, predicted & rising demands of all the four demand parameters (W, VA, VAR, Amps) with date and time of occurrence.
- Billing: Tenant billing/utility meter cross check (where local regulations are not applicable).
- Timer: Active load timer, Meter operation timer and Run hours timer. These features help advise maintenance requirements and scheduling.
- Password: Field configurable password for securing set up information and prevent tampering of integrated values.
- Cyber security: Option for disabling RS485 port through front panel keys against unauthorized access. It helps during installation and trouble shooting of communication network.
- LED display: Auto scaling, 9+3 digits for energy, 4 digits for other parameters.
- LCD display: 6 digits with auto scaling for energy and other parameters.
- 12am snap shot: summary page stored in the meter, can be retrieved within 24 hours.
- Rate counters: 2 configurable counters display values in custom specified units based on energy recorded (e.g., kgCO2, carbon emission or energy cost).
- Energy preset feature: For retrofit application.

Commercial reference numbers

Ref. number	Model
METSEPM2110	PM2110
METSEPM2120	PM2120
METSEPM2130	PM2130
METSEPM2210	PM2210
METSEPM2220	PM2220
METSEPM2230	PM2230
METSEPM2KDGTLI022	PM2K2DIDO
METSEPM2KANLGI022	PM2K2AIAO
METSEPM2KANLGI011	PM2K1AIAO*

* Future reference.

See your Schneider Electric representative for complete ordering information.

PM2000 multi-function meters

Functions and characteristics

PB114317



Rear of PM2000 closed

PB114318



Rear of PM2000 open

PB114321



Rear of PM2000 without I/O module

General	
Use on LV and MV systems with onsite programmable PT/CT ratio	
Basic metering with THD, Individual Harmonics, RTC and min/max readings	
Instantaneous rms values	
Current	Average line current of 3-phase, per-phase, and calculated neutral current
Voltage	Average voltage of L-L, L-N parameters, and per-phase
Frequency	Any available line
Real, reactive, and apparent power	Total and per-phase value
Displacement power factor	Average and per-phase signed, four quadrant
True Power Factor	Average and per-phase signed, four quadrant
% Unbalance	Among the phase for Amps, V L-N, V L-L
Energy values stored in non-volatile memory	
Four quadrant measurement for Delivered (Forward or Import) and Received (Reverse or Export) energy	Accumulated energy values for Active, Reactive & Apparent Energy parameters, quadrant basis Net & Total (absolute) values
Timer	Accumulated time counters for active load timer, meter operation timer, run hours and power outage counter
Old Registers	Facilitates retrieval of last cleared energy values
Demand values	
Current average	Present, Last, Predicted, Peak, and Peak Date Time
Active power	Present, Last, Predicted, Peak, and Peak Date Time
Reactive power	Present, Last, Predicted, Peak, and Peak Date Time
Apparent power	Present, Last, Predicted, Peak, and Peak Date Time
Demand sync methods	Thermal, Timed, Command Sync, and Clocked Sync
Demand calculation mode	Sliding, fixed and rolling block
Demand intervals	Settable from 1 to 60 minutes, in the step of 1 minute
Display	
PM2100 series	Bright red colour LED display, 7 segment LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, Auto range
PM2200 series	Full scape, monochrome graphical LCD of 128x128 resolution with viewable area of 67 x 62.5mm (2.63 in x 2.46 in)
Visualization mode for signs	IEC or IEEE type in LCD display meter
Communication	
RS485 serial	Channel connection Industry standard Modbus RTU protocol
Integration with software	SCADA/ DCS/ PMS/ EMS/ BAS/ BMS software
Native Plug and Play support	Schneider Electric energy management system software - StruxureWare Power Monitoring Expert, StruxureWare PowerSCADA Expert along with ION Setup programming support
Min/Max values	
Minimum & Maximum value recording of 3-ph average or total	For 8 parameters, viz., V L-L, V L-N, Amps, PF, Hz, W, VA, VAR with date and time stamp, resettable separately through set up mode
Diagnostics	
Diagnostic page	Indicates LED/LCD status, sl number, diag pages, OS & RS version
Lock/ Un-Lock	
Page Lock & Unlock (PM2100 series)	Unique feature to ensures that commonly referred page is restored in 4 minutes of inactive time
Rate 1 counter [+1]	
$kgCO_2$ emission (example)	Rate counter can be configured to display the CO_2 emission in $kgCO_2$ format based on the kWh measured either in delivered or received direction.
Rate 2 counter [+1]	
Tariff counter (example)	Rate counter can also be configured to calculate the electricity cost based on the energy consumption in customized currency format.
12am snap shot	
12am snap shot[+1]	Snap shot of Avg Voltage, Avg Current, Total Active Power & Energy delivered as measured by the meter at 12am. Snap shot available until 12am next day

[+1] *In PM2200 (LCD) series meters*

PM2000 multi-function meters

Functions and characteristics

PB114320



Rear of PM2000 with I/O module

PB114319



Rear of PM2000 with I/O module disconnected

Electrical characteristics	
Type of measurement	True RMS 64 samples per cycle
Measurement accuracy	
Current, average & per-phase	+/-0.5%
Voltage average & per-phase	+/-0.5%
Frequency	+/-0.05%
Power Factor, average & per-phase	+/- 0.01
Power (W-Active, VA- Apparent)	+/- 0.5%
Power (VAR- Reactive)	+/- 1.0%
Real/ Active Energy (Wh)	Class 0.5S as per IEC 62053-22 and Class 1.0 as per IEC 62053-21 for both CT nominal of 5 A and 1 A[+2]
Reactive Energy	Class 1.0 as per IEC 62053-24
Apparent Energy	+/-0.5%
THD% and Individual Harmonics- V & A	+/- 5% FS for THD & Individual harmonics
Input-voltage	
VT primary	999 kV L-L max, secondary voltage depends on VT ratio
U nominal	277 V L-N/480V L-L
Measured V with full range	20-277 VLN/35 - 480 V L-L, cat III 20-347 VLN/35 - 600 V L-L, cat II
Permanent overload	750 V AC L-L
Impedance	=> 5 MΩ
Frequency nominal	50/60 Hz
VA burden	< 0.2 VA at 240 V AC L-N
Input-current	
CT ratings	Primary adjustable 1 A to 32768 A Secondary 1 A or 5 A I-nominal
Measured Amps with over range & Crest Factor	5 mA to 6 A
Over current withstand	Continuous 12A, 10s/hr 50A, 1s/hr 500A
Impedance	< 0.3 m
Frequency nominal	50/60 Hz
VA Burden	< 0.1 VA at 6A
AC control power	
Operating range	44- 277 V AC ±10%
Burden	<8 VA/3.3W at 240V AC L-N
Frequency	45 to 65 Hz
Ride-through time	100 ms typical at 120 V AC and maximum burden 400 ms typical at 230 V AC and maximum burden
DC control power	
Operating range	44-277V DC ±10%
Burden	<2W at 240 V DC
Ride-through time	50 ms typical at 125 V DC and maximum burden
Real time clock	
Ride-through time	3 years
Displays update	
Instantaneous	1s
Demand	15s
Harmonics	5s
Wiring configuration	
User programmable	1ph, 2w, LN 1ph, 2w, LL 1ph, 3w, LL with N (2phase) 3ph, 3w, Delta, Ungrounded 3ph, 3w, Delta, Corner Grounded [+3] 3ph, 3w, Wye, Ungrounded [+3] 3ph, 3w, Wye Grounded [+3] 3ph, 3w, Wye, Resistance Grounded [+3] 3ph, 4w, Open Delta, Center-Tapped [+3] 3ph, 4w, Delta, Center-Tapped [+3] 3ph, 4w, Wye, Ungrounded [+3] 3ph, 4w, Wye Grounded 3ph, 4w, Wye, Resistance Grounded [+3]

[+1] In PM2200 (LCD) series meters
[+2] For 1 A CT nominal, additional error of ±1% from 50 mA to 150 mA, ±2% for current > 10 mA to < 50 mA. Partial standard compliance for Class 0.5S meter type (energy test clause only)
[+3] Through communication in PM2100 series meters

PM2000 multi-function meters

Functions and characteristics

Functions and characteristics	
Mechanical characteristics	
Weight	~ 300 gm (10.58 oz)
IP degree of protection	IP51 front side, IP30 meter body as per IEC 60529
Material	Polycarbonate meets UL 94V-0 flammability rating
Dimensions W x H x D	96 x 96 x 54mm (3.78 x 3.78 x 2.13 in) maximum (depth of the meter from housing mounting flange) and 13 mm (0.51 in) (protrusion of meter from housing flange). Meter depth with IO module is 74 mm
Mounting position	Vertical
Panel thickness	5 mm (0.196 in) maximum
Environmental characteristics	
Operating temperature	Meter -10 to +60 °C (+14 to +140 °F)
Storage temperature	Meter -25 to +70 °C (-13 to +158 °F)
Humidity rating	5 to 95% RH at 50 °C (122 °F) (non-condensing)
Pollution degree	2
Altitude	2000 m (6561 ft) Category III
Product life	>7 years
Electromagnetic compatibility[+4]	
Electrostatic discharge	IEC 61000-4-2
Immunity to radiated field	IEC 61000-4-3
Immunity to fast transients	IEC 61000-4-4
Immunity to impulse waves	IEC 61000-4-5
Conducted immunity	IEC 61000-4-6
Immunity to magnetic fields	IEC 61000-4-8
Immunity to voltage dips	IEC 61000-4-11
Emissions	Emissions FCC Part 15 Class A
Safety	
Europe	CE, as per IEC 61010-1 Ed-3
US and Canada	cULus as per UL61010-1 and CAN/CSA-C22.2 No. 61010-1, for 600V AC
Measurement category (Voltage and Current inputs)	CAT III up to 480 V L-L CAT II up to 600 V L-L
Overvoltage Category (Control power)	CAT III up to 300 V L-N
Dielectric	As per IEC/UL 61010-1 Ed-3
Protective Class	II, Double insulated for user accessible parts
Green premium	EOL, REACH, PEP, RoHS complied
Other certification	RCM (Australia), EAC (Russia)
Communication	
RS 485 port	Modbus RTU: 2-Wires, with ground & shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None DLF3000: Firmware update through communication port
Pulse Output – POP	Max 40 V DC, 20 mA 20 ms ON time Configurable pulse weight from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)
Isolation	2.5 kV RMS, double insulated
Protection features	Password protected for set-up & clearing energy and Min/Max data
Display language	English, Spanish, French, Chinese, German, Portugese, Russian
Technical publication	Printed installation guide (IG) with the meter in multi language (EN,ES,FR,DE,PT, RU,TR,ZH)
Human machine interface	
Display type	LED display: 7 segment LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row 2 columns of LEDs, one on each side of the LED panel to indicate the parameters under measurement 9+3 digit format for energy and 4 digit for other parameters LCD display: Monochrome graphical LCD of 128x128mm (5.04x5.04 in) resolution with viewable area of 67x62.5mm (2.64x2.46 in)
Keypad	PM2100 series: 3 buttons for navigation & combination of 2 buttons for performing set-up, Lock/unlocking of page, Diagnostic page operation PM2200 series: 4 buttons for intuitive navigation of HMI/ UI pages
CAL LED Indicator	Red colour, meter constant is configurable from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)
Comm. activity	Green LED (for indicating RS485 interface or heart beat pulse)

[+4] as per IEC 61326-1 standard (Emission)

PM2000 multi-function meters

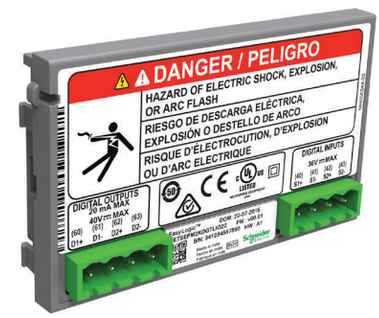
Functions and characteristics

PB115529



Rear of PM2200 with I/O module

DIDOISO



Digital I/O module

PB115540



Analogue I/O module

Electrical characteristics of IO modules	
Status Inputs (Digital Inputs)	
Voltage ratings	18.5 to 36 V DC, OFF 0 to 4 V DC
Input resistance	110 kΩ
Max Frequency	2 Hz (T ON min = T OFF min = 250 ms)
Detect Time	20 ms
Update time	1 s
Isolation	2.5 kV RMS
Application	Breaker status inputs or pulse inputs from
Display support	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only. Other measuring devices and display through totalizing counter.
Set up and configuration	Through set-up software
Digital Outputs	
Voltage ratings	40 V DC max, 20mA max
On Resistance	50 Ω max
Meter constant	Configurable from 1 to 9999000 k_h (kWh, kVARh, kVAh)
Pulse width Pulse frequency	20 ms 25 Hz
Leakage current	1 micro Amps
Isolation	2.5 kV RMS
Alarm conditions	14 set point driven alarms, 4 Unary alarms, 2 Digital inputs status
Application	Pulse output: configurable for energies upper / lower limit: configurable for 14 parameters
Display support	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set up and Configuration	Through set-up software
Analogue inputs	
Measurement scale	4-20 mA
Input impedance	=<300 Ω
Max source impedance	>500 Ω
Update rate	1 s
Accuracy	1% of Full scale at ambient temp 0.1%/K for de-rating
Voltage ratings	Typical 12 V (max 30 V)
Power Consumption	<1.5 Watts
Isolation	2.5 kV RMS
Application	Configurable for inputs from flow rates, RPM, fluid level, oil pressure, temperature measurement devices or transducers with option of 81 different Unicode selection. Configuration via set up software
Display	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set up and configuration	Through set up software
Analogue outputs	
Scale	4-20 mA
Load impedance	=<600 Ω
Update rate	1s
Accuracy	1% of Full scale at ambient temp
Voltage ratings	Typical 12 V (max 30 V)
Power Consumption	<1.5 Watts
Isolation	2.5 kV RMS
Application	Analogue outputs can be associated to 40 different instantaneous parameters
Display	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set-up & configuration	Through set-up software
Mechanical characteristics	
Mechanical dimension	90.5 mm W x 53 mm H x 14.67 mm D (without connector) (3.56 in x 2.08 in x 0.57 in)
Weight	50 gms (1.76 oz)

* as per IEC 61326-1

PM2000 multi-function meters

Functions and characteristics

Feature set summary	PM2110	PM2120	PM2130	PM2210	PM2220	PM2230
Accuracy Class for Wh	1.0		0.5S	1.0		0.5S
Accuracy Class for VARh	1.0					
Accuracy for VAh	+/- 0.5%					
Amps, per-phase, average and calculated neutral current	■					
Voltage, V L-N, V L-L, per-phase and average	■					
Power Factor	True PF	True PF Displacement PF [+3]		True PF	True PF Displacement PF	
Frequency, any available phase	■					
Power: W, VA, VAR: per-phase and total	■					
3-phase unbalance %	Current	Current Voltage[+3]		Current	Current Voltage	
Demand parameters (Present, Last, Predicted and Peak for W, VA, VAR, Amps) Date and Time stamp for peak demand	■ (no timestamp)	■		■ (no timestamp)	■	
Energy: Wh, VAh, VARh (4 quadrant) Delivered (Import or Forward), Received (Export or Reverse)	Delivered, Received	Delivered, Received Total[+3], Net[+3], Last cleared[+3]		Delivered, Received, Total, Net	Delivered, Received Total, Net, Last cleared[+3]	
Active load timer, meter operating timer, run hours and power outage counter		Through com			■	
THD: Voltage L-N or L-L, Amps per phase	■					
Individual harmonics for Voltage, Current, per-phase		Up to 15th [+3]	Up to 31st [+3]		Up to 15th	Up to 31st
Min/ Max with real time clock For avg or total of V L-L, V L-N, Amps, PF, Hz, W, VA, VAR parameters with date and time stamp of occurrence		Through com			■	
Communication	Pulse Output	RS-485		Pulse Output	RS-485	
Expandable Analogue IO modules (2 inputs & 2 outputs)[+5]			■			■
Expandable Digital IO modules (2 inputs & 2 outputs)[+5]			■			■
Customizable data logging up to 2 parameters. Option to select Power (W,VA,VAR) Bi-directional energy (+/-Wh, +/- VAh, +/-VARh), Demand (W, VA,VAR) with configurable interval and duration (e.g. 2 parameters for 60 days at 15 minutes interval)			■			■
12 am snap shot of Avg Voltage, Avg Current, Total active power & Energy delivered as measured at 12am				■		
Rate counters: 2 configurable counters to display values in customer specified units base on energy measured (e.g., $kgCO_2$ emission or energy cost)				■		

[+3] Through communication only

[+5] Any one IO module can be used at a time with PM2130 or PM2230 meter. The control power range with IO module shall be 90 t0 300V AC L-N or DC.

PM2000 Series

Type	Description	Reference	Price per unit
PM2000	PM2110, LED, VAF, P & E, THD, POP, Class1.0	METSEPM2110	
	PM2120, LED, VAF, P & E, THD, RS485, Min/Max, RTC, 15th Har, Class 1.0	METSEPM2120	
	PM2130, LED, VAF, P & E, THD, RS485, Min/Max, RTC, 31st Har, Data Log, Class 0.5s	METSEPM2130	
	PM2210, LCD, VAF, P & E, THD, POP, Class1.0	METSEPM2210	
	PM2220, LCD, VAF, P & E, THD, RS485, Min/Max, RTC, 15th Har, Class 1.0	METSEPM2220	
	PM2230, LCD, VAF, P & E, THD, RS485, Min/Max, RTC, 31st Har, Data Log, Class 0.5s	METSEPM2230	
	I/O Module, 2 Digital Inputs & Outputs	METSEPM2KDGTLIO22	
	I/O Module, 2 Analog Inputs & Outputs	METSEPM2KANLGIO22	
	I/O Module, 1 Analog Inputs & Outputs	METSEPM2KANLGIO11	

PM5000 Series

Functions and characteristics

PB111777



PowerLogic™ PM5000 Series meter

PB111784



PowerLogic™ PM5563 remote dispaly

PowerLogic™ PM5100, PM5300 and PM5500 series

The PowerLogic™ PM5000 power meter is the ideal fit for cost management applications. It provides the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality of the electrical network.

In a single 96 x 96 mm unit, with a graphical display, (plus optional remote display) all three phases, neutral and ground can be monitored simultaneously.

The bright, anti-glare display features large characters and powerful backlighting

for easy reading even in extreme lighting conditions and viewing angles. Easy to understand menus, text in 8 selectable languages, icons and graphics create a friendly environment to learn about yourelectrical network. Ethernet gateway and enhanced cyber security.

Highly accurate devices with global billing certifications.

Applications

Cost management: Cost saving opportunities become clear once you understand how and when your facility uses electricity. The Powerlogic™ PM5000 series meters are ideal for:

- Sub billing / tenant metering: allows a landlord, property management firm, condominium association, homeowners association, or other multi-tenant property to bill tenants for individual measured utility (electricity) usage. MID approved meters for billing applications across Europe.
- Cost allocation: allocate energy costs between different departments (HVAC, indoor and outdoor lighting, refrigeration, etc), different parts of an industrial process or different cost centres. Cost allocation systems can help you save money by making changes to your operation, better maintaining your equipment, taking advantage of pricing fluctuations, and managing your demand.

Network management: Improving reliability of the electrical network is key for success in any business. Monitoring values such as voltage levels, harmonic distortion and voltage unbalance will help you to ensure proper operation and maintenance of your electrical network and equipment. Powerlogic™ PM5000 series meters are the perfect tool for:

- Basic Power Quality monitoring: power quality phenomena can cause undesirable effects such as heating in transformers, capacitors, motors, generators and misoperation of electronic equipment and protection devices.
- Min/ Max monitoring (with timestamp): understanding when electrical parameters, such as voltage, current and power demand, reach maximum and minimum values will give you the insight to correctly maintain your electrical network and assure equipment will not be damaged.
- Alarming: alarms help you to be aware of any abnormal behavior on the electrical network in the moment it happens.
- WAGES monitoring: take advantage of the input metering on PM5000 meters to integrate measurements from 3rd party devices such as water, air, gas, electricity or steam, meters.

Main characteristics

Easy to install

Mounts using two clips, in standard cut out for DIN 96 x 96mm, no tools required. Compact meter with 72mm (77mm for PM5500) depth connectable up to 690 VL-L without voltage transformers for installations compliant with category III. Optional remote display (PM5563). Ethernet gateway functionality via RS-485 port.

Easy to operate

Intuitive navigation with self-guided, language selectable menus, six lines, four concurrent values. Two LEDs on the meter face help the user confirm normal operation with a green LED· heartbeat/communications indicator, and the amber LED - customizable either for alarms or energy pulse outputs. On board web pages (PM5500) show real-time and logged information, and verify communications.

Easy circuit breaker monitoring and control

The PM5300 provides two relay outputs (high performance Form A type) with capability to command most of the circuit breaker coils directly. For Digital Inputs, monitored switches can be wired directly to the meter without external power supply.
PM5500 series have 4 status inputs (digital) and 2 digital output (solid state) to use for WAGES monitoring, control and alarm annunciation.

Accurate energy measurement for precise cost allocation:

	PM5100	PM5300	PM5500
IEC 62053-22 (Active Energy)	Class 0.5S	Class 0. 5S	Class 0.2S
IEC 62053-23 (Reactive Energy)	Class 2	Class 2	Class 1

PM5000 Series

Functions and characteristics

PB111777



Powerlogic™ PM5500 meter



Powerlogic™ PM5300 meter



Powerlogic™ PM5100 meter

MID

Certified according to MID Directive, Annex "B" + Annex "D" for legal metrology relevant to active electrical energy meters (see Annex MI-003 of MID). Can be used for fiscal (legal) metrology.

Direct metering of neutral current

The PM5500 has a fourth CT for measuring neutral current. In demanding IT applications, where loads are non-linear (i.e. switching power supplies on computers/servers), measuring neutral current is essential to avoid overload and resulting outage. In addition, the PM5500 provides a calculated ground current value, not available in meters with 3 CTs.

Power Quality analysis

The PM5000 offers Total Harmonic Distortion (THD/thd), Total Demand Distortion (TDD) measurements and individual harmonics (odd) magnitudes and angles for voltage and current:

	PM5100	PM5300	PM5500
Individual Harmonics	magnitudes up to 15th	magnitudes up to 31st	magnitudes & angles up to 63rd

These types of power quality parameters help to identify the source of harmonics that can harm transformers, capacitors, generators, motors and electronic equipment.

Load management

Peak demands with time stamping are provided. Predicted demand values can be used in combination with alarms for basic load shedding applications.

Alarming with time stamping

	PM5100	PM5300	PM5500
Set point driven alarms	29	29	29
Unary	4	4	4
Digital		2	4
Boolean / Logic	-	-	10
Custom defined	-	-	5

Alarms can be visualized as Active (the ones that have picked up and did not drop out yet) or Historical (the ones that happened in the past). Alarms can be programmed and combined to trigger digital outputs and mechanical relays (PM5300).
The PM5000 series keeps an alarm log with the active and historical alarms with date and time stamping. SMTP protocol for receiving alarm conditions via email and text. SNTP protocol for date/time network synchronization.

Load timer

A load timer can be set to count load running hours based on a minimum current withdraw, adjustable to monitor and advise maintenance requirements on the load.

High Performance and accuracy

IEC 61557-12 Performance measuring and monitoring devices (PMD)
Defines the performance expectation based on classes. It defines the allowable error in the class for real and reactive power and energy, frequency, current, voltage, power factor, voltage unbalance, voltage and current harmonics (odds), voltage THD, current THD, as well as ratings for temperature, relative humidity, altitude, start-up current and safety. It makes compliant meters readings comparable - they will measure the same values when connected to the same load.

Meets IEC 61557-12 PMD/[SDISS]/K70/0.5 for PM5100 and PM5300

Meets IEC 61557-12 PMD/[SDISS]/K70/0.2 for PM5500

Legal billing compliance

MID compliance is compulsory for billing applications across Europe.
In addition to billing applications, for facility managers responsible for energy cost MID means same level of quality as a billing meter.

MID ready compliance, EN50470-1/3- Class C

PM5000 Series

Functions and characteristics

General	PM5100	PM5300	PM5500
Use on LV and MV systems		■	
Basic metering with THD and min/max readings		■	
Instantaneous rms values			
Current per phase, neutral and ground (PM5500)		■	
Voltage Total, per phase L-L and L-N		■	
Frequency		■	
Real, reactive, and apparent power Total and per phase		Signed, Four Quadrant	
True Power Factor Total and per phase		Signed, Four Quadrant	
Displacement PF Total and per phase		Signed, Four Quadrant	
% Unbalanced I, VL-N, VL-L		■	
Direct monitoring of neutral current			■
Energy values*			
Accumulated Active, Reactive and Apparent Energy		Received/Delivered; Net and absolute; Time Counters	
Demand values*			
Current average		Present, Last, Predicted, Peak, and Peak Date Time	
Active power		Present, Last, Predicted, Peak, and Peak Date Time	
Reactive power		Present, Last, Predicted, Peak, and Peak Date Time	
Apparent power		Present, Last, Predicted, Peak, and Peak Date Time	
Peak demand with time stamping D/T for current and powers		■	
Demand calculation Sliding, fixed and rolling block, thermal methods		■	
Synchronization of the measurement window to input, communication command or internal clock		■	
Settable Demand intervals		■	
Demand calculation for Pulse input (WAGES)			■
Other measurements*			
I/O timer		■	
Operating timer		■	
Load timer		■	
Alarm counters and alarm logs		■	
Power quality measurements			
THD, thd (Total Harmonic Distortion) I, VLN, VLL per phase		I,VLN, VLL	
TDD (Total Demand Distortion)		■	
Individual harmonics (odds)	15th	31st	63rd
Neutral Current metering with ground current calculation			■
Data recording			
Min/max of instantaneous values, plus phase identification*		■	
Alarms with 1s timestamping*		■	
Data logging		2 selectable parameters from kWh, kVAh, kVARh with configurable interval and duration (e.g. 2 parameters for 60 days at 15 minutes interval)	Up to 14 selectable parameters with configurable interval and duration (e.g. 6 parameters for 90 days at 15 minutes interval)
Memory capacity		256 kB	1.1 MB
Min/max log	■	■	■
Maintenance, alarm and event logs		■	■
Customizable data logs			■
Inputs / Outputs / Mechanical Relays			
Digital inputs		2	4
Digital outputs	1 (kWh only)	2 (configurable)	
Form A Relay outputs		2	
Timestamp resolution in seconds		1	
Whetting voltage		■	

■ **Stored in non-volatile memory*

PM5000 Series

Functions and characteristics

Electrical characteristics			PM5100	PM5300	PM5500
Type of measurement: True rms on three-phase (3P, 3P + N), zero blind			64 samples per cycle		128 samples per cycle
Measurement accuracy	Active Energy		0.5%		0.2%
	Reactive Energy		2%		1%
	Active Power		0.5%		0.2%
	Apparent Power		0.5%		
	Current, Phase		0.5%		0.15%
	Voltage, L-N		0.5%		0.1%
	Frequency		0.05%		
Measurement accuracy compliance	Measurement accuracy		IEC 61557-12 PMD/[SD|SS]/K70/0.5		IEC 61557-12 PMD/[SD|SS]/K70/0.2
	Active energy accuracy		IEC 62053-22 Class 0.2 S ANSI C12.20 Class 0.5		IEC 62053-22 Class 0.2 S ANSI C12.20 Class 0.2
	Reactive energy accuracy		IEC 62053-23 Class 2		
Input-voltage (up to 1.0 MV AC max, with voltage transformer)	Nominal Measured Voltage range		20 V L-N / 35 V L-L to 400 V L-N /690 V L-L absolute range 35 V L-L to 760 V L-L		20 V L-N / 20 V L-L to 400 V L-N /690 V L-L absolute range 20 V L-L to 828 V L-L
	Impedance		5 M Ω		
	F nom		50 or 60 Hz ±2%		50 or 60 Hz ±10%
Input-current	I nom		1 A or 5 A		
	Measured Amps with over range and Crest Factor		Starting current: 5mA Operating range: 50mA to 8.5A		Starting current: 5m A Operating range: 50 mA to 10 A
	Withstand		Continuous 20A, 10s/hr 50A, 1s/hr 500A		
	Impedance		< 0.3 mΩ		
	F nom		50 or 60 Hz ±2%		50 or 60 Hz ±10%
	Burden		<0.026VA at 8.5A		< 0.024 VA at 10 A
AC control power	Operating range		100-415 VAC +/- 10% CAT III 300V class per IEC 61010		100-480 V AC ±10% CAT III 600V class per IEC 61010
	Burden		<5 W,11 VA at 415V L-L		<5W/16.0 VA at 480 V AC
	Frequency		45 to 65 Hz		
	Ride-through time		80 mS typical at 120V AC and maximum burden. 100 mS typical at 230 V AC and maximum burden 100 mS typical at 415 V AC and maximum burden		35 ms typical at 120 V L-N and maximum burden 129 ms typical at 230 V L-N and maximum burden
DC control power	Operating range		125-250 V DC ±20%		
	Burden		4W max at 125V DC		typical 3.1W at 125 V DC, max. 5W
	Ride-through time		50 mS typical at 125 V DC and maximum burden		
Outputs	Relay	Max output frequency		0.5 Hz maximum (1 second ON / 1 second OFF - minimum times)	
		Switching current		250 V AC at 8.0 Amps, 25 k cycles, resistive 30 V DC at 2.0 Amps, 75 k cycles, resistive 30 V DC at 5.0 Amps, 12.5 k cycles, resistive	
		Isolation		2.5 kV rms	
	Digital outputs		1	2	2
		Max load voltage	40 V DC		30 V AC / 60 V DC
		Max load current	20 mA		125 mA
		On Resistance	50 Ω max		8 Ω
		Meter constant	from 1 to 9,999,999 pulses per kWh k_h (Configurable for delivered or received or delivered+received energy for kWh or kVARh or kVAh)		
		Pulse width for Digital Output	50% duty cycle		
		Pulse frequency for Digital Output	25 Hz max.		
		Leakage current	0.03 micro Amps		1 micro Amps
		Isolation	5 kV rms		2.5 kV rms
	Optical outputs				
		Pulse width (LED)	200 micro seconds		
		Pulse frequency	50 Hz. max.		2.5 kHz. max
		Meter constant	from 1 to 9,999,999 pulses per kWh k_h (Configurable for delivered or received or delivered+received energy for kWh or kVARh or kVAh)		

Electrical characteristics (cont'd)		PM5100	PM5300	PM5500
Status Inputs	ON Voltage		18.5 to 36 V DC	30 V AC / 60 V DC max
	OFF Voltage		0 to 4 V DC	
	Input Resistance		110 k Ω	100 k Ω
	Maximum Frequency		2 Hz (T ON min = T OFF min = 250 ms)	25 Hz (T ON min = T OFF min = 20 ms)
	Response Time		20 ms	10 ms
	Opto Isolation		5 kV rms	2.5 kV rms
	Whetting output		24 V DC/ 8mA max	
	Input Burden		2mA @24V DC	2 mA @ 24 V AC/DC
Mechanical characteristics				
Product weight		380 g	430 g	450 g
IP degree of protection (IEC 60529)		IP52 front display, IP20 meter body		
Dimensions W x H x D [protrusion from cabinet] *		96 x 96 x 72mm (77mm for PM5500) (depth of meter from housing mounting flange) [13mm]		
Mounting position *		Vertical		
Panel thickness		6 mm maximum		
Environmental characteristics				
Operating temperature	Meter	-25 °C to 70 °C		
	Display (Display functions to -25º with reduced performance)	-25 °C to +70 °C		
Storage temp.		-40 °C to +85 °C		
Humidity range		5 to 95 % RH at 37 °C (non-condensing)		
Polution degree		2		
Altitude		2000 m CAT III / 3000 m CAT II		3000 m max. CAT III
Electromagnetic compatibility**				
Harmonic current emissions		IEC 61000-3-2		
Flicker emissions		IEC 61000-3-3		
Electrostatic discharge		IEC 61000-4-2		
Immunity to radiated fields		IEC 61000-4-3		
Immunity to fast transients		IEC 61000-4-4		
Immunity to surge		IEC 61000-4-5		
Conducted immunity 150kHz to 80MHz		IEC 61000-4-6		
Immunity to magnetic fields		IEC 61000-4-8		
Immunity to voltage dips		IEC 61000-4-11		
Radiated emissions		FCC part 15, EN 55022 Class B		
Conducted emissions		FCC part 15, EN 55022 Class B		

- *** PM5563 is DIN mounted**
- **** Tests are conducted as per IEC 61557-12 (IEC 61326-1), 62052-11 and EN50470**

PM5000 Series

Type	Description	Reference	Price per unit
PM5000	PM5100 Power Meter, Pulse Out	METSEPM5100	
	PM5110 Power Meter, Pulse + Serial Out	METSEPM5110	
	PM5111 Power Meter, Pulse + Serial Out, MID	METSEPM5111	
	PM5310 Power Meter, Serial + 2DI-2DO Out	METSEPM5310	
	PPM5320 Power Meter, Eth + 2DI-2DO Out	METSEPM5320	
	PM5330 Power Meter, Serial + 2DI-2DO-2Relay Out	METSEPM5330	
	PM5331 Power Meter, Serial + 2DI-2DO-2Relay Out, MID	METSEPM5331	
	PM5340 Power Meter, Eth + 2DI-2DO-2Relay Out	METSEPM5340	
	PM5341 Power Meter, Eth + 2DI-2DO-2Relay Out, MID	METSEPM5341	
	PM5560 Power Meter, Eth-Serial + 4DI-2DO Out	METSEPM5560	
	PM5561 Power Meter, Eth-Serial + 4DI-2DO Out	METSEPM5561	
	PM5563 Power Meter, Eth-Serial + 4DI-2DO Out, No Display	METSEPM5563	
	PM5563 Power Meter, Eth-Serial + 4DI-2DO Out, Remote Display	METSEPM5563RD	
	Remote Display for PM5563 Meter	METSEPM5RD	
	Remote Display Cable for PM5563 Meter	METSEPM5CAB10	

PM5000 Series

Functions and characteristics

Safety	PM5100	PM5300	PM5500
Europe	CE, as per IEC 61010-1 Ed. 3, IEC 62052-11 & IEC61557-12		
U.S. and Canada	cULus as per UL61010-1 (3rd Edition)		
Measurement category (Voltage and Current inputs)	CAT III up to 400 V L-N / 690 V L-L		
Dielectric	As per IEC/UL 61010-1 Ed. 3		
Protective Class	II, Double insulated for user accessible parts		
Communication			
RS 485 port Modbus RTU, Modbus ASCII (7 or 8 bit), JBUS	2-Wire, 9600,19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity Odd or Even, 2 stop bits if None; (Optional in PM51x and PM53x)		
Ethernet port: 10/100 Mbps; Modbus TCP/IP		1 Optional	2 (for daisy chain only, one IP address)
Firmware and language file update	Meter firmware update via the communication ports		
Isolation	2.5 kVrms, double insulated		
Human machine interface			
Display type	Monochrome Graphics LCD		
Resolution	128 x 128		
Backlight	White LED		
Viewable area (W x H)	67 x 62.5 mm		
Keypad	4-button		
Indicator Heartbeat / Comm activity	Green LED		
Energy pulse output / Active alarm indication (configurable)	Optical, amber LED		
Wavelength	590 to 635 nm		
Maximum pulse rate	2.5 kHz		

	PM5100		PM5300				PM5500	
Features and Options	**PM5100**	**PM5110**	**PM5310**	**PM5320**	**PM5330**	**PM5340**	**PM5560**	**PM5563**
Installation								
Fast panel mount with integrated display	■	■	■	■	■	■	■	–
Remote display (optional)	–	–	–	–	–	–	–	■
Fast installation, DIN rail mountable	–	–	–	–	–	–	–	■
Accuracy	**Cl 0.5S**	**Cl 0.5S**	**Cl 0.5S**	**Cl 0.5S**	**Cl 0.5S**	**Cl 0.5S**	**Cl 0.2S**	**Cl 0.2S**
Display								
Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values	■	■	■	■	■	■	■	–
Power and energy metering								
3-phase voltage, current, power, demand, energy, frequency, power factor	■	■	■	■	■	■	■	■
Multi-tariff	–	–	4	4	4	4	8	8
Power quality analysis								
THD, thd, TDD	■	■	■	■	■	■	■	■
Harmonics, individual (odd) up to	15th	15th	31st	31st	31st	31st	63rd	63rd
I/Os and relays								
I/Os	1DO	1DO	2DI/2DO	2DI/2DO	2DI/2DO	2DI/2DO	4DI/2DO	4DI/2DO
Relays	0	0	0	0	2	2	0	0
Alarms and control								
Alarms	33	33	35	35	35	35	52	52
Set point response time, seconds	1	1	1	1	1	1	1	1
Single and multicondition alarms	–	–	■	■	■	■	■	■
Boolean alarm logic	–	–	–	–	–	–	■	■
Communications								
Serial ports with modbus protocol	–	1	1	–	1	–	1	1
Ethernet port with Modbus TCP protocol	–	–	–	1	–	1	2**	2**
Ethernet-to-serial gateway	–	–	–	–	–	–	■	■
Onboard web server with web pages	–	–	–	–	–	–	■	■
MID ready compliance, EN50470-1/3, Annex B and Annex D Class C		**PM5111**			**PM5331**	**PM5341**	**PM5561**	

** 2 Ethernet ports for daisy chain, one IP address.

Link 150

Ethernet gateway

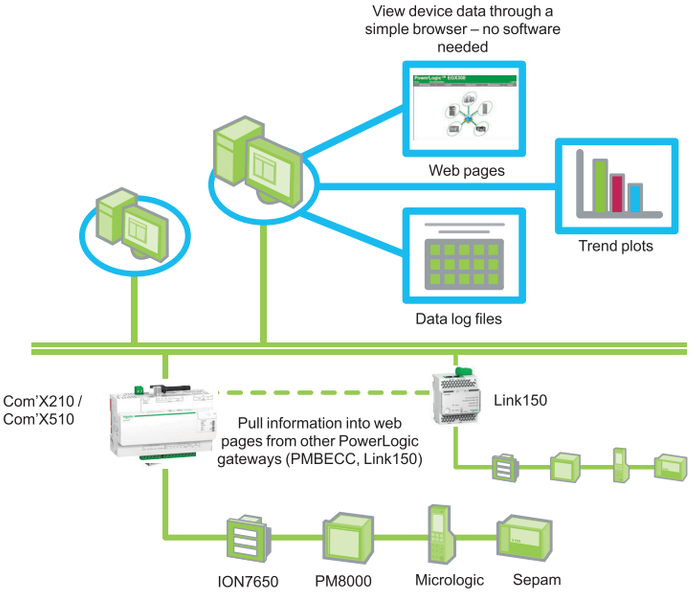


The Link150

The Link150 gateway provides fast, reliable Ethernet connectivity in the most demanding applications, from a single building to a multi-site enterprise.
This gateway supports meters, monitors, protective relays, trip units, motor controls and other devices that need to communicate data quickly and efficiently.
It is your simple, cost-effective serial line to full Ethernet connectivity.

Applications

- Energy management
- Power distribution
- Building automation
- Factory automation



Security

- Secure user interface including user's name and password for login
- Advanced security features to allow users to specify which Modbus TCP/IP master devices may access attached serial slave devices
  - Modbus TCP/IP filtering feature
  - Allows user to specify the level of access for each master device as Read-only or Full access
- Web pages provide easy configuration and setup

Advantages

- Easy to install and setup
- Easy to maintain
- Compatible with Schneider Electric software offerings (StruxureWare Power Monitoring Expert, StruxureWare PowerSCADA Expert, etc.)
- Reliable Modbus to Ethernet protocol conversion

Contact your Schneider Electric representative for complete ordering information.

Power Meter Communications

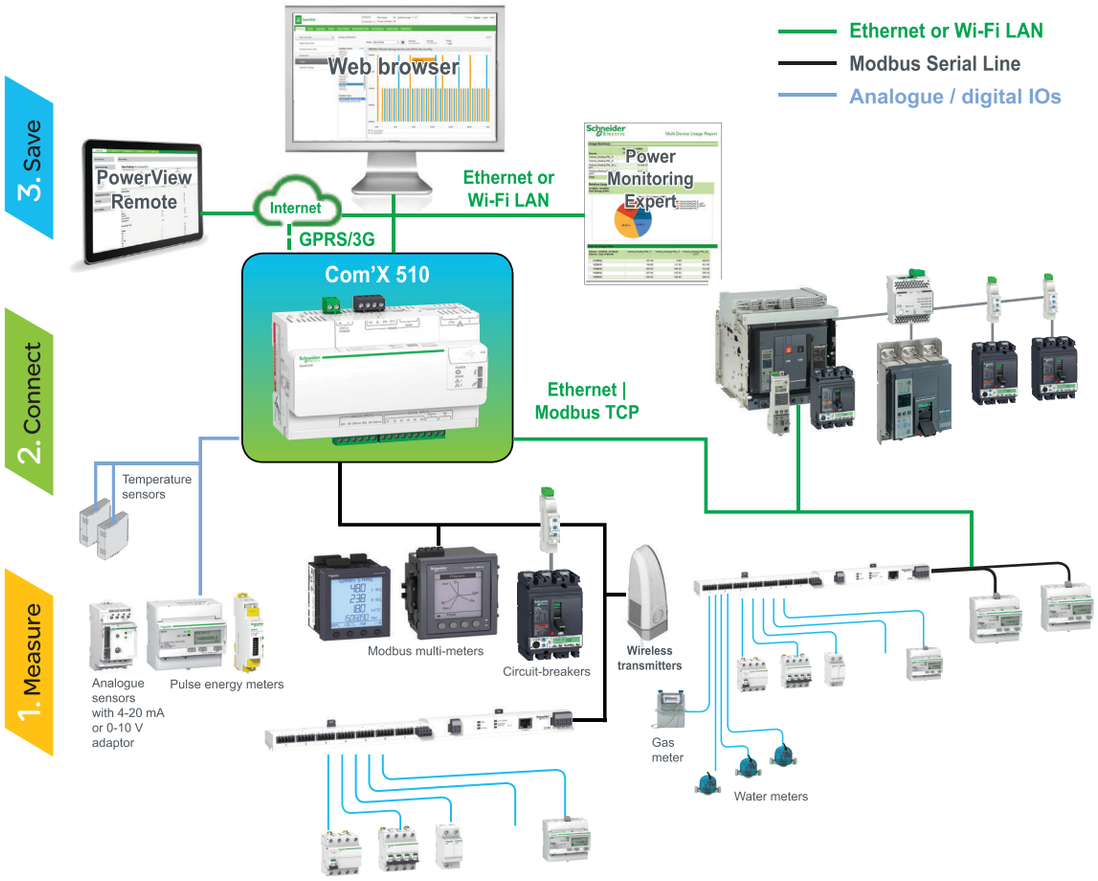
Type	Description	Reference	Price per unit
Link 150	Ethernet Gateway	EGX150	

Com'X 510

Energy data loggers

■ Main functions

PB114856



Data collector

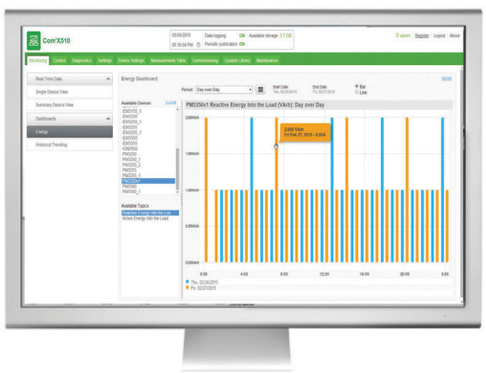
Collects and stores energy data from up to 64 field devices, connected to either:

- Ethernet TCP/IP field network.
- Modbus Serial line network (up to 32 devices).
- Embedded digital and analogue inputs.

"Field devices" consist of :

- PowerLogic meters for power and energy monitoring.
- Masterpact, Powerpact, or Compact circuit-breakers for protection and monitoring.
- Acti 9 protection devices, meters, remote controlled switches, etc.
- Water, Air, Gas, Electricity, and Steam consumption meters, from specialized manufacturers, delivering pulses as per standard (see table at end of this document).
- Environmental sensors such as temperatures, humidity, and CO2 levels in a building, providing analogue information.

PB114852



Energy dashboard comparing accumulated over time energy values (partial screen)

Data logging and storage capabilities include:

- Data logging period: configurable from every minute to once a week.
- Data storage duration: up to 2 years, depending on quanitity of collected data.
- Able to set time and send reset instructions to field devices.

Embedded energy management software

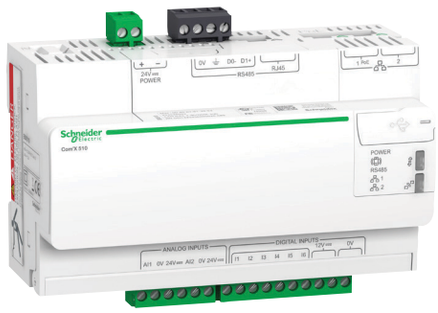
The Com'X provides the end-user with immediate visibility into energy consumption throughout the site. As soon as the Com'X is connected to the Local Area Network (LAN), several web pages are accessible via any standard web browser, (without plug-in or additional components).

These web pages display real-time data as it is collected, in easy to understand tabular and summary formats. In addition, users can get simple analysis of historical data in bar graph or trending formats.

Com'X 510

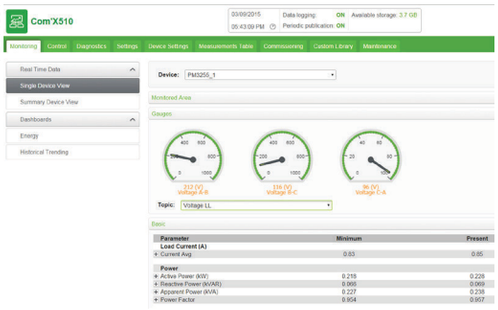
Energy data loggers

PB114327



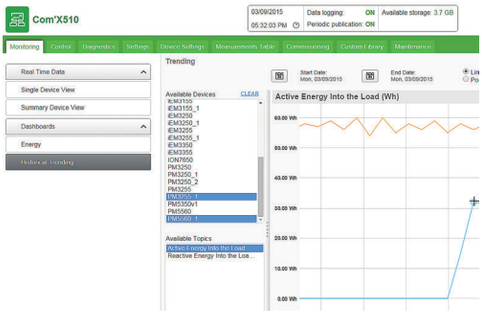
Energy Server Com'X 510 data logger

PB114854



Raw data and measurements from one field device (partial screen)

PB114853



Historical trending comparing multiple devices or multiple topics (partial screen)

Additional functions

Data publisher

Batches of collected data can also be periodically transmitted to an Internet server, as:

- XML files, for processing by StruxureWare™ web services, such as Facility Insights.
- CSV files for viewing in Excel or transformed or uploading to programs such as StruxureWare™ Power Monitoring Expert or any compatible software.

Data publishing function supports 4 transfer protocols over Ethernet or Wi-Fi:

- HTTP.
- HTTPS.
- FTP.
- SMTP.

Gateway

- If selected by the user, the Com'X510 can make data from connected devices available in real time:
- In Modbus TCP/IP format over Ethernet or Wi-Fi.
- For requests by energy management software.
- Gateway to Zigbee device data by external Modbus TCP/IP clients.

Modbus packets can be sent from managing software to field devices through Modbus serial line or Modbus TCP/IP over Ethernet.

*** Available in 2016 as full substitute for EGX300**

- Real-time Trending.
- Custom Web Page Support.





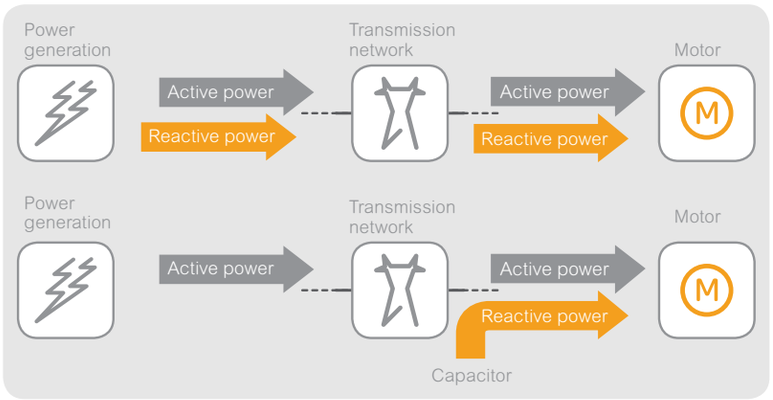
Power Quality

Power factor correction boosts your efficiency

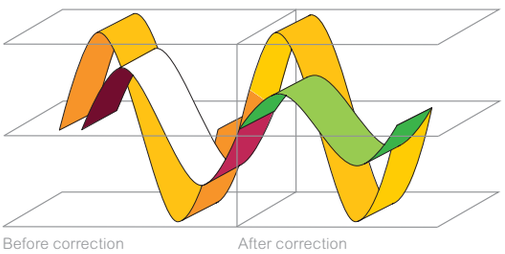
Power systems sometimes need help

In AC distribution systems, the maximum active power is transmitted to a load when voltage and current are in phase and undistorted. However, alternating current contains multiple components that fluctuate depending upon the load.

> Power Factor (PF) describes the ratio between kW and kvarand is the standard **measure of electrical system efficiency.** Utilities supply customers with watts but the supply system must be rated for volts and amperes. Power factor below 1.0 or unity requires a utility to generate more than the minimum volt-amperes necessary to provide real power. This increase generation and transmission costs, which are billed to customers with poor power factor.

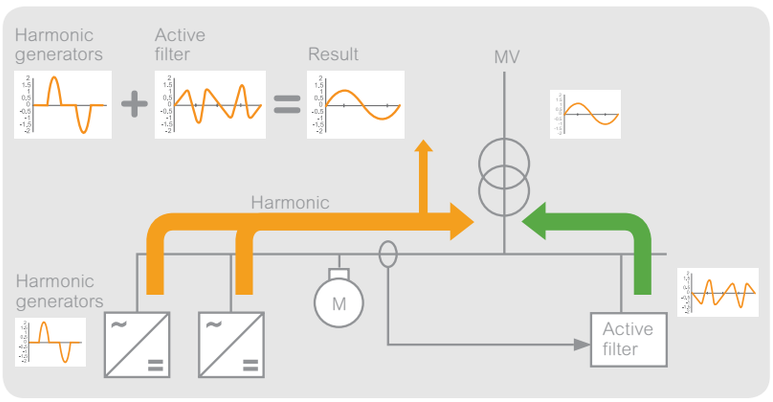


> Active power (kW) does real work in loads such as motors, lights, heaters, computers, and more. It is converted into the mechanical force, heat, or light you need to run your business.



> Reactive power (kvar) is the product of inductive or capacitive loads such as AC motors, transformers, etc. and it produces no productive work.

> Harmonics: additional factors include the effect of non-linear loads such as those created by modern electronic devices. They can create harmonic distortion in the power system that causes voltage fluctuation and power quality problems, resulting in increased operating costs. Active filters can solve the problem.



Low Voltage Capacitors

Overview

VarPlus Box



VarPlus Can

Group of 3 Caps.jpg



	VarPlus Box	VarPlus Box Energy
Construction	Steel sheet enclosure	
Voltage range	380 V - 830 V	380 V - 525 V
Power range (three-phase)	5 - 60 kvar	10 - 60 kvar
Peak inrush current	Up to 250 x I_N	Up to 350 x I_N
Overvoltage	1.1 x U_N 8 h every 24 h	
Overcurrent	1.8 x I_N	2.5 x I_N
Mean life expectancy	Up to 130,000 h	Up to 160,000 h
Safety	Self-healing + 3 phase pressure-sensitive disconnector (PSD) independent of mechanical assembly + inbuilt discharge device (50 V/1 min) + double enclosure protection (Aluminum can inside steel box)	
Dielectric	Metallized Polypropylene film with Zn/Al alloy with special profile metallization and wave cut	Double metallized paper + Polypropylene film
Impregnation	Non-PCB, sticky (dry) Biodegradable resin	Non-PCB, oil
Ambient temperature	min. -25 °C max 55 °C	min. -25 °C max 70 °C
Protection	IP20, Indoor	
Mounting	Upright	
Terminals	Bushing terminals designed for large cable termination	

	VarPlus Can
Construction	Extruded aluminium can
Voltage range	230 V - 830 V
Power range (three-phase)	1 - 50 kvar
Peak inrush current	Up to 250 x I_N
Overvoltage	1.1 x U_N 8 h every 24 h
Overcurrent	1.8 x I_N
Mean life expectancy	Up to 130,000 h
Safety	Self-healing + 3 phase pressure-sensitive disconnector (PSD) independent of mechanical assembly+ non accessable inbuilt discharge device (50 V/1 min)
Dielectric	Metallized Polypropylene film with Zn/Al alloy with special profile metallization and wave cut
Impregnation	Non-PCB, Bio-degradable sticky resin(PU)
Ambient temperature	min. -25 °C max 55 °C
Protection	IP20(for fast-on and clamptite), indoor
Mounting	Upright, horizontal
Terminals	■ Double fast-on + cable (≤ 10 kvar) ■ CLAMPTITE - Three-phase terminal with electric shock protection (finger-proof) ■ Stud type terminal (> 30 kvar)

Low Voltage Capacitors

VarPlus Can

VarPlusCan02_Back.eps



Technical specifications

General characteristics		
Standards		IEC 60831-1/2
Voltage range		230 to 830 V
Frequency		50 / 60 Hz
Power range		1 to 50 kvar
Losses (dielectric)		< 0.2W / kvar
Losses (total)		< 0.5W / kvar
Capacitance tolerance		-5%, +10%
Voltage test	Between terminals	2.15 x U_N (AC), 10 s
	Between terminal & container	≤ 525 V: 3 kV (AC), 10 s or 3.66 kV (AC), 2 s
		> 525 V: 3.66 kV (AC), 10 s or 4.4 kV (AC), 2 s
	Impulse voltage	≤ 690 V: 8 kV
		> 690 V: 12 kV
Discharge resistor		Fitted, standard discharge time 60s

Working conditions	
Ambient temperature	-25 / 55 °C (Class D)
Humidity	95 %
Altitude	2,000 m above sea level
Overvoltage	1.1 x U_N 8 h in every 24 h
Overcurrent	Up to 1.8x I_N
Peak inrush current	250 x I_N
Switching operations (max.)	Up to 7,000 switching operations per year
Mean Life expectancy	Up to 130,000 hrs
Harmonic content withstand	N_{LL} ≤ 20 %

Installation characteristics	
Mounting position	Indoor, upright & horizontal
Fastening	Threaded M12 stud at the bottom
Earthing	
Terminals	CLAMPTITE - three-way terminal with electric shock protection (finger-proof) and, double fast-on terminal in lower kvar and stud type above 30kvar

Safety features	
Safety	Self-healing + Pressure-sensitive disconnector + Discharge device
Protection	IP20 (for fast-on and clamptite terminal)

Construction	
Casing	Extruded Aluminium Can
Dielectric	Metallized polypropylene film with Zn/Al alloy. Special resistivity & profile, special edge (wave-cut)
Impregnation	Non-PCB, polyurethene sticky resin (Dry)

⚠ WARNING

HAZARD OF ELECTRICAL SHOCK

Wait 5 minutes after isolating supply before handling

Failure to follow these instructions can result in injury or equipment damage

Low Voltage Capacitors

VarPlus Can

A safe, reliable, high-performance and flexible solution for power factor correction in stringent operating conditions to maximise your savings

Group of 3 Caps.jpg



VarPlus Can

Operating conditions

- For networks with insignificant non-linear loads: (N_{LL} < 20 %).
- Significant voltage disturbances.
- Standard operating temperature up to 55 °C.
- Normal switching frequency up to 7000 /year.
- Over current handling(including harmonics) up to 1.8 x I_N.

High performance and flexibility with VarPlus Can

- Power ratings up to 50kvar in single can and compactness across the range to reduce your cubicle space up to 40%.
- Build your type tested Schneider electric solution with VarPlus Can – Prisma, Blokset and Okken.
- In-built user assistance and warnings on the product for a delight user experience.
- Flexibility in Vertical and horizontal mounting.
- 3 Phase disconnection of Pressure sensitive disconnector at the end of life which is independent of mechanical assembly for safety and reliability.
- Use of special conductors in stacked design impregnated in resin to ensure better cooling and enhanced life.
- Metallized polypropylene with wave cut and heavy edge technology to handle over current conditions in harsh environments.
- Specially formulated sticky resin to increase the mechanical stability of capacitor elements for higher rating capacitors to ensure better cooling and extended life.
- Designed for high performance in harsh environment to ensure 30% extended life compared to standard capacitors.

Safety

- Self-healing.
- Pressure-sensitive disconnector on all three phases independent of mechanical assembly.
- Tamper resistant non-assessible in-built discharge resistors.
- Unique Finger-proof New CLAMPTITE terminals to reduce risk of accidental contact and to ensure firm termination (10 to 30 kvar) and maintained tightness.
- Special film resistivity and metallization profile for higher thermal efficiency, lower temperature rise and enhanced life expectancy.

Technology

VarPlus Can capacitors are constructed internally with three single-phase capacitor elements. Each capacitor element is manufactured with metallized polypropylene film as the dielectric, having features such as heavy edge, slope metallization and wave-cut profile to ensure increased current handling capacity and reduced temperature rise.

Sticky resign which give good thermal conductivity and mechanical stability allows the capacitor to carry higher overloads.

Stud type terminals are designed for handling higher currents for capacitors more than 30kvar.

The unique finger-proof CLAMPTITE termination is fully intergrated with discharge resistors, allowing suitable access for tightening and ensuring cable termination without any loose connections.

For lower ratings, double fast-on terminals with wires are provided.

Benefits

- Save panel space due to its compact design and range.
- High Performance & Long life.
- High over current handling.
- Unique disconnection system and in-built discharge device.
- Flexibility in installation - upright and horizontal.

Low Voltage Capacitors

VarPlus Can

Rated Voltage 240/260 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
230 V	240 V	260 V	at 260 V	230 V	240 V	260 V	at 260 V			
1.9	2.1	2.5	5.5	2.3	2.5	3.0	6.6	38.7	HC	BLRCH021A025B24
2.5	2.7	3.2	7.0	3.0	3.3	3.8	8.4	49.7	HC	BLRCH027A033B24
3.9	4.2	4.9	10.9	4.6	5.0	5.9	13.1	77.3	HC	BLRCH042A050B24
5.0	5.4	6.3	14.1	6.0	6.5	7.6	16.9	99.4	MC	BLRCH054A065B24
5.8	6.3	7.4	16.4	6.9	7.5	8.8	19.5	116.0	RC	BLRCH063A075B24
7.6	8.3	9.7	21.6	9.2	10.0	11.7	26.1	152.4	RC	BLRCH083A100B24
10.0	10.9	12.8	28.4	12.0	13.0	15.3	34.1	200.5	TC	BLRCH109A130B24
10.7	11.7	13.7	30.4	12.9	14.0	16.4	36.5	214.8	TC	BLRCH117A140B24
12.0	13.1	15.4	34.1	14.4	15.7	18.4	40.9	240.9	TC	BLRCH131A157B24

Rated Voltage 380/400/415 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
380 V	400 V	415 V	at 400 V	380 V	400 V	415 V	at 400 V			
2.3	2.5	2.7	3.6	2.7	3.0	3.2	4.3	16.6	DC	BLRCH025A030B40
2.7	3.0	3.2	4.3	3.2	3.6	3.9	5.2	19.9	DC	BLRCH030A036B40
4.5	5.0	5.4	7.2	5.4	6.0	6.5	8.7	33.1	HC	BLRCH050A060B40
5.7	6.3	6.8	9.1	6.8	7.5	8.1	10.8	41.8	HC	BLRCH063A075B40
6.8	7.5	8.1	10.8	8.1	9.0	9.7	13.0	49.7	HC	BLRCH075A090B40
7.5	8.3	8.9	12.0	9.0	10.0	10.7	14.4	55.0	LC	BLRCH083A100B40
9.4	10.4	11.2	15.0	11.3	12.5	13.4	18.0	68.9	MC	BLRCH104A125B40
11.3	12.5	13.5	18.0	13.5	15.0	16.1	21.7	82.9	RC	BLRCH125A150B40
13.5	15.0	16.1	21.7	16.2	18.0	19.4	26.0	99.4	RC	BLRCH150A180B40
15.1	16.7	18.0	24.1	18.1	20.0	21.6	28.9	110.7	TC	BLRCH167A200B40
18.1	20.0	21.5	28.9	21.7	24.0	25.8	34.6	132.6	TC	BLRCH200A240B40
18.8	20.8	22.4	30.0	22.5	25.0	26.9	36.0	137.9	TC	BLRCH208A250B40
22.6	25.0	26.9	36.1	27.1	30.0	32.3	43.3	165.7	TC	BLRCH250A300B40
27.1	30.0	32.3	43.3	32.5	36.0	38.8	52.0	198.9	VC	BLRCH300A360B40
30.1	33.3	35.8	48.1	36.1	40.0	43.0	57.7	220.7	VC	BLRCH333A400B40
36.1	40.0	43.1	57.7	43.3	48.0	51.7	69.3	265.2	YC	BLRCH400A480B40
37.6	41.7	44.9	60.2	45.2	50.0	53.9	72.2	276.4	YC	BLRCH417A500B40
45.1	50.0	53.8	72.2	---	---	---	---	331.4	YC	BLRCH500A000B40

Rated Voltage 440 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
400 V	415 V	440 V	at 440 V	400 V	415 V	440 V	at 440 V			
4.1	4.4	5.0	6.6	5.0	5.3	6.0	7.9	27.4	HC	BLRCH050A060B44
6.2	6.7	7.5	9.8	7.4	8.0	9.0	11.8	41.1	HC	BLRCH075A090B44
8.3	8.9	10.0	13.1	9.9	10.7	12.0	15.7	54.8	MC	BLRCH100A120B44
10.3	11.1	12.5	16.4	12.4	13.3	15.0	19.7	68.5	RC	BLRCH125A150B44
11.8	12.7	14.3	18.8	14.2	15.3	17.2	22.5	78.3	RC	BLRCH143A172B44
12.4	13.3	15.0	19.7	14.9	16.0	18.0	23.6	82.2	RC	BLRCH150A180B44
14.0	15.0	16.9	22.2	16.8	18.0	20.3	26.6	92.6	TC	BLRCH169A203B44
15.0	16.2	18.2	23.9	18.0	19.4	21.8	28.7	99.7	TC	BLRCH182A218B44
16.5	17.8	20.0	26.2	19.8	21.4	24.0	31.5	109.6	TC	BLRCH200A240B44
20.7	22.2	25.0	32.8	24.8	26.7	30.0	39.4	137.0	TC	BLRCH250A300B44
23.6	25.4	28.5	37.4	28.3	30.4	34.2	44.9	156.1	VC	BLRCH285A342B44
25.0	27.0	30.3	39.8	---	---	---	---	166.0	VC	BLRCH303A000B44
26.0	28.0	31.5	41.3	31.2	33.6	37.8	49.6	172.6	VC	BLRCH315A378B44
27.7	29.8	33.5	44.0	33.2	35.8	40.1	52.7	183.5	VC	BLRCH335A401B44
33.1	35.6	40.0	52.5	39.7	42.7	48.0	63.0	219.1	XC	BLRCH400A480B44
41.3	44.5	50.0	65.6	49.6	53.4	---	---	273.9	YC	BLRCH500A000B44
47.2	50.8	57.1	74.9	56.6	61.0	---	---	312.8	YC	BLRCH571A000B44

Rated Voltage 480 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
400 V	415 V	480 V	at 480 V	400 V	440 V	480 V	at 480 V			
2.9	3.1	4.2	5.1	3.5	4.2	5.0	6.1	19.3	DC	BLRCH042A050B48
3.5	3.7	5.0	6.0	4.2	5.0	6.0	7.2	23.0	HC	BLRCH050A060B48
5.2	5.6	7.5	9.0	6.3	7.6	9.0	10.8	34.5	HC	BLRCH075A090B48
6.1	6.6	8.8	10.6	7.3	8.9	10.6	12.7	40.5	LC	BLRCH088A106B48
7.2	7.8	10.4	12.5	8.7	10.5	12.5	15.0	47.9	MC	BLRCH104A125B48
7.8	8.4	11.3	13.6	9.4	11.4	13.6	16.3	52.0	MC	BLRCH113A136B48
8.7	9.3	12.5	15.0	10.4	12.6	15.0	18.0	57.5	RC	BLRCH125A150B48
9.4	10.2	13.6	16.4	11.3	13.7	16.3	19.6	62.6	RC	BLRCH136A163B48
10.0	10.8	14.4	17.3	12.0	14.5	17.3	20.8	66.3	RC	BLRCH144A173B48
10.8	11.6	15.5	18.6	12.9	15.6	18.6	22.4	71.4	RC	BLRCH155A186B48
11.8	12.7	17.0	20.4	14.2	17.1	20.4	24.5	78.3	RC	BLRCH170A204B48
12.5	13.5	18.0	21.7	15.0	18.2	21.6	26.0	82.9	TC	BLRCH180A216B48
13.3	14.4	19.2	23.1	16.0	19.4	23.0	27.7	88.4	TC	BLRCH192A230B48
14.4	15.5	20.8	25.0	17.3	21.0	25.0	30.0	95.7	TC	BLRCH208A250B48
15.8	17.0	22.7	27.3	18.9	22.9	27.2	32.8	104.5	TC	BLRCH227A272B48
17.9	19.3	25.8	31.0	21.5	26.0	31.0	37.2	118.8	TC	BLRCH258A310B48
20.0	21.5	28.8	34.6	24.0	29.0	34.6	41.6	132.6	VC	BLRCH288A346B48
21.9	23.5	31.5	37.9	26.3	31.8	37.8	45.5	145.0	VC	BLRCH315A378B48
23.5	25.3	33.9	40.8	28.3	34.2	40.7	48.9	156.1	XC	BLRCH339A407B48

Rated Voltage 525 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
415 V	480 V	525 V	at 525 V	400 V	480 V	525 V	at 525 V			
3.1	4.2	5.0	5.5	3.5	5.0	6.0	6.6	19.2	HC	BLRCH050A060B52
6.2	8.4	10.0	11.0	7.0	10.0	12.0	13.2	38.5	LC	BLRCH100A120B52
6.6	8.9	10.6	11.7	7.4	10.6	12.7	14.0	40.8	MC	BLRCH106A127B52
7.8	10.4	12.5	13.7	8.7	12.5	15.0	16.5	48.1	RC	BLRCH125A150B52
9.4	12.5	15.0	16.5	10.4	15.0	18.0	19.8	57.7	RC	BLRCH150A180B52
10.7	14.4	17.2	18.9	12.0	17.3	20.6	22.7	66.2	RC	BLRCH172A206B52
11.6	15.5	18.5	20.3	12.9	18.6	22.2	24.4	71.2	TC	BLRCH185A222B52
12.5	16.7	20.0	22.0	13.9	20.1	24.0	26.4	77.0	TC	BLRCH200A240B52
15.6	20.9	25.0	27.5	17.4	25.1	30.0	33.0	96.2	TC	BLRCH250A300B52
19.3	25.8	30.9	34.0	21.5	31.0	37.1	40.8	118.9	VC	BLRCH309A371B52
21.5	28.8	34.4	37.8	24.0	34.5	41.3	45.4	132.4	VC	BLRCH344A413B52
23.6	31.5	37.7	41.5	26.3	37.8	45.2	49.8	145.1	VC	BLRCH377A452B52
25.0	33.4	40.0	44.0	27.9	40.1	48.0	52.8	153.9	XC	BLRCH400A480B52

Rated Voltage 575 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
480 V	550 V	575 V	at 575 V	480 V	550 V	575 V	at 575 V			
8.4	11.0	12.0	12.0	9.3	13.2	14.4	14.5	38.5	RC	BLRCH120A144B57
10.5	13.7	15.0	15.1	11.7	16.5	18.0	18.1	48.1	TC	BLRCH150A180B57
20.3	26.7	29.2	29.3	22.7	32.0	35.0	35.1	93.6	VC	BLRCH292A350B57

Voltages up to 690V available. Please consult Schneider-Electric.

Low Voltage Capacitors

VarPlus Can

Rated Voltage 600 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
480 V	550 V	600 V	at 600 V	480 V	550 V	600 V	at 600 V			
5.3	7.0	8.3	8.8	6.4	8.4	10.0	9.6	24.5	RC	BLRCH083A100B60
6.7	8.7	10.4	11.0	8.0	10.5	12.5	12.0	30.6	TC	BLRCH104A125B60
8.0	10.5	12.5	11.7	9.6	12.6	15.0	14.4	36.8	TC	BLRCH125A150B60
13.3	17.5	20.8	14.8	16.0	21.0	25.0	24.0	61.3	VC	BLRCH208A250B60
16.0	21.0	25.0	17.8	19.2	25.2	30.0	28.9	221.1 #	YC	BLRCH250A300B60 #
26.7	35.0	41.7	18.9	32.0	42.0	50.0	48.2	368.9 #	YC	BLRCH417A500B60 #

Rated Voltage 690 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
480 V	600 V	690 V	at 690 V	480 V	600 V	690 V	at 690 V			
5.4	8.4	11.1	9.3	6.4	10.1	13.3	11.1	24.7	RC	BLRCH111A133B69
6.0	9.5	12.5	10.5	7.3	11.3	15.0	12.6	27.8	RC	BLRCH125A150B69
6.7	10.4	13.8	11.5	8.0	12.5	16.5	13.8	30.6	TC	BLRCH138A165B69
7.3	11.3	15.0	12.6	8.7	13.6	18.0	15.1	33.4	TC	BLRCH150A180B69
9.7	15.1	20.0	16.7	11.6	18.1	24.0	20.1	44.6	TC	BLRCH200A240B69
12.1	18.9	25.0	20.9	14.5	22.7	30.0	25.1	55.7	VC	BLRCH250A300B69
13.3	20.9	27.6	23.1	16.0	25.0	33.1	27.7	61.4	VC	BLRCH276A331B69
14.5	22.7	30.0	25.1	17.4	27.2	36.0	30.1	66.8	VC	BLRCH300A360B69
19.4	30.2	40.0	33.5	23.2	36.3	48.0	40.2	267.6 #	YC	BLRCH400A480B69 #
25.2	39.3	52.0	43.5	30.2	47.2	62.4	52.2	347.8 #	YC	BLRCH520A624B69 #

Rated Voltage 830 V

50 Hz				60 Hz				µF (X3)	Case Code	Reference Number
Q_N (kvar)			I_N (A)	Q_N (kvar)			I_N (A)			
600 V	690 V	830 V	at 830 V	600 V	690 V	830 V	at 830 V			
8.9	11.8	17.1	11.9	10.7	14.2	20.5	14.3	79.2 #	VC	BLRCH171A205B83 #

Available in star connection.

Low Voltage Capacitors

VarPlus Can harmonic applications

VarPlus Can capacitors are designed for applications where higher number of non-linear loads are present. Higher current carrying capacity in VarPlus Can allows the operations in stringent conditions.

PE90154.eps





VarPlus Can 04.jpg

Detuned reactor VarPlus Can

Operating conditions

- For networks with a large number of non-linear loads (NLL < 50 %).
- Significant voltage disturbances.
- Significant switching frequency up to 7000/year.

Rated voltage

In a detuned application, the voltage across the capacitors is higher than the network service voltage (US). Then, capacitors must be designed to withstand higher voltages.

Depending on the selected tuning frequency, part of the harmonic currents are absorbed by the detuned capacitor bank. Then, capacitors must be designed to withstand higher currents, combining fundamental and harmonic currents.

The rated voltage of VarPlus Can capacitors is given in the table below, for different values of network service voltage and relative impedance.

Capacitor RatedVoltage	$UN_{(V)}$	Network Service Voltage			U_S(V)	
		50 Hz		60 Hz		
		400	690	400	480	600
Relative Impedance						
(%)		480	830	480	575	690
	7					
	14			480	-	-

In the following pages, the effective power (kvar) given in the tables is the reactive power provided by the combination of capacitors and reactors.

Low Voltage Capacitors

VarPlus Can Detuned Reactor + Contactor + MCCB

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VarPlus Can 02.jpg



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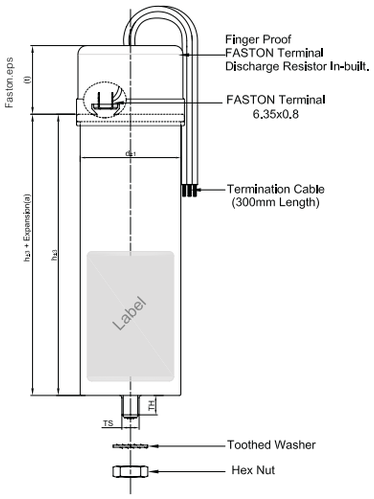
Network 400 V, 50 Hz Capacitor Voltage 480 V 5.7 % / 7 % Detuned Reactor						
Effective Power (kvar)	Q_N at 480 V	Capacitor Ref.	5.7% fr = 210Hz	7% fr = 190Hz	Switching: Contactor Ref.	Protection: Compact NSX
			D R Ref.	D R Ref.		(I_{CU}=50kA) Ref.
6.5	8.8	BLRCH088A106B48 × 1	LVR05065A40T x 1	LVR07065A40T x 1	LC1D12 × 1	LV429847 × 1
12.5	17	BLRCH170A204B48 × 1	LVR05125A40T x 1	LVR07125A40T x 1	LC1D18× 1	LV429846 × 1
25	33.9	BLRCH339A407B48 × 1	LVR05250A40T x 1	LVR07250A40T x 1	LC1D32 × 1	LV429843 × 1
50	67.9	BLRCH339A407B48 × 2	LVR05500A40T x 1	LVR07500A40T x 1	LC1D80 × 1	LV429840 × 1
100	136	BLRCH339A407B48 × 4	LVR05X00A40T x 1	LVR07X00A40T x 1	LC1D150 × 1	LV431831 × 1

Network 400 V, 50 Hz Capacitor Voltage 480 V 14 % Detuned Reactor					
Effective Power (kvar)	Q_N at 480 V	Capacitor Ref.	14% fr = 135Hz	Switching: Contactor Ref.	Protection: Compact NSX
			D R Ref.		(I_{CU}=50kA) Ref.
6.5	8.8	BLRCH088A106B48 × 1	LVR14065A40T x 1	LC1D12 × 1	LV429847 × 1
12.5	15.5	BLRCH155A186B48 × 1	LVR14125A40T x 1	LC1D18× 1	LV429846 × 1
25	31.5	BLRCH315A378B48 × 1	LVR14250A40T x 1	LC1D32 × 1	LV429844 × 1
50	63	BLRCH315A378B48 × 2	LVR14500A40T x 1	LC1D80 × 1	LV429841 × 1
100	126	BLRCH315A378B48 × 4	LVR14X00A40T x 1	LC1D150 × 1	LV430840× 1

Network 400 V, 50 Hz Capacitor Voltage 525 V 5.7 % / 7 % Detuned Reactor						
Effective Power (kvar)	Q_N at 525 V	Capacitor Ref.	5.7% fr = 210Hz	7% fr = 190Hz	Switching: Contactor Ref.	Protection: Compact NSX
			D R Ref.	D R Ref.		(I_{CU}=50kA) Ref.
6.5	10.6	BLRCH106A127B52 × 1	LVR05065A40T x 1	LVR07065A40T x 1	LC1D12 × 1	LV429847 × 1
12.5	20	BLRCH200A240B52 × 1	LVR05125A40T x 1	LVR07125A40T x 1	LC1D18× 1	LV429846 × 1
25	40	BLRCH400A480B52 × 1	LVR05250A40T x 1	LVR07250A40T x 1	LC1D32 × 1	LV429843 × 1
50	80	BLRCH400A480B52 × 2	LVR05500A40T x 1	LVR07500A40T x 1	LC1D80 × 1	LV429840 × 1
100	160	BLRCH400A480B52 × 4	LVR05X00A40T x 1	LVR07X00A40T x 1	LC1D150 × 1	LV431831 × 1

Network 400 V, 50 Hz Capacitor Voltage 525 V 14 % Detuned Reactor					
Effective Power (kvar)	Q_N at 525 V	Capacitor Ref.	14% fr = 135Hz	Switching: Contactor Ref.	Protection: Compact NSX
			D R Ref.		(I_{CU}=50kA) Ref.
6.5	10.6	BLRCH106A127B52 × 1	LVR14065A40T x 1	LC1D12 × 1	LV429847 × 1
12.5	18.5	BLRCH185A222B52 × 1	LVR14125A40T x 1	LC1D18× 1	LV429846 × 1
25	37.7	BLRCH377A452B52 × 1	LVR14250A40T x 1	LC1D32 × 1	LV429844 × 1
50	75	BLRCH377A452B52 × 2	LVR14500A40T x 1	LC1D80 × 1	LV429841 × 1
100	150	BLRCH377A452B52 × 4	LVR14X00A40T x 1	LC1D150 × 1	LV430840 × 1

Network 690 V, 50 Hz Capacitor Voltage 830 V 5.7 % / 7 % Detuned Reactor						
Effective Power (kvar)	Q_N at 830 V	Capacitor Ref.	5.7% fr = 210Hz	7% fr = 190Hz	Switching: Contactor Ref.	Protection: Compact NSX
			D R Ref.	D R Ref.		(I_{CU}=10kA) Ref.
12.5	17.1	BLRCH171A205B83 × 1	LVR05125A69T × 1	LVR07125A69T × 1	LC1D12 × 1	LV429847 × 1
25	34.2	BLRCH171A205B83 × 2	LVR05250A69T × 1	LVR07250A69T × 1	LC1D25 × 1	LV429845 × 1
50	68.4	BLRCH171A205B83 × 4	LVR05500A69T × 1	LVR07500A69T × 1	LC1D50 × 1	LV429842 × 1
100	136.8	BLRCH171A205B83 × 8	LVR05X00A69T × 1	LVR07X00A69T × 1	LC1D80 × 1	LV430841 × 1



Case Code: DC, EC, FC, HC & LC.

Case Code: DC, HC & LC

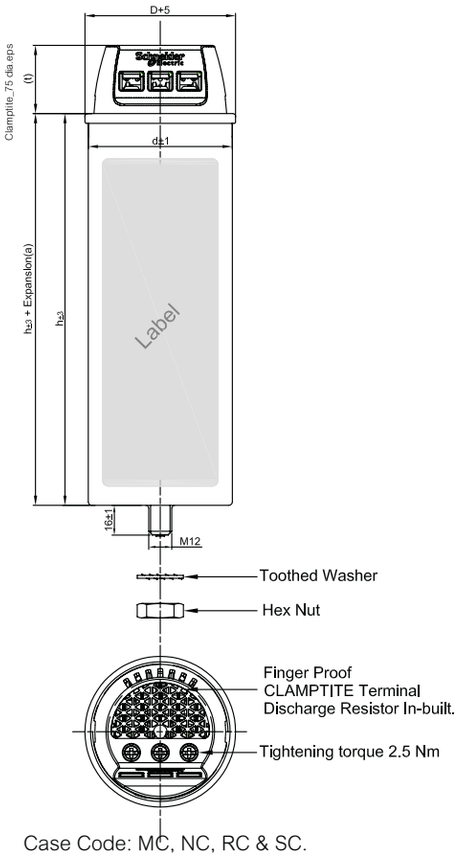
Creepage distance	min.16 mm
Clearance	min.16 mm
Expansion (a)	max.10 mm

Mounting details (for M10/M12 mounting stud)

Torque	M10: 7 N.m M12: 10 N.m
Toothed washer	M10/M12
Hex nut	M10/M12
Terminal assembly Ht. (t)	50 mm

Size (d)	TS	TH
Ø 50	M10	10 mm
Ø 63	M12	13 mm
Ø 70	M12	16 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
DC	50	195	245	0.7
EC	63	90	140	0.5
FC	63	115	165	0.5
HC	63	195	245	0.9
LC	70	195	245	1.1



Case Code: MC, NC, RC & SC.

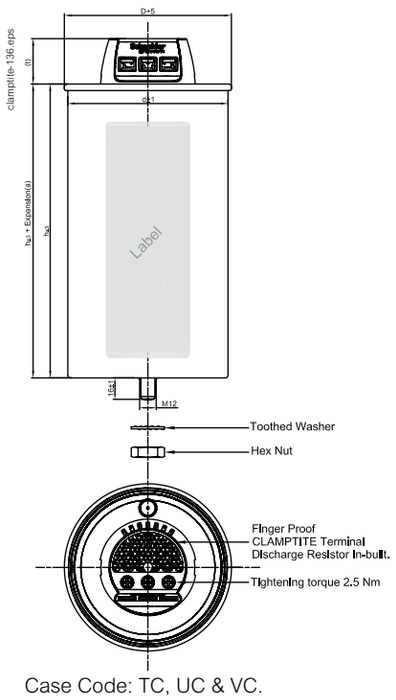
Case Code: MC, NC, RC & SC

Creepage distance	min.13 mm
Clearance	min.13 mm
Expansion (a)	max.12 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M5
Terminal assembly Ht. (t)	30 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
MC	75	203	233	1.2
NC	75	278	308	1.2
RC	90	212	242	1.6
SC	90	278	308	2.3



Case Code: TC, UC & VC.

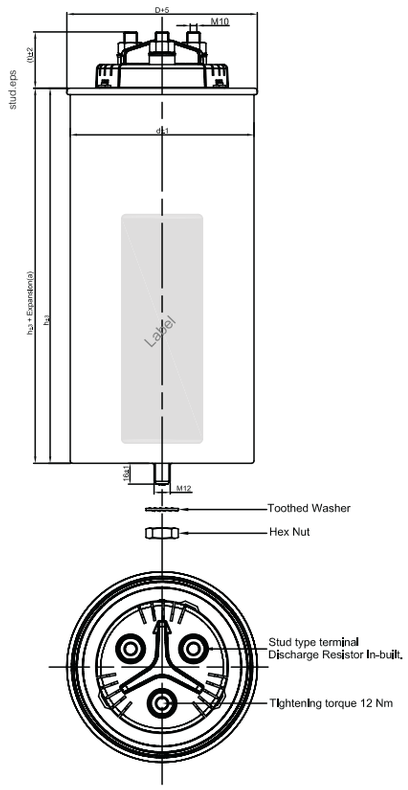
Case Code: TC, UC & VC

Creepage distance	min.13 mm
Clearance	min.13 mm
Expansion (a)	max.12 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M5
Terminal assembly Ht. (t)	30 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
TC	116	212	242	2.5
UC	116	278	308	3.5
VC	136	212	242	3.2



Case Code: XC & YC.

Case Code: XC & YC

Creepage distance	min.13 mm
Clearance	34 mm
Expansion (a)	max.17 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M10
Terminal assembly Ht. (t)	43 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
XC	116	278	321	4.1
YC	136	278	321	5.3

50Hz
Detuned Reactor

The detuned reactors (DR) are designed to protect the capacitors by preventing amplication of the harmonics present on the network.

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Operating conditions
- Use: indoor.
- Storage temperature: -40 °C, +60 °C.
- Relative humidity in operation: 20-80 % .
- Salt spray withstand: 250 hours (for 400 V - 50 Hz range).
- Operating temperature:

□ altitude: ≤ 1000 m: Min = 0 °C, Max = 55 °C, highest average over 1 year = 40 °C, 24 hours = 50 °C.
□ altitude: ≤ 2000 m: Min = 0 °C, Max = 50°C, highest average over 1 year = 35 °C, 24 hours = 45°C.

Installation guidelines
- Forced ventilation required.
- Vertical detuned reactor winding for better heat dissipation.

As the detuned reactor is provided with thermal protection, the normally closed dry contact must be used to disconnect the step in the event of overheating.

Technical specifications

Description	Three-phase, dry, magnetic circuit, impregnated
Degree of protection	IP00
Insulation class	H
Rated voltage	400 to 690 V - 50 Hz
	400 to 600 V - 60 Hz
	Other voltages on request
Inductance tolerance per phase	-5, +5%
Insulation level	1.1 kV
Dielectric test 50/60 Hz between windings and windings/earth	4 kV, 1 min
Thermal protection	Restored on terminal block 250 V AC, 2 A

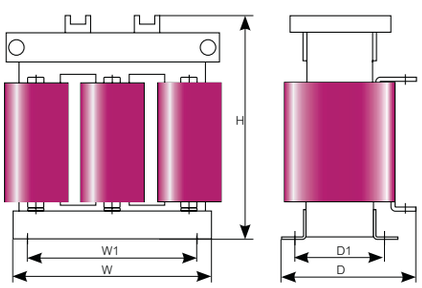
Let's define the service current (I_S) as the current absorbed by the capacitor and detuned reactor assembly, when a purely sinusoidal voltage is applied, equal to the network service voltage (V).
I_S = Q (kvar) / ($\sqrt{3}$ x U_S)

In order to operate safely in real conditions, a detuned reactor must be designed to accept a maximum permanent current (I_{MP}) taking account of harmonic currents and voltage fluctuations.
The following table gives the typical percentage of harmonic currents considered for the different tuning orders.

(%)	Harmonic currents			
Tuning order / Relative Impedance	i_3	i_5	i_7	i_{11}
2.7 / 14%	5	15	5	2
3.8 / 7%	3	40	12	5
4.2 / 5.7%	2	63	17	5

Detuned reactor has to be protectced from over currents with MCCB. A 1.1 factor is applied in order to allow long-term operation at a supply voltage up to (1.1 x US). The maximum perment current (I_{MP}) is given in the following table:

Tuning order	I_{MP} (times (I_S)
2.7 / 14%	1.12
3.8 / 7%	1.2
4.2 / 5.7%	1.3



For dimensions and more details, please consult us.

Detuned Reactors

Network voltage 400 V, 50 Hz

50 Hz

Relative Impedance (%)	kvar	Inductance (mH)	I_{MP} (A)	Max losses at I_{MP}(W)	W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	Weight (kg)	Reference Number
5.70%	6.5	4.727	12	100	240	200	160	125	220	9	LVR05065A40T
(4.2)	12.5	2.445	24	150	240	200	160	125	220	13	LVR05125A40T
	25	1.227	47	200	240	200	160	125	220	18	LVR05250A40T
	50	0.614	95	320	260	200	200	125	270	24	LVR05500A40T
	100	0.307	190	480	350	200	220	125	350	46	LVR05X00A40T
7%	6.5	5.775	11	100	240	200	160	125	220	8	LVR07065A40T
(3.8)	12.5	2.987	22	150	240	200	160	125	220	10	LVR07125A40T
	25	1.499	43	200	240	200	160	125	220	15	LVR07250A40T
	50	0.750	86	320	260	200	200	125	270	22	LVR07500A40T
	100	0.375	172	480	350	200	220	125	350	37	LVR07X00A40T
14%	6.5	11.439	10	100	240	200	160	125	220	10	LVR14065A40T
(2.7)	12.5	6.489	20	150	240	200	160	125	220	15	LVR14125A40T
	25	3.195	40	200	240	200	160	125	220	22	LVR14250A40T
	50	1.598	80	400	260	200	200	125	270	33	LVR14500A40T
	100	0.799	160	600	350	200	220	125	350	55	LVR14X00A40T

Network voltage 690 V, 50 Hz

Relative Impedance (%)	kvar	Inductance (mH)	I_{MP} (A)	Max losses at I_{MP}(W)	W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	Weight (kg)	Reference Number
5.70%	12.5	7.28	13.3	150	240	200	160	125	220	13	LVR05125A69T
(4.2)	25	3.654	27	200	240	200	160	125	220	18	LVR05250A69T
	50	1.827	53	320	260	200	200	125	270	30	LVR05500A69T
	100	0.913	106	600	350	200	220	125	350	42	LVR05X00A69T
7%	12.5	8.893	12	150	240	200	160	125	220	13	LVR07125A69T
(3.8)	25	4.464	24	200	240	200	160	125	220	18	LVR07250A69T
	50	2.232	47	320	260	200	200	125	270	22	LVR07500A69T
	100	1.116	94	480	350	200	220	125	350	40	LVR07X00A69T

Network voltage 230 V, 50 Hz

Relative Impedance (%)	kvar	Inductance (mH)	I_{MP} (A)	Max losses at I_{MP}(W)	W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	Weight (kg)	Reference Number
5.70%	6.5	1.651	20	100	240	200	160	125	220	8	LVR05065A23T
(4.2)	12.5	0.794	42	150	240	200	160	125	220	13	LVR05125A23T
	25	0.397	84	200	240	200	160	125	220	18	LVR05250A23T

VarSet offer

Selection guide

The compensation needs of your installation vary depending on factors such as load variation, Network harmonic pollution level and the characteristics of the installation. Find out the right level of compensation for your network with the help of the chart below.

Your load variation

Variable or unstable load

Choose automatic compensation

Network harmonic pollution level

Low polluted

Gh/Sn	≤ 25%
Thdu	≤ 4%
Thdi	≤ 10%

Choose VarSet for "low polluted network"



400 V - 50 Hz
from 6 to 1150 kVAr

400 V - 60 Hz
from 100 to 600 kVAr

Polluted

Gh/Sn	≤ 50%
Thdu	≤ 7%
Thdi	≤ 20%

Choose VarSet for "polluted network"



400 V - 50 Hz
from 50 to 1150 kVAr

400V - 60 Hz
from 200 to 600 kVAr

Stable load

Choose fixed compensation

Network harmonic pollution level

Low polluted

Gh/Sn	≤ 25%
Thdu	≤ 4%
Thdi	≤ 10%

Choose VarSet for "low polluted network"



400 V - 50 Hz
from 79 to 200 kVAr

Polluted

Gh/Sn	≤ 50%
Thdu	≤ 7%
Thdi	≤ 20%

Choose VarSet for "polluted network"



400 V - 50 Hz
from 50 to 200 kVAr

Intelligent Power Factor controllers

VarPlus Logic series VL6, VL12

VarPlus Logic has all what you need for the simple and efficient operation of your automatic power factor correction equipment to maintain your power factor. It is a simple and intelligent relay which measure, monitor and controls the reactive energy. Easy commissioning, step size detection and monitoring makes it different from others in the market.

DB417842 Présentation eps



VarPlus Logic VL6, VL12

Capacitor bank step monitoring

- Monitoring of all the connected capacitor steps.
- Real time power in “kvar” for the connected steps .
- Remaining step capacity per step as a % of the original power since installation.
- Remaining step power in kvar since installation.
- Number of switching operations of every connected step.

System Measurement and monitoring

- THD(u) and THD(u) Spectrum 3rd to 19th – Measurement, Display and Alarm.
- Measurement of DQ – “kvar” required to achieve target cos phi.
- Present cabinet temperature and maximum recorded temperature.
- System parameters – Voltage, Current, Active, reactive and apparent power.
- Large LCD display to monitor real step status and other parameters.

Easy Commissioning

- Automatic Initialization and automatic step detection to do a auto commissioning.
- Automatic wiring correction - voltage and current input wiring correction.
- 1A or 5A CT secondary compatible.

Flexibility to the panel builder and retrofitting

- No step sequence restriction like in the traditional relays.
- Any step sequences with auto detect. No programming needed.
- Easy to retrofit the faulty capacitor with different power.
- Quick and simple mounting and wiring.
- Connect to the digitized Schneider solutions through RS485 communication in Modbus protocol.
- Seamless connection to the Schneider software and gateways.

Do more with VarPlus Logic

- Programmable alarms with last 5 alarms log.
- Suitable for medium voltage applications.
- Suitable for 4 quadrant operations.
- Dual cos phi control through digital inputs or export power detection.
- Dedicated alarm and fan control relays.
- Advance expert programming Menu to configure the controller the way you need.
- New control algorithm designed to reduce the number of switching operations and quickly attain the targeted power fact

Alarms

- Faulty Step
- Configurable alarm for step derating.
- THDu Limit alarm.
- Temperature alarm
- Self correction by switching off the steps at the event of THDu alarm, temperature alarm and overload limit alarm.
- Under compensation alarm
- Under/Over Voltage Alarm
- Low/High Current Alarm
- Overload limit alarm
- Hunting alarm
- Maximum operational limits - Time and number of switching

Range

Type	Number of step output contacts	Part number
VL6	06	VPL06N
VL12	12	VPL12N

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Medium Voltage Power Quality Solutions

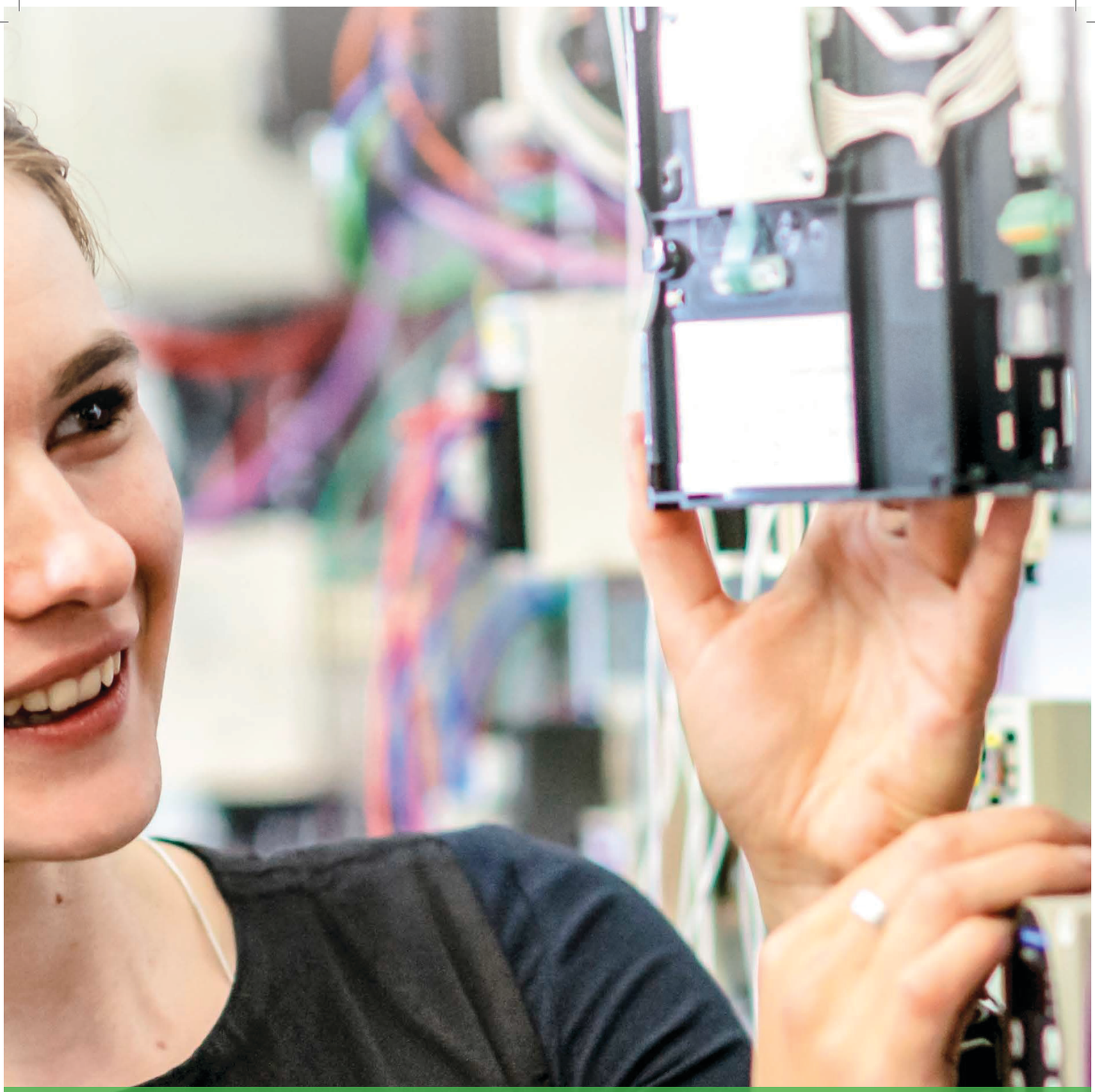
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Motor Control and Protection

EasyPact TVS

EasyPact TVS 3-pole contactors from 6 to 630 A







Size			1					2		3		
Rated operational current AC-3	**A**	6	9	12	18	25	32	38	40	50	65	
Rated operational current AC-1	**A**	20	25		32	36	50		60	70	80	
Rated operational power in AC-3	**220/230 V**	1.1	2.2	3	4	5.5	7.5	9	11	15	18.5	
	380/400 V	2.2	4	5.5	7.5	11	15	18.5	18.5	22	30	
	415/440 V	2.2	4	5.5	9	11	15	18.5	22	25/30	37	
	500 V	3	5.5	7.5	10	15	18.5	18.5	22	30	37	
	660/690 V	3	5.5	7.5	10	15	18.5	18.5	30	33	37	
	kW											
Width	**mm**	45				45.5	56		75			
Coil rated operating voltage		24...440 V AC according to the coil voltage code (see below)										
Auxiliary built in contact		1 NO or 1 NC							1 NO + 1 NC			
References (1)		**LC1E06**	**LC1E09**	**LC1E12**	**LC1E18**	**LC1E25**	**LC1E32**	**LC1E38**	**LC1E40**	**LC1E50**	**LC1E65**	

(1) Partial, see below.

Coil voltage code for 3-pole contactors

		24	48	110	220	230	240	380	415	440
LC1E06-300	50 Hz	B5	E5	F5	M5	-	U5	Q5	N5	R5
	60 Hz	B6	-	F6	M6	-	-	Q6	-	R6
LC1E06-95	50/60Hz	B7	E7	F7	M7	P7	-	Q7	-	-
LC1E400-630	50/60Hz	-	E7	F7	M7	-	U7	Q7	N7	-

Contactor: how to determine the full commercial reference ?

Example:

LC1E	12	10	U	5		**ref. LC1E1210U5**
					5	50 Hz
					Coil voltage code	240 V
					Auxiliary contact configuration (2)	01 1NC 10 1NO
					Rated operation current AC3	12 A
					Contactor	EasyPact TVS

Example 1: you need a 32 A contactor, 1 NC auxiliary contact, 24 V - 50 Hz coil C **LC1E3201B5**

Example 2: you need a 120 A contactor, 1 NC + NO auxiliary contact, 220 V - 50 Hz coil C **LC1E120M5**

(2) Example up to LC1E38 For details, please consult page A-3.

 CPB100420		 CPB100421		 CPB100415		 CPB100416		 CPB100409	
4		5 (3)		6 (3)		7 (3)		8 (3)	9 (3)
80	95	120	160	200	250	300	400	500	630
110	120	150	200	250	300	320	500	700	1000
22	25	37	45	55	75	90	110	147	185
37	45	55	75	90	132	160	200	250	335
45	45	59	80	100	140	160/185	220/250	280/295	375/400
45	55	75	90	110	160	200	257	355	400
45	45	80	100	110	160	220	280	335	450
85		120		168.5		213	213	233	309
1 NO + 1 NC				-		-			
LC1E80	LC1E95	LC1E120	LC1E160	LC1E200	LC1E250	LC1E300	LC1E400	LC1E500	LC1E630

Common characteristics

> Contactors compatible with:


LAEN● auxiliary contact blocks
(see page A-20)


LAETSD time delay auxiliary contact (from 25 A contactor)
(see page A-20)


LAERC●● RC switch suppressor (up to 95 A)
(see page A-19)


LAEM● mechanical interlock
(see page A-19)


LAEP● set of power connections (up to 95 A)
(see page A-19)

Utilisation categories

> Class AC-1: AC loads with cos φ at least equal to 0.95 (resistive load, heating, distribution, etc.).

> Class AC-3: squirrel-cage motors with breaking taking place with the motor running.

(3) Color change for 120-630A contactors would come later, please consult your local Schneider Electric office.

Easy E Range

Contractors for motor control (9-630A in AC3) and Control Relays

Environment / Pole characteristics

Contactor Type LC1	E06	E09	E12	E18	E25	E32	E38	E40	E50	E65	E80	E95	E120	E160	E200	E250	E300	E400	E500	E630
Conforming Standards	IEC/EN 60947-4-1, IEC/EN 60947-5-1																			
Rated Optimized Current AC1	20	25	25	32	36	50	50	60	70	80	110	120	150	200	250	300	320	500	700	1000
Rated Insulation Voltage (Ui) (IEC 60947-4-1 O.V. category III, deg of pollution 3)	690V																			
Rated Impulse withstand voltage (Uimp)	6kV												8kV							
Elect durability AC3 (Ue ≤ 440V) in mills	1.4 mill			1.2 mill			0.9 mill						0.8		0.5	0.7	0.5	0.6		
Control Voltage Limits	0.85.... 1.1 µc																			
Frequency limits of the operating current	50 or 60Hz																			

Application: medium duty motor starting and lighting applications


LC1E06


LC1E32


LC1E120


LC1E200


LC1E630

Motor Power Rating @ 380V/400V, 50/60 HZ in AC3 (KW)	Rated operational current (A) in AC3 up to 380/440V	Auxillary Contacts N/O	Auxillary Contacts N/C	Reference	Price per unit
3 Pole contactor, AC coil					
2.2	6	1	0	LC1E0610●●	
2.2	6	0	1	LC1E0601●●	
4	9	1	0	LC1E0910●●	
4	9	0	1	LC1E0901●●	
5.5	12	1	0	LC1E1210●●	
5.5	12	0	1	LC1E1201●●	
7.5	18	1	0	LC1E1810●●	
7.5	18	0	1	LC1E1801●●	
11	25	1	0	LC1E2510●●	
11	25	0	1	LC1E2501●●	
15	32	1	0	LC1E3210●●	
15	32	0	1	LC1E3201●●	
18.5	38	1	0	LC1E3810●●	
18.5	38	0	1	LC1E3801●●	
18.5	40	1	1	LC1E40●●	
22	50	1	1	LC1E50●●	
30	65	1	1	LC1E65●●	
37	80	1	1	LC1E80●●	
45	95	1	1	LC1E95●●	
55	120	1	1	LC1E120●●	
75	160	1	1	LC1E160●●	
Connection by bars or cables					
90	200	0	0	LC1E200●●	
132	250	0	0	LC1E250●●	
160	300	0	0	LC1E300●●	
200	400	0	0	LC1E400●●	
250	500	0	0	LC1E500●●	
335	630	0	0	LC1E630●●	

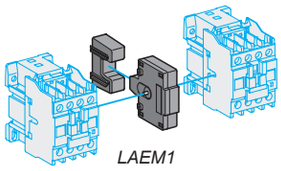
Control Relays AC Control

Contact configuration	Reference
2 NO + 2 NC	CAE22●●
3 NO + 1 NC	CAE31●●
4 NO	CAE40●●

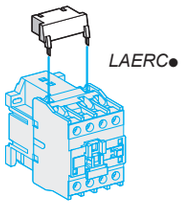
Control voltage code								
	Volts (AC)	24	48	110	220	240	415	440
LC1E06-360A	50 Hz	B5	E5	F5	M5	U5	N5	R5
CAE	50 Hz	B5	E5		M5	U5	N5	
LC1E400-630A	50/60 Hz			F7		U7	N7	R7

Easy E Range

Contractors for motor control (9-630A in AC3, cont.) and Auxiliaries



LAEM1



LAERC●

LC1E●●

Instantaneous Auxillary Contact block for connection by screw clamp terminals, front connection

Contact Composition	For use with contactor	Reference	Price per unit
Mechanical Interlock	LC1E06 - LC1E65	LAEM1	
Mechanical Interlock	LC1E80 - 95	LAEM4	
Mechanical Interlock	E120 - E160	LAEM5	
Mechanical Interlock	E200 - E250	LAEM6	
Mechanical Interlock	E300 - E500	LAEM7	
Mechanical Interlock	E630	LAEM8	
1 NO + 1 NC		LAEN11	
2 NO		LAEN20	
2 NC		LAEN02	
2 NO + 2 NC		LAEN22	



LAEN22

RC Surge Suppressor

3P Contactor Type	Voltage Type (AC)	Reference
LC1E09..E95	24…48	LAERCE
LC1E09..E95	110…240	LAERCU
LC1E06…E95	380…415	LAERCN

Time delay auxillary contact blocks (1 NO + 1 NC)

Type	Range (sec)	
230-440V on Delay	0.1..30 sec	LAETSD



LAETSD

4-pole contactors

Non inductive loads maximum current (Θ≤55°C) utilisation category AC-1 A	number of poles		Basic reference, to be completed by adding the control voltage code	Price per unit
16	4	-	LC1E06004 ●●	
	2	2	LC1E06008 ●●	
20	4	-	LC1E09004 ●●	
	2	2	LC1E09008 ●●	
25	4	-	LC1E12004 ●●	
	2	2	LC1E12008 ●●	
32	4	-	LC1E18004 ●●	
	2	2	LC1E18008 ●●	
40	4	-	LC1E25004 ●●	
	2	2	LC1E25008 ●●	
45	4	-	LC1E32004 ●●	
	2	2	LC1E32008 ●●	
50	4	-	LC1E38004 ●●	
	2	2	LC1E38008 ●●	
60	4	-	LC1E40004 ●●	
	2	2	LC1E40008 ●●	
80	4	-	LC1E65004 ●●	
	2	2	LC1E65008 ●●	
100	4	-	LC1E80004 ●●	
	2	2	LC1E80008 ●●	
125	4	-	LC1E95004 ●●	
	2	2	LC1E95008 ●●	



LC1E06



LC1E65

Control voltage code									
	Volts	24	110	220	230	240	380	400	415
LC1E06-95	50/60 Hz	B7	F7	M7	P7	U7	Q7	V7	N7

Easy E Range

Thermal overload Relays (adjustable from 0.1-630A)



LRE●●

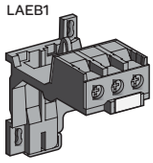


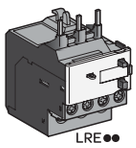
LRE3●●



LRE48●

LAEB1





LRE●●

Environment / Electrical characteristics

Relay type	LRE 01 …..365	LRD 3322 …33696
Conforming Standards	IEC/EN 60947-4-1, IEC/EN 60947-5-1	
Product Certifications	EAC	
Degree of Protection	Protection against direct finger contact IP2X- Conforming to VDE 0106 IP00	
Rated Insulation Voltage (Ui)	690V (IEC 60947-4-1)	1000V (IEC 60947-4-1)
Rated Impulse withstand voltage (Uimp)	6kV	
Rated operational voltage (Ue) up to	690V	
Frequency limits of the operating current	50....60Hz	

Protects A.C. circuits and motors against: overloads , phase failure, excessive long starting times, prolonged stalled rotor.

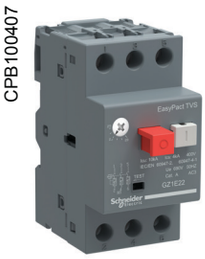
Relay setting range (A)	For use with contactor LC1	Reference	Price per unit
Class 10 A(1) for connection by screw clamp terminals			
0.10…0.16	E06…E38	LRE01	
0.16…0.25	E06…E38	LRE02	
0.25…0.40	E06…E38	LRE03	
0.40…0.63	E06…E38	LRE04	
0.63…1	E06…E38	LRE05	
1…1.6	E06…E38	LRE06	
1.6…2.5	E06…E38	LRE07	
2.5…4	E06…E38	LRE08	
4…6	E06…E38	LRE10	
5.5…8	E09…E38	LRE12	
7…10	E09…E38	LRE14	
9…13	E12…E38	LRE16	
12…18	E18…E38	LRE21	
16…24	E25…E38	LRE22	
23…32	E25…E38	LRE32	
30…38	E38	LRE35	
17...25	E40…E95	LRE322	
23...32	E40…E95	LRE353	
30...40	E40…E95	LRE355	
37...50	E50…E95	LRE357	
48...65	E65…E95	LRE359	
55...70	E80…E95	LRE361	
63...80	E80…E95	LRE363	
80...104	E95	LRE365	
Class 10 A(1) directly connected by connector			
51…81	E120…E160	LRE480	
62…99	E120…E160	LRE481	
84…135	E120…E160	LRE482	
124…198	E200	LRE483	
146…234	E250...E400	LRE484	
174…279	E250...E400	LRE485	
208…333	E250...E400	LRE486	
259…414	E250...E400	LRE487	
321…513	E500	LRE488	
394…630	E630	LRE489	

(1) Standard IEC 60947-4-1 specifies a tripping time for 7.2 the setting current IR : class 10A: between 2 and 10 seconds.

Accessories		
Separate mounting bracket	LRE01 - LRE35	LAEB1
Separate mounting bracket	LRE322 - LRE365	LAEB3

Easy E Range GZ1

Motor Control Circuit Breakers and Accessories



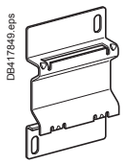
GZ1 E

Environment / Technical characteristics

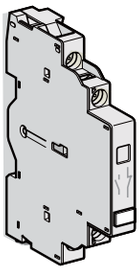
Circuit Breaker Type	GZ1
Conforming Standards	IEC 60947-4, 60947-2,
Protective Treament "TH"	TH
Degree of Protection	IP20 (open mounted)
Utiliztation category	AC-3 (IEC 60947-4-1)
Rated operational voltage (Ue)	690V (IEC 60947-2)
Rated Insulation Voltage (Ui)	690V (IEC 60947-2)
Rated Voltage Suitable for Isolation	Yes (IEC60947-1)
Rated operational frequency	50/60Hz (IEC 60947-4-1)
Rated Impulse withstand voltage (Uimp)	6kV (IEC 60947-2)

Motor circuit-breakers with push button control

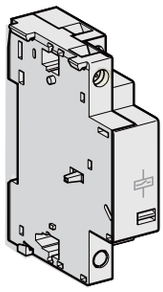
Standard power ratings of 3-phase motors 50/60 Hz in category AC-3 400 V	Setting range of thermal trips	Magnetic tripping current Id ± 20 %	Reference	Price per unit
kW	A	A		
–	0.1…0.16	1.5	GZ1 E01	
–	0.16…0.25	2.4	GZ1 E02	
–	0.25…0.40	5	GZ1 E03	
–	0.40…0.63	8	GZ1 E04	
–	0.63…1	13	GZ1 E05	
0.37	1…1.6	22.5	GZ1 E06	
0.75	1.6…2.5	33.5	GZ1 E07	
1.5	2.5…4	51	GZ1 E08	
2.2	4…6.3	78	GZ1 E10	
4	6…10	138	GZ1 E14	
5.5	9…14	170	GZ1 E16	
7.5	13…18	223	GZ1 E20	
9	17…23	327	GZ1 E21	
11	20…25	327	GZ1 E22	
15	24…32	416	GZ1 E32	



GV2 AF02



GZ1 AN11



GZ1 AS115

Contact Blocks

Instantaneous auxiliary contacts

Mounting	Maximum number	Type of contacts	Unit reference	Price per unit
Side	2	N/O + N/C	GZ1 AN11	
LH side		N/O + N/O	GZ1 AN20	

Electric trips

Mounting	Type	Tension		Reference	Price per unit
Side (1 block on RH side of circuit-breaker)	Undervoltage trip	110…115 V	50 Hz	GZ1 AU115	
		220…240 V	50 Hz	GZ1 AU225	
		380…400 V	50 Hz	GZ1 AU385	
	Shunt trip	110…115 V	50 Hz	GZ1 AS115	
		220…240 V	50 Hz	GZ1 AS225	

Mounting accessory

Description	Application	Unit reference	Price per unit
Adapter plate	For screw fixing of a GZ1E	GV2 AF02	

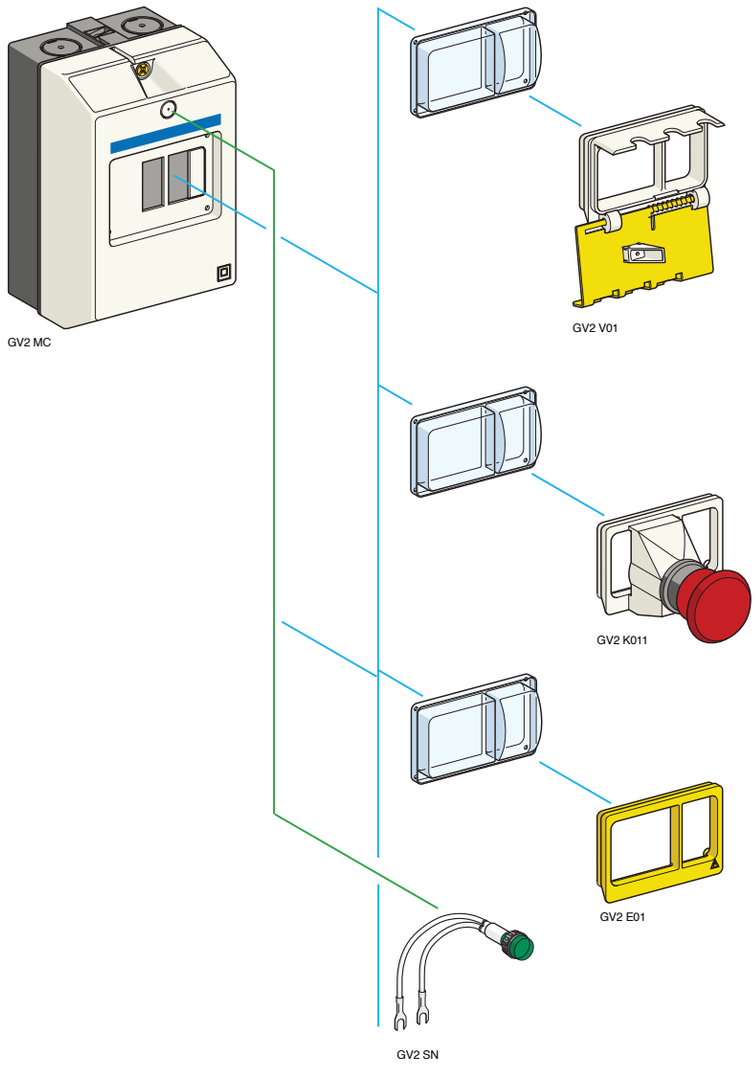


GV2 MC

GV2M/K Enclosures for Medium Duty Applications

Characteristics	
Conforming to standards	IEC 60947-2, IEC 60947-4-1
Operational voltage Ue	690 V
Material	Polycarbonate

Enclosures for thermal-magnetic circuit breakers GV2ME and GZ1E



Different discount applies



VCF 0GE



VCFN 12GE

3-pole Main and Emergency Stop switch-disconnectors for high performance applications

Operator Handle	Front plate Dimensions mm	Ithe A	Power AC-23 at 400 V kW	Incorporated switch body	Possible attachments	Reference	Price per unit
Red, standard,padlockable with up to 3 padlocks (Ø 4 to Ø 8 shank)	Yellow 60 x 60	10	4	V02	2	VCF02GE	
		16	5.5	V01	2	VCF01GE	
		20	7.5	V0	2	VCF0GE	
		25	11	V1	2	VCF1GE	
		32	15	V2	2	VCF2GE	
		50	22	V3	3	VCF3GE	
		63	30	V4	3	VCF4GE	
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8 shanks)	Yellow 90 x 90	100	37	V5	1	VCF5GEN	
		140	45	V6	1	VCF6GEN	

3-pole Main and Emergency Stop switch-disconnectors for standard applications

Red padlockable, either by 1(Ø 8 shank) or by3 padlocks (Ø 6 shank)	Yellow 60 x 60	10	4	VN 12	2	VCFN12GE	
		16	5.5	VN 20	2	VCFN20GE	
		20	7.5	V0	0	VCFN25GE	
		25	11	V1	0	VCFN32GE	
		32	15	V2	0	VCFN40GE	

Add-on modules for enclosures VCFN 12GE and 20GE

Description	Rating A	Reference
Main pole modules	10	VZN12
	16	VZN20
Auxiliary contact block modules	1 N/O latemake contact	VZN05
	1 N/C earlybreak contact	VZN06

Note: For VCF and VBF enclosures from 02GE to 2GE, only one auxiliary contact block VZ7 or VZ20 can be mounted.

Add-on modules for enclusures VCF

Discription	Rating A	Reference
Main Pole Module	10	VZ02
	16	VZ01
	20	VZ0
	25	VZ1
	32	VZ2
	50	VZ3
	63	VZ4
Neutral Pole modules with early make and late break contacts	10 to 32	VZ11
	50 and 63	VZ12
Auxiliary contact block modules with 2 auxiliary contacts	N/O + N/C	VZ7
	N/O + N/O	VZ20





Variable Speed Drives

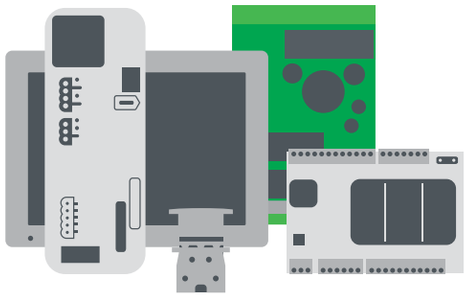
Faster, smarter and more efficiently innovative products



Compact, reliable, easy and cost-effective drive solution.

Altivar Easy 310

Altivar™ Easy 310 variable speed drives for applications from 0.37 to 11 kW / 0.5 to 15 HP address the challenges faced by new economies: fit for purpose at affordable prices with no compromise on ease of use, robustness, and availability ... the core values supported by a worldwide leader in automation.



Drives

When just enough is just right!

Altivar Easy 310

Variable Speed Drives for basic machines

Main features

Power range
- 0.37 – 11 kW

Main voltage range
380 VAC 3 phase
(380V ~ 460 V)

Control capacity
- U/F, vector control, U2/F

Power-off download

Cooling fan control
- Temperature control
- Synchro operation

Assigned speed up/down



Control I/O

Control terminal
- Analog input AI1
- Analog output AO1
- Relay outputs R1A, R1B, - R1C
- Logic inputs LI1...LI4
- Logic outputs LO+, LO-

Communication
Modbus communication protocol

Display terminal

Integrated display
4-digit display

Fit for purpose

- Adaptability to different motors and tough loads
- Embedded functions suitable for general machine applications
- Small footprint and side-by-side mounting to save space

Robustness

- Operation temperature up to 55 °C
- All PCB boards are coated as standard
- Innovation air cooling system

Easiness

- Minimize installation and debugging time
- Quick start guide and full parameter list
- Easy to integrate in automation system
- Multi-loader tool enables configurations duplicated

Availability

- Supported by the service of Schneider Electric, your global specialist with a local proximity
- Wide availability throughout an extensive distribution network

Main characteristics

Analog input AI1

1 software-configurable voltage or current analog input:
- Voltage analog input: 0...5 Vdc (internal power supply only) or 0...10 Vdc , impedance 30 kΩ
- Analog current input: X-Y mA by programming X and Y from 0–20 mA, Impedance 250 Ω

Sampling time: < 20 ms
Resolution: 10 bits
Accuracy: ± 1% at 25 °C/77 °F
Linearity: ± 0.3% of the maximum scale value
Factory setting: Input configured as voltage type

Analog output AO1

1 software-configurable voltage or current analog output:
- Analog voltage output: 0…10 Vdc , minimum load impedance 470 Ω
- Analog current output: 0–20 mA, maximum load impedance 800 Ω

Sampling time: < 10 ms
Resolution: 8 bits
Accuracy: ± 1% at 25 °C/77 °F

Relay outputs R1A, R1B, R1C

1 protected relay output, 1 N/O contact and 1 N/C contact with common point
Response time: 30 ms maximum
Minimum switching capacity: 5 mA for 24 Vdc
Maximum switching capacity:
- On resistive load (cos φ = 1 and L/R = 0 ms): 3 A at 250 Vac or 4 A at 30 Vdc
- On inductive load (cos φ = 0.4 and L/R = 7 ms): 2 A at 250 Vac or 30 Vdc

Logic inputs LI1...LI4

4 programmable logic inputs, compatible with PLC level 1, standard IEC/EN 61131-2
24 Vdc internal power supply or 24 Vdc external power supply (min. 18 V, max. 30 V)
Sampling time: < 20 ms
Sampling time tolerance: ± 1 ms
Factory-set with 2-wire control in "transition" mode for machine safety reasons:
- LI1: forward
- LI2…LI4: not assigned

Multiple assignment makes it possible to configure several functions on one input (for example: LI1 assigned to forward and preset speed 2, LI3 assigned to reverse and preset speed 3)
Impedance 3.5 kΩ

Logic outputs LO1

One 24 Vdc logic output assignable as positive logic (Source) or negative logic (Sink) open collector type, compatible with level 1 PLC, standard IEC/EN 61131-2
Maximum voltage: 30 V
Linearity: ± 1%
Maximum current: 10 mA (100 mA with external power supply)
Impedance: 1 kΩ
Update time: < 20 ms

Variable speed drives

Altivar Easy 310 Drives


PF142119

ATV310H037N4E


PF142121

ATV310HU15N4E


PF142123

ATV310HU30N4E


PF142126

ATV310HU75N4E

Drives

Motor		Line supply				Altivar Easy 310				
Power indicated on rating plate *(1)*		Max. line current *(2)*		Apparent power	Max. prospective line Isc	Maximum continuous output current (In) *(1)*	Maximum transient current for 60 s	Dissipated power at maximum output current (In) *(1)*	Reference	Weight *(3)*
		380 V	460 V	460 V		380 V				
kW	*HP*	A	A	kVA	kA	A	A	W		kg/ *lb*
Three-phase supply voltage: 380…460 V 50/60 Hz										
0.37	*0.5*	2.1	1.8	1.4	5	1.5	2.3	19.63	**ATV310H037N4E**	0.800/ *1.760*
0.75	*1*	3.5	3.1	2.5	5	2.3	3.5	28.83	**ATV310H075N4E**	0.800/ *1.760*
1.5	*2*	6.5	5.4	4.3	5	4.1	6.2	51.82	**ATV310HU15N4E**	1.100/ *2.430*
2.2	*3*	8.8	7.2	5.7	5	5.5	8.3	66.32	**ATV310HU22N4E**	1.100/ *2.430*
3	*4*	11.1	9.2	7.3	5	7.1	10.7	80.24	**ATV310HU30N4E**	1.800/ *3.970*
4	*5*	13.7	11.4	9.1	5	9.5	14.3	102.72	**ATV310HU40N4E**	1.800/ *3.970*
5.5	*7.5*	21.3	14.3	11.4	22	12.6	18.9	141.54	**ATV310HU55N4E**	1.800/ *3.970*
7.5	*10*	26.6	22.4	17.8	22	17	25.5	203.87	**ATV310HU75N4E**	3.700/ *8.160*
11	*15*	36.1	30.4	24.2	22	24	36	294.70	**ATV310HD11N4E**	3.700/ *8.160*

Dimensions (overall)

Drives with heatsinks	W x H x D	
	mm	*in.*
ATV310H037N4E	72 x 143 x 130	*2.83 x 5.63 x 5.12*
ATV310H075N4E	72 x 143 x 140	*2.83 x 5.63 x 5.51*
ATV310HU15N4E, HU22N4E	105 x 143 x 151	*4.13 x 5.63 x 5.94*
ATV310HU30N4E…HU55N4E	140 x 184 x 151	*5.51 x 7.24 x 5.94*
ATV310HU75N4E, HD11N4E	150 x 232 x 171	*5.91 x 9.13 x 6.73*

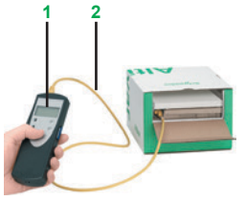
(1) These values are given for a nominal switching frequency of 4 kHz, for use in continuous operation.
If operation above 4 kHz needs to be continuous, the nominal drive current should be derated by 10% for 8 kHz and 20% for 12 kHz.
The switching frequency can be set between 2 and 12 kHz for all ratings.
Above 4 kHz, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise.
See the derating curves in the User Manual, available on our local website.
(2) Typical value for the indicated motor power and for the maximum prospective line Isc.
(3) Weight of product without packaging.

Variable speed drives

Altivar Easy 310
Configuration tools

Configuration tools

Description	For drives	Reference	Weight kg/ *lb*
Simple Loader, Multi-Loader configuration tools and associated cable			
Simple Loader tool For duplicating one drive configuration on another drive. The drives must be powered-up. The tool is supplied with a cordset equipped with 2 RJ45 connectors.	ATV310H●●●N4E	**VW3A8120**	–
Multi-Loader tool 1 For copying a configuration on a PC or drive and duplicating it on another drive. The drives do not need to be powered-up. Supplied with the tool: ■ 1 cordset equipped with 2 RJ45 connectors ■ 1 cordset equipped with a USB type A connector and a USB Mini-B type connector ■ 1 x 2 GB SD memory card ■ 1 female/female RJ45 adaptor ■ 4 AA/LR6 1.5 V batteries	ATV310H●●●N4E	**VW3A8121**	–
Cordset for Multi-Loader tool 2 For connecting the Multi-Loader tool to the Altivar Easy 310 drive in its packaging. Equipped with a non-locking RJ45 connector with special mechanical catch on the drive end and an RJ45 connector on the Multi-Loader end.	ATV310H●●●N4E in its packaging	**VW3A8126**	–



Configuring the drive in its packaging with the Multi-Loader tool VW3A8121+ cordset VW3A8126

Remote display terminals and associated cordsets

Description	Degree of protection	For drives	Reference	Weight kg/ *lb*
Remote display terminals For fixing the Human-Machine interface on an enclosure door with IP 54 or IP 65 degree of protection. A remote-fixing cordset VW3A1104R●● is also required.	IP 54	ATV310H●●●N4E	**VW3A1006**	0.250/ *0.550*
	IP 65	ATV310H●●●N4E	**VW3A1007**	0.275/ *0.610*
Remote-fixing cordsets equipped with 2 RJ45 connectors. For connecting the VW3 A1 006 or VW3A1007 remote display terminal to the Altivar Easy 310 drive.	Length: 1 m/*3.28 ft*	ATV310H●●●N4E	**VW3A1104R10**	0.050/ *0.110*
	Length: 3 m/*9.84 ft*	ATV310H●●●N4E	**VW3A1104R30**	0.150/ *0.330*

PF080659



VW3A1006 with cover open: RUN, FWD/REV and STOP buttons accessible

Dimensions (overall)

Remote display terminal	W x H x D	
	mm	*in.*
VW3A1006	50 x 70 x 22.7	*1.97 x 2.76 x 0.89*
VW3A1007	66 x 106 x 26.7	*2.6 x 4.17 x 1.05*

Variable speed drives

Altivar Easy 310

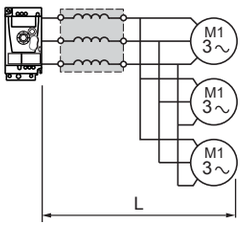
Options: line chokes, motor shokes and LR filter cells

Presentation

Line chokes

A line choke can be used to provide improved protection against overvoltages on the line supply and to reduce harmonic distortion of the current produced by the drive. They are recommended for ATV310…N4E drives.
The recommended chokes limit the line current. They have been developed in line with standard EN 50178 (VDE 0160 level 1 high energy overvoltages on the line supply).
The choke values are defined for a voltage drop between phases of between 3% and 5% of the nominal supply voltage. Values higher than this will cause loss of torque.
These chokes should be installed upstream of the drive.

The use of line chokes is recommended in particular under the following circumstances:
- Close connection of several drives in parallel
- Line supply with significant disturbance from other equipment (interference, overvoltages)
- Line supply with voltage imbalance between phases above 1.8% of the nominal voltage
- Drive supplied by a line with very low impedance (in the vicinity of a power transformer 10 times more powerful than the drive rating)
- Installation of a large number of frequency inverters on the same line
- Reducing overloads on the cosϕ correction capacitors, if the installation includes a power factor correction unit.



VW3A455●
Motor choke

Motor chokes and LR filter cell

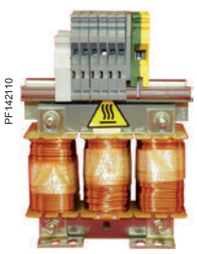
Motor chokes are required:
- When connecting more than 2 motors in parallel
- When the motor cable length (L), including tap-offs, is:
  - 25 m/*82.2 ft* maximum for a shielded motor cable *(1)*,
  - 50 m/*164.4 ft* maximum for an unshielded motor cable *(1)*.

LR filter cell comprises 3 high-frequency chokes and 3 resistors.

References

Line chokes

For drives	Line current without choke		Line current with choke		Choke	
	380 V	460 V	380 V	460 V	Reference	Weight
	A	A	A	A		kg/ *lb*
ATV310H037N4E	2.1	1.8	1.1	1	**VW3A4551**	1.500/ *3.310*
ATV310H075N4E	3.5	3.1	1.9	1.7		
ATV310HU15N4E	6.5	5.4	3.5	2.9	**VW3A4552**	3.700/ *8.160*
ATV310HU22N4E	8.8	7.2	5.1	4.4		
ATV310HU30N4E	11.1	9.2	6.6	5.6		
ATV310HU40N4E	13.7	11.4	8.5	7.1	**VW3A4553**	4.100/ *9.040*
ATV310HU55N4E	21.3	14.3	11.6	9.9		
ATV310HU75N4E	26.6	22.4	15.2	12.8	**VW3A4554**	6.150/ *13.230*
ATV310HD11N4E	36.1	30.4	22	18.9		


PF142110

VW3A455●

Motor chokes and LR filter cell

For drives	Losses	Nominal current	Reference	Weight
	W	A		kg/ *lb*
ATV310H037N4E…HU15N4E	150	10	**VW3A58451** *(2)*	7.400/ *16.310*
ATV310HU22N4E...HU40N4E	65	10	**VW3A4552**	3.700/ *8.160*
ATV310HU55N4E	75	16	**VW3A4553**	4.100/ *9.040*
ATV310HU75N4E...HD11N4E	90	30	**VW3A4554**	6.150/ *13.230*

Dimensions (overall)

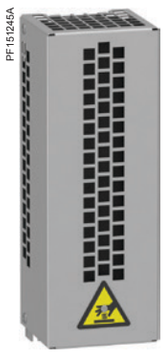
Line chokes or motor chokes, LR filter cell	W x H x D	
	mm	*in.*
VW3A4551	100 x 135 x 60	*3.94 x 5.31 x 2.36*
VW3A4552, A4553	130 x 155 x 90	*5.12 x 6.1 x 3.54*
VW3A4554	155 x 170 x 135	*6.1 x 6.69 x 5.31*
VW3A58451	169.5 x 340 x 123	*6.67 x 13.39 x 4.84*

(1) Motor cable length given for a switching frequency of 4 kHz.
(2) LR filter cell

Variable speed drives

Altivar Easy 310

Options: braking resistors, Modbus serial link



VW3A7730

Braking resistors

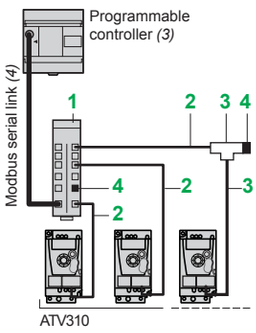
For drives	Minimum Ohmic value	Ohmic value at 20° C/*68 °F*	Power available at 50° C/*122 °F* *(1)*	Reference	Weight kg/ lb
	Ω	Ω	kW		kg/ lb
Not protected resistor (IP00) *(2)*					
ATV310HU15N4E	80	100	0.028	**VW3A7723**	0.600/ *1.320*
ATV310HU22N4E	60				
ATV310HU30N4E	36	100	0.035	**VW3A7725**	0.850/ *1.870*
ATV310HU40N4E	36				
Protected resistor (IP20 or 23)					
ATV310HU15N4E	80	100	0.1	**VW3A7730**	1.500/ *3.307*
ATV310HU22N4E	60				
ATV310HU30N4E	36				
ATV310HU40N4E	36				
ATV310HU55N4E	28	60	0.16	**VW3A7731**	2.000/ *4.409*
ATV310HU75N4E	28				
ATV310HD11N4E	28	28	0.3	**VW3A7732**	3.000/ *6.614*

Dimensions (overall)

Braking resistors	W x H x D	
	mm	*in.*
VW3A7723	60 x 170 x 30	*2.36 x 6.659x 1.18*
VW3A7725	62 x 212 x 36	*2.44 x 8.35 x 1.42*
VW3A7730	105 x 295 x 100	*4.13 x 11.61 x 3.94*
VW3A7731	105 x 345 x 100	*4.13 x 13.58 x 3.94*
VW3A7732	175 x 345 x 100	*6.89 x 13.58 x 3.94*

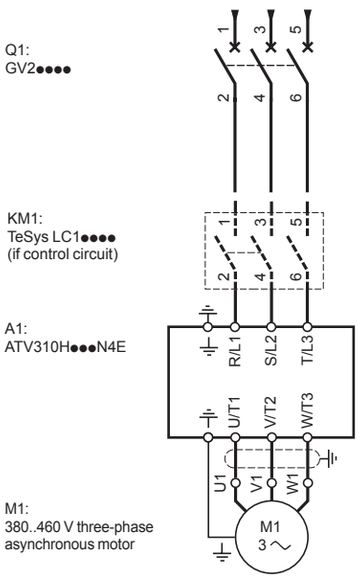
Modbus serial link

Description		Item no.	Length m/*ft*	Unit reference	Weight kg/ *lb*
Connection via splitter box and RJ45 connectors					
Modbus splitter box 10 RJ45 connectors and 1 screw terminal			–	**LU9GC3**	0.500/ *1.100*
Cordsets for Modbus serial link equipped with 2 RJ45 connectors		2	0.3/*0.98*	**VW3A8306R03**	0.025/ *0.060*
			1/*3.28*	**VW3A8306R10**	0.060/ *0.060*
			3/*9.84*	**VW3A8306R30**	0.130/ *0.290*
Modbus T-junction boxes (with integrated cable)		3	0.3/*0.98*	**VW3A8306TF03**	0.190/ *0.420*
			1/*3.28*	**VW3A8306TF10**	0.210/ *0.460*
Line terminators ***(5)*** *(6)* For RJ45 connector	R = 120 Ω C = 1 nf	4	–	**VW3A8306RC**	0.010/ *0.020*
	R = 150 Ω	4	–	**VW3A8306R**	0.010/ *0.020*



Example of Modbus diagram with connection via splitter box and RJ45 connectors

(1) Load factor for resistors: the value of the average power that can be dissipated at 50 °C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications.
For VW3A7730...732:
- 2 s braking with a 0.6 Tn braking torque for a 40 s cycle
- 0.8 s braking with a 1.5 Tn braking torque for a 40 s cycle
(2) For not protected resistors, add a thermal overload device.
(3) Please refer to the programmable controller catalogue on our local website.
(4) Cable depends on the type of controller or PLC.
(5) Order in multiples of 2.
(6) Depends on the bus architecture.



Motor starter with three-phase power supply

Applications

The proposed combinations can:
- Protect people and equipment (when a short-circuit occurs)
- Maintain protection upstream of the drive in the event of a short-circuit on the power stage

Two types of combination are possible:
- Drive + circuit-breaker: Minimum combination
- Drive + circuit-breaker + contactor: Minimum combination with contactor when a control circuit is needed

Motor starters

Standard power ratings of three-phase 4-pole 50/60 Hz motors *(2)*		Variable speed drive	Combination with control circuit (circuit-breaker + contactor)		
			Minimum combination (circuit-breaker only)		TeSys contactor *(1)*
			TeSys motor circuit-breaker *(3)*	Operating range or rating	
kW	*HP*			A	
M1		A1	Q1		KM1
Three-phase supply voltage: 380…460 V 50/60 Hz *(4)*					
0.37	*0.5*	**ATV310H037N4E**	**GV2P07**	2.5	**LC1D09**
			GV2L07	2.5	
0.75	*1*	**ATV310H075N4E**	**GV2P08**	4	**LC1D09**
			GV2L08	4	
1.5	*2*	**ATV310HU15N4E**	**GV2P14**	10	**LC1D09**
			GV2L14	10	
2.2	*3*	**ATV310HU22N4E**	**GV2P14**	10	**LC1D09**
			GV2L14	10	
3	*4*	**ATV310HU30N4E**	**GV2P16**	14	**LC1D09**
			GV2L16	14	
4	*5.4*	**ATV310HU40N4E**	**GV2P16**	14	**LC1D09**
			GV2L16	14	
5.5	*7.4*	**ATV310HU55N4E**	**GV2P22**	25	**LC1D09**
			GV2L22	25	
7.5	*10*	**ATV310HU75N4E**	**GV2P32**	32	**LC1D18**
			GV2L32	32	
11	*15*	**ATV310HD11N4E**	**GV2P40**	40	**LC1D25**
			GV2L40	40	

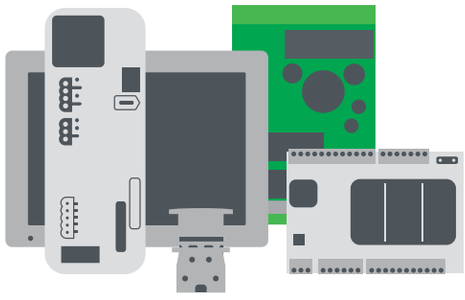
(1) For a complete list of references for TeSys contactors, please visit our local website.
(2) Motor power indicated for combination with an ATV310H●●●N4E drive with the same rating.
(3) TeSys motor circuit-breakers:
- GV2 P●●: Thermal magnetic motor circuit-breakers with pushbutton control
- GV2 L●●: Magnetic motor circuit-breakers with control by rotary knob.



Simply fine-tune your fan and pump applications

Altivar Easy 610

Altivar™ Easy 610 variable speed drives for three-phase synchronous motors from 0.75 to 160 kW, 380 V address the challenges faced by new economies: fit for purpose at affordable prices with no compromise on ease of use, robustness, and availability... the core values supported by a worldwide leader in automation.



Drives

When just enough is just right!

Altivar Easy 610

Variable speed drives for pumps and fans from 0.75 to 160 kW

Main features

Power range: 0.75 – 160 kW

Main voltage range: 380 – 415 V, 3 phase, -15...+10%

Overload capability: Pn, 110% for 60s, or 120% for 20s Pn-1, 150% for 60s

EMC: C3-level filter embedded

Harmonics: DC choke embedded (above 4 kW)

Protection: IP20

Operation temperature: -15 °C to +60 °C (derating above +45 °C)

Motor control law: IM motor: V/f 5 pts, V/f 2 pts, UF quad, energy saving



Control I/O

Control terminal:

- Analog input: 3
- Analog output: 2
- Digital input: 6
- Relay output: 3



Communication:

Fieldbus embedded: Modbus

Optional slot: 1

Display terminal

Basic keypad (standard):

- LCD backlight, removable
- 2 lines, 6 languages
- Configuration save
- Easy mounting kit (Ø22 mm)



Water & Wastewater

- Intake pump
- Booster pump
- Lifting pump
- Aeration blower

Process & Machine Management

- Air cooling system fan
- Circulating pump
- Cooling fan
- Draught fan
- Compressor
- Conveyor

Oil & Gas

- Circulating pump
- Drain pump
- Oil transfer pump

Building Management

- Fan
- Circulating pump

Fit for purpose

- Two modes of overload
- EMC filter embedded
- Harmonic mitigation solution embedded

Easiness

- 7 preprogrammed function blocks
- Easy integration on an enclosure door
- Duplicate the configuration by keypad
- Wiring and operation with the “Quick start”
- Colored control circuit terminals to avoid misuse

Robustness

- Cooling air flow separate from the printed circuit board to avoid dust and oil corrosion
- Electronic cards with protective coating
- Busbar plating to avoid chemical gas corrosion
- Operation temperature: -15…+60 °C

Availability

- Supported by the service of Schneider Electric, your global specialist with a local proximity
- Wide availability throughout an extensive distribution network

Variable speed drives

Altivar Easy 610



ATV610U07N4…ATV610U75N4
ATV610D11N4…ATV610D15N4



ATV610D18N4…ATV610D22N4,
ATV610D30N4…ATV610D45N4,



ATV610D55N4…ATV610D90N4
ATV610C11N4…ATV610C16N4

Presentation of the offer

The Altivar Easy 610 offer covers motor power ratings from 0.75 to 160 kW/*1.04 to 222 HP* for three-phase voltages between 380 and 415 V.

Altivar Easy 610 drives can help improve equipment performance and reduce operating costs by optimizing energy consumption and user comfort.

A communication module is available for seamless integration into the main automation architectures.
Altivar Easy 610 drives feature various configurable I/O as standard to facilitate adaptation to specific applications.
They offer a plug & play solution, whereby parameters are preset in the factory to the desired configuration, to help save process control and operating time.

Rugged

Altivar Easy 610 drives are robust products designed to adapt to various levels of thermal stress and to harsh environments.

- ■ Operating temperature (for continuous monitoring)
- □ Mounting in enclosure: mounted singly or side-by-side: -15...+60 °C/*+5...+140 °F*, 45...60 °C/*113...140 °F* with derating
- ■ Storage and transport temperature: -40...+70 °C /*-104...+158 °F*
- ■ Operating altitude:
- □ 0...1,000 m without derating
- □ 1,000...4,800 m with derating of 1% per 100 m/*328.08 ft*
- □ chemical class 3C3 conforming to IEC/EN 60721
- □ mechanical class 3S3 conforming to IEC/EN 60721
- □ electronic cards with protective coating
- ■ Protection to suit requirements:
- □ IP 20 for mounting in enclosure
- □ IP 40 on the top of the product
- □ IP 43 for remote display terminal

Electromagnetic compatibility (EMC)

Compliance with electromagnetic compatibility requirements has been incorporated into the design of the drive, which simplifies installation and provides an economical means of helping to ensure equipment meets CE marking requirements.
Altivar Easy 610 drives have a category C3 EMC filter (see page 4).

Installation and maintenance

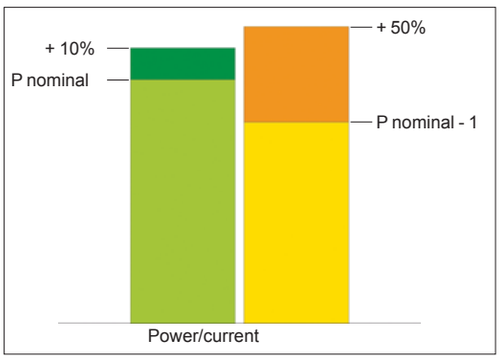
Altivar Easy 610 drives are ergonomically designed to adapt to any type of installation:

- ■ Products, systems, or integrated in iMCC
- ■ IP 20
- ■ Easy installation of products and systems:
- □ cable entry equipped with Romex cable glands to maintain an EMC connection for the power and control cable
- □ color code for connections to the display terminal and control terminals
- ■ Asynchronous drive in open loop for 0.1...500 Hz output frequency
- ■ Lower maintenance costs:
- □ fans can be replaced in less than 5 minutes
- □ no maintenance tool required
- □ limited number of parts

Green product

Altivar Easy 610 drives have been designed to have a smaller carbon footprint: the Green Premium product label, Schneider Electric's eco-mark, indicates your compliance with international environmental standards such as:

- ■ RoHS-2 according to EU directive CE 2002/95
- ■ REACH according to EU regulation 1907/2006
- ■ IEC 62635: the end-of-life instructions comply with the latest recycling rules, 70% of the product components can be recycled.



Normal duty and Heavy duty modes

Normal duty and Heavy duty operating modes

The Altivar Easy 610 offer covers motor power ratings from 0.75...160 kW/*1...216 HP* for three-phase voltages between 380 and 415 V.

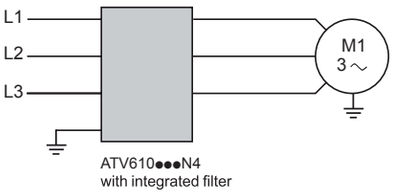
Three-phase power supply	Motor power	Degree of protection	Reference
380...415 V	0.75 kW...160 kW *1...216 HP*	IP 20	**ATV610U07N4... C16N4**

Altivar Easy 610 variable speed drives are designed for use in two operating modes that can optimize the drive nominal rating according to the system constraints.

These two modes are:

- Normal duty (ND): Dedicated mode for applications requiring a slight overload (up to 110% for 60 s or 120% for 20 s) with a motor power no higher than the drive nominal power
- Heavy duty (HD): Dedicated mode for applications requiring a significant overload (up to 150% for 60 s) with a motor power no higher than the drive nominal power derated by one rating

These 2 operating modes make the Altivar Easy 610 range suitable for use in variable and constant torque applications, such as pump, fan, compressor, and conveyor.



Altivar Easy 610 drive with integrated EMC filter

Integration

Integrated DC chokes

Above 4 kW/*5 HP*, Altivar Easy 610 variable speed drives are supplied with an integrated DC choke to reduce harmonic distortion.

Integrated EMC filters

Altivar Easy 610 drives have integrated radio interference input filters in accordance with the EMC standard for variable speed electrical power drive “products” IEC/EN 61800-3, edition 2, category C3 in environment 1 or 2, and to comply with the European EMC (electromagnetic compatibility) directive.

Maximum length of shielded cable *(1)* according to IEC/EN 61800-3, category C3: 50 m/164.04 ft (for all ratings).

The integrated EMC filter creates leakage current to ground. It is possible to reduce the leakage current by removing the capacitors of the filters (see the diagrams on our website or refer to the Installation Manual). In this configuration, the product does not meet the EMC requirements according to standard IEC 61800-3.

Communication protocol

The Modbus serial link allows the connection of configuration and runtime tools via 2 integrated ports.

(1) Values given depend on the nominal switching frequency of the drive. This frequency depends on the drive rating. If motors are connected in parallel, it is the total length of all cables that should be taken into account.

Configuration and runtime tools

Altivar Easy 610 drives are supplied with a plain text display terminal offering the following functions:

- drive control, adjustment, and configuration
- display of current values (motor, I/O, etc.)
- configuration storage and download
- duplication of one drive configuration on another drive
- remote use by means of appropriate accessories
- read/write values

Accessories and options

Accessories

Altivar Easy 610 drives are designed to take complementary accessories to increase their functionality.

- Drive:
  - plate for EMC mounting

- Plain text display terminal:
  - kit for mounting on enclosure door

Options

Altivar Easy 610 integrates a certain number of I/O as standard

The following options can be added:

- Modules:
  - I/O option modules:
    - 2 analog inputs
    - 6 digital inputs
    - 2 digital outputs
  - relay output module
    - 3 NO contacts
  - communication module:
    - Profibus DP V1 bus

- Output filters:
  - dv/dt filters

Motor starters

Schneider Electric offers combinations of circuit breakers and contactors to be able to use Altivar Easy 610 drives in optimum conditions.

Variable speed drives

Altivar Easy 610
Supply voltage 380...415 V 50/60Hz

PF142200



ATV610U07N4

PF142209



ATV610D18N4

PF142217



ATV610C11N4

IP 20 three-phase 380...415 V drives with integrated category C3 EMC filter

Motor			Power part supply				Altivar Easy 610			
Nominal power indicated on rating plate *(1)*			Max. input current *(2)*		Apparent power	Max. prospective line Isc	Maximum continuous current *(1)*	Maximum transient current for 60 s	Reference	Weight
			380 V	415 V	415 V					
ND: Normal duty *(3)*										
HD: Heavy duty *(4)*										
	kW	***HP***	**A**	**A**	**kVA**	**kA**	**A**	**A**		**kg/ *lb***
ND	0.75	*1*	*3.1*	2.9	2.1	5	2.2	2.4	**ATV610U07N4**	*2.400/ 5.291*
HD	0.37	*0.5*	*1.7*	1.5	1.1	5	1.5	2.3		
ND	1.5	*2*	*5.7*	5.3	3.8	5	4.0	4.4	**ATV610U15N4**	*2.400/ 5.291*
HD	0.75	*1*	*3.1*	2.8	2.0	5	2.2	3.3		
ND	2.2	*3*	*7.8*	7.1	5.1	5	5.6	6.2	**ATV610U22N4**	*2.400/ 5.291*
HD	1.5	*2*	*5.6*	5.1	3.7	5	4.0	6.0		
ND	3	*4*	*10.1*	9.2	6.6	5	7.2	7.9	**ATV610U30N4**	*2.400/ 5.291*
HD	2.2	*3*	*7.6*	7.0	5.0	5	5.6	8.4		
ND	4	*5*	*8.8*	8.5	6.1	5	9.3	10.2	**ATV610U40N4**	*4.000/ 8.818*
HD	3	–	*7.2*	6.7	4.8	5	7.2	10.8		
ND	5.5	*7.5*	*11.6*	11.0	7.9	22	12.7	14.0	**ATV610U55N4**	*4.100/ 9.039*
HD	4	*5*	*8.9*	8.6	6.2	22	9.3	14.0		
ND	7.5	*10*	*14.7*	13.7	9.9	22	15.8	17.4	**ATV610U75N4**	*4.100/ 9.039*
HD	5.5	*7.5*	*11.3*	10.7	7.7	22	12.7	19.1		
ND	11	*15*	*22.0*	20.7	14.9	22	23.5	25.9	**ATV610D11N4**	*7.200/ 15.873*
HD	7.5	*10*	*16.4*	15.7	11.3	22	16.5	24.8		
ND	15	*20*	*29.4*	27.7	19.9	22	31.7	34.9	**ATV610D15N4**	*7.200/ 15.873*
HD	11	*15*	*23.0*	21.9	15.7	22	23.5	35.3		
ND	18.5	*25*	*37.2*	35.2	25.3	22	39.2	43.1	**ATV610D18N4**	13.300/ *29.321*
HD	15	*20*	*31.6*	30.3	21.8	22	31.7	47.6		
ND	22	*30*	*41.9*	39.0	28.0	22	46.3	50.9	**ATV610D22N4**	13.900/ *30.644*
HD	18.5	*25*	*36.0*	33.8	24.3	22	39.2	58.8		
ND	30	*40*	*62.5*	59.7	42.9	22	61.5	67.7	**ATV610D30N4**	26.100/ *57.541*
HD	22	*30*	*49.7*	46.3	33.3	22	46.3	69.5		
ND	37	*50*	*76.6*	72.9	52.4	22	74.5	82.0	**ATV610D37N4**	26.800/ *59.084*
HD	30	*40*	*65.8*	61.8	44.4	22	59.6	89.4		
ND	45	*60*	*92.9*	88.3	63.5	22	88	97	**ATV610D45N4**	26.800/ *59.084*
HD	37	*50*	*80.5*	75.8	54.5	22	74.5	112		
ND	55	*75*	*111.5*	105.6	75.9	22	120	132	**ATV610D55N4**	53.700/ *118.388*
HD	45	*60*	*95.9*	91.2	65.6	22	88	132		
ND	75	*100*	*147.9*	139.0	99.9	22	145	160	**ATV610D75N4**	53.700/ *118.388*
HD	55	*75*	*115.8*	110.0	79.1	22	106	159		
ND	90	*125*	*177.8*	168.5	121.1	50	173	190	**ATV610D90N4**	53.700/ *118.388*
HD	75	*100*	*155.8*	149.1	107.2	50	145	218		
ND	110	*149*	*201.0*	165.0	118.6	50	211	232	**ATV610C11N4**	*82.000/ 180.779*
HD	90	*125*	*170.0*	160.0	115.0	50	173	260		
ND	132	*178*	*237.0*	213.0	153.1	50	250	275	**ATV610C13N4**	*82.000/ 180.779*
HD	110	*149*	*201.0*	188.0	135.1	50	211	317		
ND	160	*216*	*284.0*	261.0	187.6	50	302	332	**ATV610C16N4**	*82.000/ 180.779*
HD	132	*178*	*237.0*	224.0	161.0	50	250	375		

*(1) These values are given for a nominal switching frequency of 4 kHz up to **ATV610D45N4**, or 2.5 kHz for **ATV610D55N4...C16N4** for use in continuous operation.*
*The switching frequency is adjustable from 2…12 kHz up to **ATV610D45N4**, or from 1…8 kHz for **ATV610D55N4...C16N4**. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see the derating curves on our website).*

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) Values given for applications requiring a slight overload (up to 110 % for 60 s or 120% for 20 s).

(4) Values given for applications requiring a slight overload (up to 150 % for 60 s).

Variable speed drives

Altivar Easy 610

Mounting accessories / Configuration and runtime tools

PF140389



VW3A9704

Accessories for mounting of variable speed drives

Kit for IP 21 conformity

For use with variable speed drives	Power		Reference
	kW	*HP*	
ATV610C11N4…C16N4	110...160	*149...216*	**VW3A9704**

PF142246



Plain text display terminal

Plain text display terminal

The plain text display terminal is supplied with the drive. It can also be ordered as a spare part.

This terminal can be:
- Connected and mounted on the front of the drive
- Connected and mounted on an enclosure door using a remote mounting accessory

This terminal is used to:
- Control, adjust, and configure the drive
- Display current values (motor, I/O, and process data)
- Store and download configurations (several configuration files can be stored in the memory)
- Duplicate the configuration of one powered-up drive on another powered-up drive

Other features:
- 2 lines
- Languages (Chinese, English, French, German, Italian, Spanish)
- White backlight
- Operating range: -15...50 °C/*+5...122 °F*
- IP 21 protection
- Removable, easy access with RJ45 port

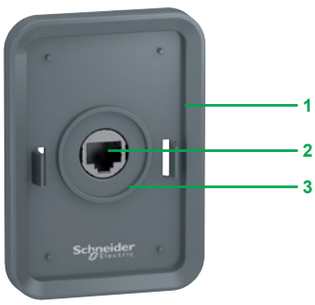
Description

The front of the display terminal comprises:
1. LCD backlight screen
2. “OK” button: saves the current value (ENT)
3. “RUN” button: local control of motor run command
4. “STOP/RESET” button: local control of motor stop command/clearing detected faults
5. “ESC” button: aborts a value, parameter, or menu to return to the previous selection
6. Home: root menu
7. Turn ±: increases or decreases the value, goes to the next or previous line

References

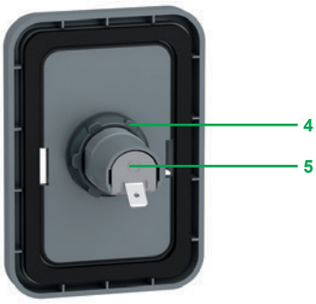
Description	Reference	Weight kg/ *lb*
Plain text display terminal	**VW3A1113**	0.200/ *0.441*

PF142222



Remote mounting kit for mounting plain text display terminal on enclosure door (front panel)

PF142251



Remote mounting kit for mounting plain text display terminal on enclosure door (rear panel)

Mounting kit for plain text display terminal

■ Remote mounting kit for mounting on an enclosure door with IP 43 degree of protection as standard

Description

The kit comprises:
- Tightening tool (also sold separately under the reference ZB5AZ905)

1 Mounting plate
2 RJ45 port for the plain text display terminal
3 Seal
4 Fixing nut
5 RJ45 port for connecting the remote-mounting cordset

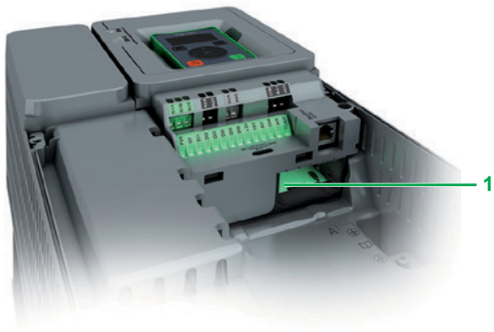
Cordsets must be ordered separately depending on the length required.
Drilling a hole with a standard Ø 22 tool, as used for a pushbutton, allows the unit to be mounted without needing a cut-out in the enclosure (Ø 22.5 mm/*Ø 0.89 in.* drill hole).

An anti-rotation function is provided and operates as follows: when the kit is locked on the panel tightly by the nut, the gasket on the back cannot rotate.

References

Description	Length m/ *ft*	IP degree of protection	Reference	Weight kg/ *lb*
Remote mounting kit Order with remote-mounting cordset VW3A1104R●●●	–	43	**VW3A1114**	–
Tightening tool for remote mounting kit	–	–	**ZB5AZ905**	0.016/ *0.035*
Remote-mounting cordset equipped with 2 RJ45 connectors	1/ *3.28*	–	**VW3A1104R10**	0.050/ *0.110*
	3/ *9.84*	–	**VW3A1104R30**	0.150/ *0.331*
	5/ *16.40*	–	**VW3A1104R50**	0.250/ *0.551*
	10/ *32.81*	–	**VW3A1104R100**	0.500/ *1.102*

PF142250



Integrated I/O and I/O option modules

Presentation

Altivar Easy 610 integrates the following types of I/O as standard:
- 3 analog inputs 0....10 V/0...20 mA (software-configurable voltage or current, temperature probe, and water level sensor)
- 6 digital inputs 24 V DC (2 of which can be programmed as pulse inputs)
- 2 analog outputs 0....10 V/0...20 mA (software-configurable voltage or current)
- 3 relay outputs (configurable relay logic)

By installing I/O option modules, Altivar Easy 610 drives can be adapted to meet the needs of applications that manage additional sensors or specific sensors.

2 I/O option modules are available:
- Digital and analog I/O option module
- Relay output module

These I/0 modules as well as the communication modules insert into slot A on Altivar Easy 610 drives **1.**

Digital and analog I/O option module

- 2 differential analog inputs configurable via software as current (0-20 mA/4-20 mA) or probe (PTC, PT100, or 2-wire or 3-wire PT1000) inputs
  - 14-bit resolution
- 6 x 24 V ⎓ positive or negative digital inputs
  - sampling: 1 ms max.
- 2 assignable digital outputs

PF140391



VW3A3203

Relay output module

- 3 relay outputs with NO contacts
- 1 fixed screw terminal block

PF130897



VW3A3204

References

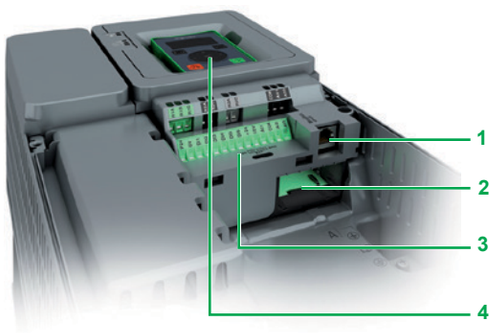
Description	I/O type				Reference	Weight kg/ *lb*
	Digital inputs	Digital outputs	Analog inputs	Relay outputs		
Digital and analog I/O module	6	2	2 *(1)*	–	**VW3A3203**	–
Relay output module	–	–	–	3 *(2)*	**VW3A3204**	–

Integrated ports and communication protocol

Presentation

Altivar Easy 610 drives have 2 built-in RJ45 communication ports as standard:
- one port dedicated to field network operation for exchanging data with other devices via the Modbus serial link protocol **1**
- a second dedicated port for the multidrop connection of the following HMIs and configuration tools **4**:
  - the plain text terminal
  - a Magelis industrial HMI terminal

PF142250



Altivar Easy 610 drives integrate the Modbus serial link communication protocol as standard. The detailed specifications for serial communication ports and the Modbus protocol are available on our local website.

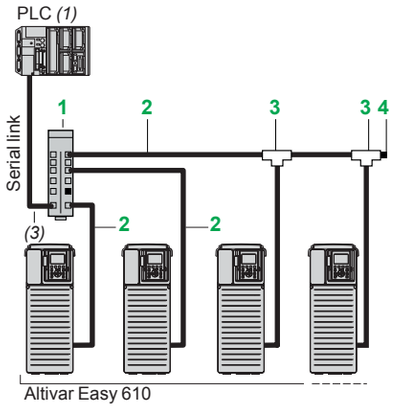
Description

1 RJ45 serial port
2 Slot A for I/O expansion or communication modules
3 Fixed screw terminal blocks for 24 V ⎓ power supply and integrated I/O
4 RJ45 serial link for HMI (remote plain text terminal, Magelis terminal, etc.)

Altivar Easy 610 drives can take one communication module, or digital and analog I/O option module, or relay output module in slot A.

Note: The user manuals and description files (gsd) for devices on the communication buses and networks are available on our website.

(1) Differential analog inputs configurable via software as current (0-20 mA/4-20 mA) or probe (PTC, PT100, or 2-wire or 3-wire PT1000) inputs. When configured as PTC probe inputs, they must never be used to protect an ATEX motor in applications in explosive atmospheres. Please refer to the ATEX guide on our website.
(2) NO contacts.



Example of serial link architecture

Integrated serial port *(continued)*

Description			Item	Length m/ *ft*	Unit reference	Weight kg/ *lb*
Connection accessories						
Splitter box 10 RJ45 connectors and 1 screw terminal block			1	–	**LU9GC3**	0.500/ *1.102*
Modbus T-junction boxes	With 0.3 m/*0.98 ft* integrated cable		3	0.3/ *0.98*	**VW3A8306TF03**	0.190/ *0.419*
	With 1 m/*3.28 ft* integrated cable		3	1/ *3.28*	**VW3A8306TF10**	0.210/ *0.463*
Modbus line terminator *(2)*	For RJ45 connector	R = 120 Ω C = 1 nf	4	–	**VW3A8306RC**	0.010/ *0.022*
Cordsets equipped with 2 RJ45 connectors			2	0.3/ *0.98*	**VW3A8306R03**	0.025/ *0.055*
				1/ *3.28*	**VW3A8306R10**	0.060/ *0.132*
				3/ *9.84*	**VW3A8306R30**	0.130/ *0.287*

PROFIBUS DP V1 optional communication module

Presentation and functions

Altivar Easy 610 drives can also be connected to other industrial communication buses and networks using the communication module available as an option. This communication module is supplied in “cassette” format for ease of mounting/removal.

Dedicated communication module: PROFIBUS DP V1.
PROFIBUS DP V1 module also supports the Profidrive and CiA402 profiles.
It is possible to maintain communication using a separate power supply for the control and power sections. Monitoring and diagnostics are possible via the network even if there is no power supply to the power section.

All drive functions can be accessed via the various communication networks:
- Configuration
- Adjustment
- Control
- Monitoring

Altivar Easy 610 drives offer a high degree of interfacing flexibility with the possibility to assign, by configuration, the different control sources (I/O, communication networks, and HMI terminal) to control functions in order to meet the requirements of complex applications.

Communication is monitored according to the specific criteria for each protocol. However, regardless of the protocol, it is possible to configure how the drive responds to a detected communication interruption, as follows:
- Define the type of stop when a communication interruption is detected
- Maintain last command received
- Ignore the detected communication interruption



VW3A3607

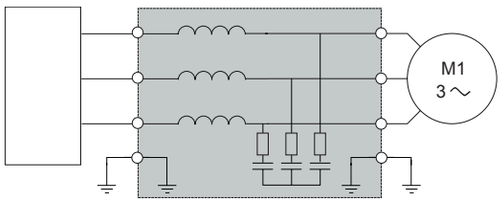
References

Description	Reference	Weight kg/ *lb*
PROFIBUS DP V1 communication module Port: 1 x 9-way female SUB-D connector Conforming to PROFIBUS DP V1 Profiles supported: ■ CiA 402 drive ■ Profidrive Offers several message handling modes based on DP V1	**VW3A3607**	0.140/ *0.309*
IP 20 straight connectors *(4)* for Profibus module (SUB-D connection)	**LU9AD7**	–

(1) Please refer to the PLC catalogs on our website.
(2) Order in multiples of 2.
(3) Cable depends on the PLC.
(4) Only straight connectors are compatible with Altivar Easy 610 drives.

(4) Only straight connectors are compatible with Altivar Easy 610 drives.

Presentation



Altivar Easy 610 drive with dv/dt filter

Altivar Easy 610 drives operate with the following maximum motor cable lengths (without dv/dt filters):

- ■ ATV610U07N4…U55N4:
  - □ 100 m/*328.08 ft* for shielded cables
  - □ 150 m/*492.13 ft* for unshielded cables
- ■ ATV610U75N4...D45N4:
  - □ 100 m/*328.08 ft* for shielded cables
  - □ 200 m/*656.17 ft* for unshielded cables
- ■ ATV610D55N4…D90N4:
  - □ 150 m/*492.13 ft* for shielded cables
  - □ 200 m/*656.17 ft* for unshielded cables
- ■ ATV610C11N4…C16N4:
  - □ 150 m/*492.13 ft* for shielded cables
  - □ 200 m/*656.17 ft* for unshielded cables

To limit the impact of dv/dt filters and overvoltages at the motor side, it is recommended, for cables longer than 50 m/*164 ft*, that you check the motor insulation type and add an output filter if necessary.

Output filters are used to limit dv/dt at the motor terminals.

They are also used to:

- ■ Limit overvoltages at the motor terminals to:
  - □ 1000 V at 400 V ~ (rms value)
- ■ Filter interference caused by opening a contactor placed between the filter and the motor
- ■ Reduce the motor ground leakage current

The performance of dv/dt filters will be affected if the maximum cable lengths are exceeded. For an application with several motors connected in parallel, the cable length must include all cabling. If a cable longer than that recommended is used, the dv/dt filters may overheat.

dv/dt filters

For drives	Maximum length of motor cable			Degree of protection	Nominal current	Unit reference	Weight
	Maximum switching frequency *(1)*	Shielded cable *(2)*	Unshielded cable *(2)*				
	kHz	m/*ft*	m/*ft*	IP	A		kg/*lb*
Three-phase supply voltage: 380...415 V							
ATV610U07N4...U22N4	4	150/492.13	200/656.17	20	6	**VW3A5301**	11.000/*24.251*
ATV610U30N4...U55N4	4	150/492.13	200/656.17	20	15	**VW3A5302**	12.000/*26.455*
ATV610U75N4...D15N4	4	250/*820.21*	300/*984.25*	20	25	**VW3A5303**	12.000/*26.455*
ATV610D18N4...D22N4	4	250/*820.21*	300/*984.25*	20	50	**VW3A5304**	18.000/*39.683*
ATV610D30N4...D45N4	4	250/*820.21*	300/*984.25*	20	95	**VW3A5305**	19.000/*41.888*
ATV610D55N4...D90N4	2.5	300/*984.25*	350/*1148.29*	00	180	**VW3A5306**	22.000/*48.502*
ATV610C11N4...C16N4	2.5	300/*984.25*	350/*1148.29*	00	305	**VW3A5307**	40.000/*88.185*

(1) The filters are designed to operate in a switching frequency range of between 2 and 8 kHz.
(2) Values given depend on the nominal switching frequency of the drive. This frequency depends on the drive rating. These cable lengths are given as examples only as they can vary depending on the application. They correspond to motors conforming to IEC 6034-25 and NEMA MG1/31.2006.

Variable speed drives

Alitvar Easy 610
Motor starters. Supply voltage 380...415V



NSX160●MA150

+



LC1D115●●

+



ATV610D55N4

Applications

Circuit breaker/contactor/drive combinations help to ensure continuity of service in an installation.
The type of circuit breaker/contactor coordination selected can help reduce maintenance costs in the event of a motor short-circuit on the drive input by minimizing the time required to make the necessary repairs and the cost of replacement equipment. The suggested combinations provide coordination according to the drive rating.

The drive controls the motor, provides a monitoring function against short-circuits between the drive and the motor, and helps protect the motor cable against overloads. Overload monitoring is provided by the drive's motor thermal monitoring function if this has been enabled. Otherwise, an external monitoring device such as a probe or thermal overload relay should be provided. The circuit breaker helps protect the drive's power cables against short-circuits.

IEC standard motor starters

Motor Power *(1)*		Drive reference	Circuit breaker			Line contactor reference *(3) (4)*
			Reference *(2)*	Rating (Ith)	Irm	
kW	*HP*			A	A	
Three-phase supply voltage: 380…415 V 50/60 Hz						
0.75	*1*	**ATV610U07N4**	**GV2L08**	4	51	**LC1D09●●**
1.5	*2*	**ATV610U15N4**	**GV2L10**	6.3	78	**LC1D09●●**
2.2	*3*	**ATV610U22N4**	**GV2L14**	10	138	**LC1D09●●**
3	*4*	**ATV610U30N4**	**GV2L16**	14	170	**LC1D25●●**
4	*5.4*	**ATV610U40N4**	**GV2L16**	14	170	**LC1D25●●**
5.5	*7.4*	**ATV610U55N4**	**GV2L16**	14	170	**LC1D25●●**
7.5	*10.1*	**ATV610U75N4**	**GV2L20**	18	223	**LC1D32●●**
11	*14.9*	**ATV610D11N4**	**GV2L22**	25	327	**LC1D32●●**
15	*20.3*	**ATV610D15N4**	**GV3L32**	32	448	**LC1D40A●●**
18.5	*25*	**ATV610D18N4**	**GV3L40**	40	560	**LC1D50A●●**
22	*30*	**ATV610D22N4**	**GV3L50**	50	700	**LC1D50A●●**
30	*40*	**ATV610D30N4**	**NS80HMA80**	80	1000	**LC1D80●●**
37	*50*	**ATV610D37N4**	**NS80HMA80**	80	1000	**LC1D80●●**
45	*60*	**ATV610D45N4**	**NSX100●●MA100**	100	1300	**LC1D115●●**
55	*75*	**ATV610D55N4**	**NSX160●●MA150**	150	1500	**LC1D115●●**
75	*100*	**ATV610D75N4**	**NSX160●●MA150**	150	1500	**LC1D150●●**
90	*125*	**ATV610D90N4**	**NSX250●●MA220**	220	2420	**LC1F185●●**
110	*149*	**ATV610C11N4**	**NSX250●●MA220**	220	2420	**LC1F185●●**
132	*178*	**ATV610C13N4**	**NSX400●MIC1●3M320A**	320	3500	**LC1F265●●**
160	*216*	**ATV610C16N4**	**NSX400●MIC1●3M320A**	320	4000	**LC1F265●●**

(1) Standard power ratings for 4-pole motors 400 V 50/60 Hz. The values expressed in HP comply with the NEC (National Electrical Code).
(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S or L). See table below for breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	Icu (kA) for 380…415 V					
		F	N	H	S	L
GV2L08…L14 *(5)*	130	–	–	–	–	–
GV2L14…L22	50	–	–	–	–	–
GV3L32…L65	50	–	–	–	–	–
NS80HMA	70	–	–	–	–	–
NSX100●●MA100	–	36	50	70	100	150
NSX160●●MA150	–	36	50	70	100	150
NSX250●●MA220	–	36	50	70	100	150
NSX400●●Micrologic 1●3-M	–	36	50	70	100	150

(3) Composition of contactors:
LC1D09...D150: 3 poles + 1 NO auxiliary contact and 1 NC auxiliary contact.
LC1F185...LC1F265: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalog.
(4) Replace ●● with the control circuit voltage reference indicated in the table below:

	Volts ∿	24	48	110	220	230	240
LC1D09 …LC1D150	50 Hz	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz	**B6**	**E6**	**F6**	**M6**	**–**	**U6**
	50/60 Hz	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F185	50 Hz (LX1 coil)	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz (LX1 coil)	**–**	**E6**	**F6**	**M6**	**–**	**U6**
	40...400 Hz (LX9 coil)	**–**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F265	40...400 Hz (LX1 coil)	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Center.
(5) GV2L14: Icu of 130 kA in combination with an ATV610U30N4,Icu of 20 kA with an ATV610U40N4

Variable speed drives

Alitvar Easy 610
Practical information for installation



Variable speed drives 380...415 V IP 20

Overall dimensions

Variable speed drives		W x H x D	
		mm	*in.*
ATV610U07N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U15N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U22N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U30N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U40N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U55N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610U75N4		145 x 297 x 203	*5.71 x 11.69 x 7.99*
ATV610D11N4		171 x 360 x 233	*6.73 x 14.17 x 9.17*
ATV610D15N4		171 x 360 x 233	*6.73 x 14.17 x 9.17*
ATV610D18N4		211 x 495 x 232	*8.31 x 19.50 x 9.13*
ATV610D22N4		211 x 495 x 232	*8.31 x 19.50 x 9.13*
ATV610D30N4		226 x 613 x 271	*8.90 x 24.10 x 10.67*
ATV610D37N4		226 x 613 x 271	*8.90 x 24.10 x 10.67*
ATV610D45N4		226 x 613 x 271	*8.90 x 24.10 x 10.67*
ATV610D55N4		290 x 762 x 323	*11.42 x 30 x 12.72*
ATV610D75N4		290 x 762 x 323	*11.42 x 30 x 12.72*
ATV610D90N4		290 x 762 x 323	*11.42 x 30 x 12.72*
ATV610C11N4		320 x 853 x 390	*12.48 x 33.54 x 15.35*
	with kit for IP21 conformity	320 x 1159 x 390	*12.48 x 45.63 x 15.35*
ATV610C13N4		320 x 853 x 390	*12.48 x 33.54 x 15.35*
	with kit for IP21 conformity	320 x 1159 x 390	*12.48 x 45.63 x 15.35*
ATV610C16N4		320 x 853 x 390	*12.48 x 33.54 x 15.35*
	with kit for IP21 conformity	320 x 1159 x 390	*12.48 x 45.63 x 15.35*

dv/dt filters

Overall dimensions

dv/dt filters	W x H x D	
	mm	*in.*
VW3A5301	295 x 535 x 215	*11.61 x 21.06 x 8.47*
VW3A5302	295 x 535 x 215	*11.61 x 21.06 x 8.47*
VW3A5303	295 x 535 x 215	*11.61 x 21.06 x 8.47*
VW3A5304	295 x 560 x 245	*11.61 x 22.05 x 9.65*
VW3A5305	295 x 610 x 245	*11.61 x 24.02 x 9.65*
VW3A5306	380 x 235 x 350	*14.96 x 9.25 x 13.78*
VW3A5307	360 x 420 x 270	*14.17 x 16.54 x 10.63*



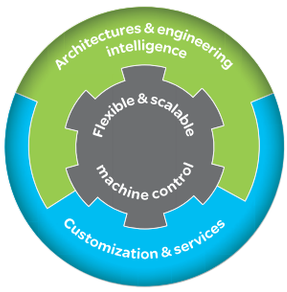


PLC Controller

Modicon logic controllers

Modicon TM M221 logic controllers

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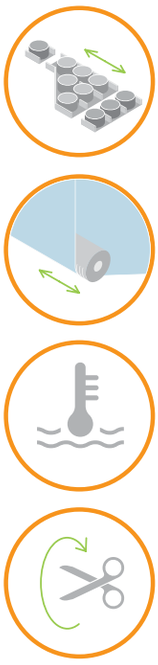


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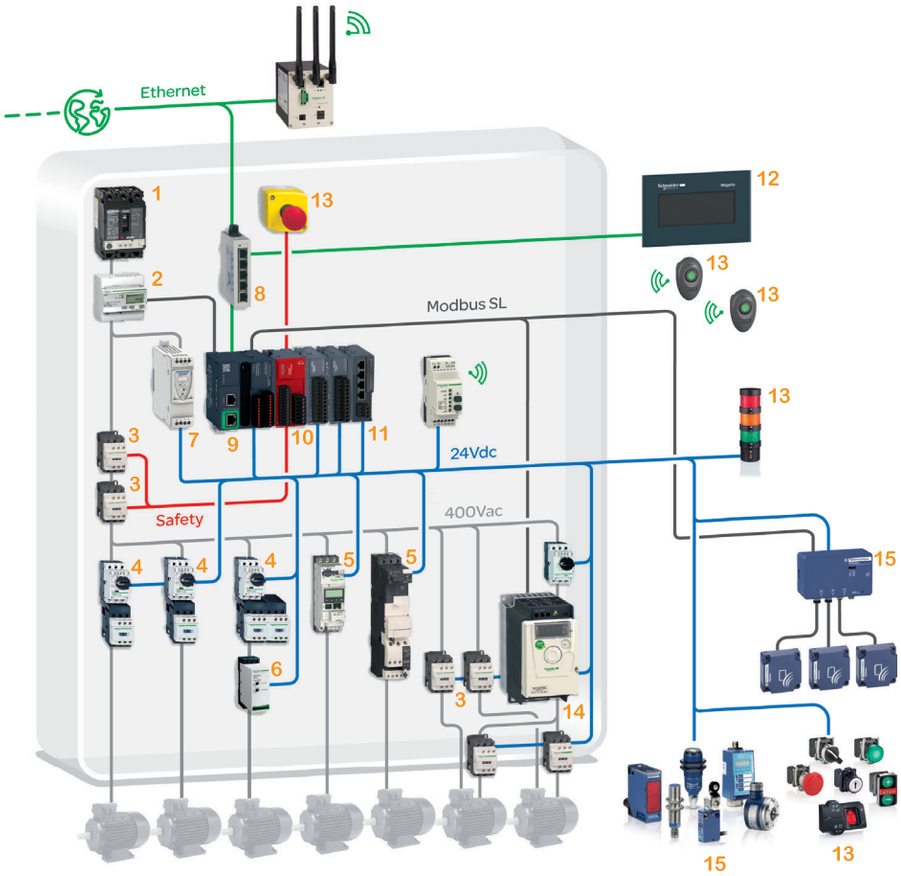
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Application Function Blocks (AFB)



1 POWERPACT circuit breaker
2 Energy meter Acti9 iEM310 iEM310
3 TeSys D contactor
4 TeSys GV2P motor circuit-breaker
5 TeSys U starter-controller
6 Multi9 circuit-breaker C60N
7 Phaseo power supply 24 V ⎓
8 Ethernet switch (unmanaged)
9 **Modicon M221 Book logic controller**
10 Modicon TM3 safety module, Modicon TM3 digital/analog I/O modules
11 Modicon TM3 TeSys motor starter module
12 Magelis display
13 Harmony signalling and control devices
14 Altivar 312 variable speed drive
15 OsiSense: limit switches and inductive sensors

Modicon logic controllers

Selection Guide

Applications		**Control of simple machines**				
						
Supply voltage		100-240 V ∿	24 V ⎓	24 V ⎓	100-240 V ∿	24 V ⎓	24 V ⎓
Inputs/outputs	■ Logic inputs/outputs	**16 logic I/O**			**24 logic I/O**		
	□ No. and type of inputs	9 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	9 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	9 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	14 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	14 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	14 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs
	□ No. and type of outputs	7 relay outputs	7 source transistor outputs, inc. 2 high-speed outputs	7 sink transistor outputs, inc. 2 high-speed outputs	10 relay outputs	10 source transistor outputs, inc. 2 high-speed outputs	10 sink transistor outputs, inc. 2 high-speed outputs
	□ Connection of the logic I/O	On removable screw terminal block					
	■ Analog inputs	2 x 0…10 V analog inputs					
	□ Connection of analog inputs	On dedicated removable connector					
I/O extension	Max. number of I/O expansion modules that can be connected /with bus expansion modules	□ 7 Modicon TM3 expansion modules, along with limited number of outputs. □ 14 Modicon TM3 expansion modules with the use of bus expansion modules (transmitter and receiver), along with limited number of outputs. □ Possible use of Modicon TM2 expansion modules with restrictions.					
Embedded communication	Ethernet link	1 Ethernet port on TM221C**E●●●** controllers: Modbus TCP communication (client & server), slave Modbus TCP, DHCP Client dynamic configuration, programming, downloading, monitoring, EtherNet/IP adapter					
	Serial link	1 serial link port (RJ 45 connector) RS 232/RS 485 with + 5 V supply					
Embedded functions	Process control	PID					
	Counting	Up to 4 high-speed counter inputs (HSC), 100 kHz frequency					
	Position control	Position control (PTO), with trapezoidal profile and S curve able to control either: □ 2 axes in “pulse direction” (P/D) mode □ 1 axis in CW/CCW mode					
Format	W x H x D	3 controller sizes:					
		95 x 90 x 70 mm *3.74 x 3.54 x 2.75 in.*			110 x 90 x 70 mm *4.33 x 3.54 x 2.75 in.*		
Options	■ Cartridges	□ 3 analog I/O expansion cartridges □ 1 additional serial link communication cartridge □ 3 application cartridges - for control of hoisting applications - for control of packaging applications - for control of conveying applications					
	Number of cartridge slots	1					
	■ Display unit	TMH2GDB remote graphic display: visualization and monitoring					
Mounting		Mounting on ⊥ symmetrical rail or panel with specific mounting kit TMAM2					
Software programming		With SoMachine Basic software					
Logic controller type		**Modicon M221**					
	Controllers without Ethernet port	**TM221C16R**	**TM221C16T**	**TM221C16U**	**TM221C24R**	**TM221C24T**	**TM221C24U**
	Controllers with embedded Ethernet port	**TM221CE16R**	**TM221CE16T**	**TM221CE16U**	**TM221CE24R**	**TM221CE24T**	**TM221CE24U**

Modicon M221 and M221 Book logic controllers

Selection Guide

			Control of simple machines		
					
100-240 V ∿	24 V ⎓	24 V ⎓	24 V ⎓	24 V ⎓	24 V ⎓
40 logic I/O			**16 logic I/O**	**16 logic I/O**	**32 logic I/O**
24 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	24 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	24 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	8 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	8 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs	16 sink/source 24 V ⎓ inputs, inc. 4 high-speed inputs
16 relay outputs	16 source transistor outputs, inc. 2 high-speed outputs	16 sink transistor outputs, inc. 4 high-speed outputs	8 relay outputs	8 source transistor outputs, inc. 2 high-speed outputs	16 source transistor outputs, inc. 2 high-speed outputs
			On removable screw terminal block or spring terminal block *(1)*		On HE 10 connector (with the Telefast Modicon ABE7 pre-wired system: connection cables and sub-bases)
			2 x 0…10 V analog inputs		
			On dedicated removable connector		
			□ 7 Modicon TM3 expansion modules, along with limited number of outputs. □ 14 Modicon TM3 expansion modules with the use of bus expansion modules (transmitter and receiver), along with limited number of outputs. □ Possible use of Modicon TM2 expansion modules with restrictions.		
			1 Ethernet port on TM221ME●●● controllers: Modbus TCP communication (client & server), slave Modbus TCP, DHCP Client dynamic configuration, programming, downloading, monitoring. EtherNet/IP adapter		
			1 serial link port (RJ 45 connector) RS 232/RS 485 with + 5V supply 1 additional serial link port on TM221M●●● controllers (RJ 45) RS 485		
			PID		
			Up to 4 high-speed counter inputs (HSC), 100 kHz frequency		
			Position control (PTO), with trapezoidal profile and S curve able to control either:		
		□ 4 axes in “pulse direction” (P/D) mode □ 2 axes in CW/CCW mode	□ 2 axes in “pulse direction” (P/D) mode □ 1 axis in CW/CCW mode		
			1 size only:		
163 x 90 x 70 mm *6.41 x 3.54 x 2.75 in.*			70 x 90 x 70 mm *2.75 x 3.54 x 2.75 in.*		
			–		
2			–		
			TMH2GDB remote graphic display: visualization and monitoring		
			Mounting on ⊔ symmetrical rail or panel with specific mounting kit TMAM2		
			With SoMachine Basic software		
			Modicon M221 Book		
TM221C40R	**TM221C40T**	**TM221C40U**	**TM221M16R** **TM221M16RG** *(1)*	**TM221M16T** **TM221M16TG** *(1)*	**TM221M32TK**
TM221CE40R	**TM221CE40T**	**TM221CE40U**	**TM221ME16R** **TM221ME16RG** *(1)*	**TM221ME16T** **TM221ME16TG** *(1)*	**TM221ME32TK**

(1) Spring terminal block on references ending in the letter G.

Expansion modules

Modicon TM3 digital I/O modules - References


TM3DI8


TM3DI8G


TM3DI8A


TM3DI32K


TM3DQ16U


TM3DQ16UG


TM3DQ16UK


TM3DQ32TK


TM3DQ32UK


TM3DM24R


TM3DM24RG

References

Modicon TM3 digital input modules

Number of logic inputs	Input type		Term. block for input conn. *(1)* Thread *(mm/in.)*	References
8 inputs	sink/source 24 V c		screw 5.08/*0.2*	**TM3DI8**
			spring 5.08/*0.2*	**TM3DI8G**
	120 V a		screw 5.08/*0.2*	**TM3DI8A**
16 inputs	sink/source 24 V c		screw 3.81/*0.15*	**TM3DI16**
			spring 3.81/*0.15*	**TM3DI16G**
			HE 10 connector –	**TM3DI16K** *(2)*
32 inputs	sink/source 24 V c		HE 10 connector –	**TM3DI32K** *(2)*

Modicon TM3 digital output modules

Number of logic outputs	Output type	Output current	Term. block for output conn. *(1)* Thread *(mm/in.)*	References
8 outputs	Relay	2 A	screw 5.08/*0.2*	**TM3DQ8R**
			spring 5.08/*0.2*	**TM3DQ8RG**
	Transistor, source	0.5 A	screw 5.08/*0.2*	**TM3DQ8T**
			spring 5.08/*0.2*	**TM3DQ8TG**
	Transistor, sink	0.5 A	screw 5.08/*0.2*	**TM3DQ8U**
			spring 5.08/*0.2*	**TM3DQ8UG**
16 outputs	Relay	2 A	screw 3.81/*0.15*	**TM3DQ16R**
			spring 3.81/*0.15*	**TM3DQ16RG**
	Transistor, source	0.5 A	screw 3.81/*0.15*	**TM3DQ16T**
			spring 3.81/*0.15*	**TM3DQ16TG**
		0.1 A	HE 10 connector –	**TM3DQ16TK** *(2)*
	Transistor, sink	0.5 A	screw 3.81/*0.15*	**TM3DQ16U**
			spring 3.81/*0.15*	**TM3DQ16UG**
		0.1 A	HE 10 connector –	**TM3DQ16UK** *(2)*
32 outputs	Transistor, source	0.1 A	HE 10 connector –	**TM3DQ32TK** *(2)*
	Transistor, sink	0.1 A	HE 10 connector –	**TM3DQ32UK** *(2)*

Modicon TM3 digital mixed I/O modules

No. of logic I/O	Number and type of inputs	Number and type of outputs	Term. block for input/output conn. *(1)* Thread *(mm/in.)*	References
8 inputs/outputs	4 sink/source 24 V c inputs	4 relay outputs, 2 A	screw 5.08/*0.2*	**TM3DM8R**
			spring 5.08/*0.2*	**TM3DM8RG**
24 inputs/outputs	16 sink/source 24 V c inputs	8 relay outputs, 2 A	screw 3.81/*0.15*	**TM3DM24R**
			spring 3.81/*0.15*	**TM3DM24RG**

Separate parts

Designation	Description	Reference
Mounting kit Sold in lots of 10	For plate or panel mounting of digital I/O modules	**TMAM2**
Set of terminal blocks for connecting the I/O	4 x 10-way and 4 x 11-way removable terminal blocks with screw terminals for TM3DI16, TM3DQ16R, TM3DQ16T and TM3DQ16U modules	**TMAT2MSET**
	4 x 10-way and 4 x 11-way removable terminal blocks with spring terminals for TM3DI16G, TM3DQ16RG, TM3DQ16TG and TM3DQ16UG modules	**TMAT2MSETG**

(1) Removable screw or spring-type terminal blocks, supplied.
(2) Modules compatible with the Telefast Modicon ABE7 pre-wired system (on our website www.schneider-electric.com).

Expansion modules

Modicon TM3 digital I/O modules - Selectrion Guide

Applications	Type of expansion module	Analog inputs			
	Compatibility	■ Modicon M221 and M221 Book logic controllers ■ Modicon M241 logic controllers ■ Modicon M251 logic controllers			
					
Inputs	Number	**2 inputs**	**4 inputs**	**4 inputs**	**8 inputs**
	Type	**Voltage/current**	**Voltage/current**	**Temperature or voltage/ current**	**Voltage/current**
	Range	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	Thermocouples (J, K, R, S, B, T, N, E, C) Temperature probes (RTDs): (Ni100, Ni1000, PT100, PT1000) - 10…+ 10 VDC, 0…+ 10 VDC / 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA
	Resolution	16 bits or 15 bits + sign	12 bits or 11 bits + sign	16 bits or 15 bits + sign	12 bits or 11 bits + sign
	Read time	1 or 10 ms (configurable)	1 or 10 ms (configurable)	100 ms per channel for temperature signals. 1 or 10 ms (configurable) for voltage/current signals	1 or 10 ms (configurable)
Outputs	Number	–	–	–	–
	Type	–	–	–	–
	Range	–	–	–	–
	Resolution	–	–	–	–
	Transfer time	–	–	–	–
Supply voltage		With a 24 V ⎓ external power supply			
Format (w x h x d) mm (*in.*)		23.6 x 90 x 70 *(0.93 x 3.54 x 2.76)*			
Mounting		Mounting on ⊔ symmetrical rail or panel with specific mounting kit TMAM2			
	Channel connection:				
Type of module	via removable screw terminal blocks at intervals of 5.08 *(0.2 in.)*	**TM3AI2H**	–	–	–
	via removable screw terminal blocks at intervals of 3.81 *(0.15 in.)*	–	**TM3AI4**	**TM3TI4**	**TM3AI8**
	via removable spring terminal blocks at intervals of 5.08 *(0.2 in.)*	**TM3AI2HG**	–	–	–
	via removable spring terminal blocks at intervals of 3.81 *(0.15 in.)*	–	**TM3AI4G**	**TM3TI4G**	**TM3AI8G**

Expansion modules

Modicon TM3 digital I/O modules - Selectrion Guide

Applications	Type of expansion module	Analog inputs	Analog outputs		Analog inputs/outputs	
	Compatibility					
						
Inputs	Number	**8 inputs**	–	–	**2 inputs**	**4 inputs**
	Type	**Temperature**	–	–	**Temperature or voltage/current**	**Voltage/current**
	Range	Thermocouples (J, K, R, S, B, T, N, E, C) NTC and PTC thermistors	–	–	Thermocouples (J, K, R, S, B, T, N, E, C) Temperature probes (RTDs): (Ni100, Ni1000, PT100, PT1000) - 10…+ 10 VDC, 0…+ 10 VDC / 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA
	Resolution	16 bits or 15 bits + sign	–	–	16 bits or 15 bits + sign	12 bits or 11 bits + sign
	Read time	100 ms per channel	–	–	100 ms per channel for temperature signals. 1 or 10 ms (configurable) for voltage/ current signals	1 or 10 ms (configurable)
Outputs	Number	–	**2 outputs**	**4 outputs**	**1 output**	**2 outputs**
	Type	–	**Voltage/current**	**Voltage/current**	**Voltage/current**	**Voltage/current**
	Range	–	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA
	Resolution	–	12 bits or 11 bits + sign	12 bits or 11 bits + sign	12 bits or 11 bits + sign	12 bits or 11 bits + sign
	Transfer time	–	1 or 10 ms (configurable)	1 or 10 ms (configurable)	1 or 10 ms (configurable)	1 or 10 ms (configurable)
Supply voltage		With a 24 V ⎓ external power supply				
Format (w x h x d) mm (*in.*)		23.6 x 90 x 70 *(0.93 x 3.54 x 2.76)*				
Mounting		Mounting on ⊥ symmetrical rail or panel with specific mounting kit TMAM2				
	Channel connection:					
Type of module	via removable screw terminal blocks at intervals of 5.08 *(0.2 in.)*	–	**TM3AQ2**	**TM3AQ4**	**TM3TM3**	–
	via removable screw terminal blocks at intervals of 3.81 *(0.15 in.)*	**TM3TI8T**	–	–	–	**TM3AM6**
	via removable spring terminal blocks at intervals of 5.08 *(0.2 in.)*	–	**TM3AQ2G**	**TM3AQ4G**	**TM3TM3G**	–
	via removable spring terminal blocks at intervals of 3.81 *(0.15 in.)*	**TM3TI8TG**	–	–	–	**TM3AM6G**

Expansion modules

Modicon TM3 digital I/O modules - References



TM3AI2H *TM3AI4*



TM3TI4 *TM3AI8*



TM3TI8T



TM3AQ2 *TM3AQ4*



TM3TM3 *TM3AM6*



TM200RSRCEMC



TM2XMTGB

References

Modicon TM3 analog I/O modules

Number and type of channels	Input range	Output range	Resolution	Term. block for input conn. *(1)* Thread *(mm /in.)*	Reference	Price per unit
2 voltage/current inputs	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	–	16 bits or 15 bits + sign	Screw 5.08/*0.2*	**TM3AI2H**	
				Spring 5.08/*0.2*	**TM3AI2HG**	
4 voltage/current inputs	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	–	12 bits or 11 bits + sign	Screw 3.81/*0.15*	**TM3AI4**	
				Spring 3.81/*0.15*	**TM3AI4G**	
4 temperature or voltage/ current inputs *(2)*	□ Thermocouples *(3)* (J, K, R, S, B, T, N, E, C) □ Temperature probes (RTD) (Ni100, Ni1000, PT100, PT1000) □ - 10…+ 10 VDC, 0…+ 10 VDC) /0…20 mA, 4…20 mA)	–	16 bits or 15 bits + sign	Screw 3.81/*0.15*	**TM3TI4**	
				Spring 3.81/*0.15*	**TM3TI4G**	
8 voltage/current inputs	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	–	12 bits or 11 bits + sign	Screw 3.81/*0.15*	**TM3AI8**	
				Spring 3.81/*0.15*	**TM3AI8G**	
8 temperature inputs	□ Thermocouples *(3)* (J, K, R, S, B, T, N, E, C) □ NTC and PTC thermistors	–	16 bits or 15 bits + sign	Screw 3.81/*0.15*	**TM3TI8T**	
				Spring 3.81/*0.15*	**TM3TI8TG**	

Modicon TM3 analog output modules

2 voltage/current outputs	–	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	12 bits or 11 bits + sign	Screw 5.08/*0.2*	**TM3AQ2**	
				Spring 5.08/*0.2*	**TM3AQ2G**	
4 **voltage/current outputs**	–	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	12 bits or 11 bits + sign	Screw 5.08/*0.2*	**TM3AQ4**	
				Spring 5.08/*0.2*	**TM3AQ4G**	

Modicon TM3 analog mixed I/O modules

2 temperature or voltage/ current inputs *(2)* **and 1 voltage/current output**	□ Thermocouples *(3)* (J, K, R, S, B, T, N, E, C) □ Temperature probes (RTDs) (Ni100, Ni1000, PT100, PT1000) □ - 10…+ 10 VDC, 0…+ 10 VDC) /0…20 mA, 4…20 mA)	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	16 bits or 15 bits + sign (for E) 12 bits or 11 bits + sign (for S)	Screw 5.08/*0.2*	**TM3TM3**	
				Spring 5.08/*0.2*	**TM3TM3G**	
4 voltage/current inputs and 2 voltage/current outputs	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	- 10…+ 10 VDC, 0…+ 10 VDC/ 0…20 mA, 4…20 mA	12 bits or 11 bits + sign (for I and O)	Screw 3.81/*0.15*	**TM3AM6**	
				Spring 3.81/*0.15*	**TM3AM6G**	

Separate parts

Designation	Description	Unit reference	Price per unit
Grounding plate	Support equipped with 10 male Faston connectors for connecting the cable shielding (via 6.35 mm connectors, not supplied) and the functional grounds (FG)	**TM2XMTGB**	
Shielding connection clamps Sold in lots of 25	Assembly and grounding of the cable shielding. Pack of 25 clamps including 20 for Ø 4.8 mm cable *(0.189 in.)* and 5 for Ø 7.9 mm *(0.311 in.) cable*	**TM200RSRCEMC**	
Mounting kit Sold in lots of 10	For mounting the analog I/O modules on a plate or panel	**TMAM2**	
Set of I/O terminal blocks	4 terminal blocks with 10 pins and 4 terminal blocks with 11 removable screw terminal pins for TM3AI4, TM3TI4, TM3AI8, TM3TI8, TM3AM6 modules	**TMAT2MSET**	
	4 terminal blocks with 10 pins and 4 terminal blocks with 11 removable spring terminal pins for TM3AI4G, TM3TI4G, TM3AI8G, TM3TI8G, TM3AM6G modules	**TMAT2MSETG**	

(1) Removable screw terminal blocks supplied with each module.
(2) Each input can be configured independently for temperature or voltage/current.
(3) Only use isolated thermocouples.

Modicon M221

Controllers for small machines











Type	Inputs	Outputs	Analog Inputs	Integrated Ethernet port (RJ45)	Integrated Serial Link 1 (RJ45)	Integrated Serial Link 1 (RJ45)	Reference	Price per unit
M221 Logic Controllers								
• Power supply: 100-240 VAC – 24 Vdc inputs, inc. 4 high-speed inputs								
16 inputs/outputs								
9 sink/source		7 relay outputs	2 x 0…10 V inputs	-	1	-	TM221C16R	
				1	1	-	TM221CE16R	
24 inputs/outputs								
14 sink/source		10 relay outputs	2 x 0…10 V inputs	-	1	-	TM221C24R	
				1	1	-	TM221CE24R	
40 inputs/outputs								
24 sink/source		16 relay outputs	2 x 0…10 V inputs	-	1	-	TM221C40R	
				1	1	-	TM221CE40R	
• Power supply: 24 VDC – inputs, inc. 4 high-speed inputs								
16 inputs/outputs								
9 sink/source		7 source transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C16T	
				1	1	-	TM221CE16T	
24 inputs/outputs								
14 sink/source		10 source transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C24T	
				1	1	-	TM221CE24T	
40 inputs/outputs								
24 sink/source		16 source transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C40T	
				1	1	-	TM221CE40T	
16 inputs/outputs								
9 sink/source		7 sink transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C16U	
				1	1	-	TM221CE16U	
24 inputs/outputs								
14 sink/source		10 sink transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C24U	
				1	1	-	TM221CE24U	
40 inputs/outputs								
24 sink/source		16 sink transistor outputs, inc. 4 high-speed outputs	2 x 0…10 V inputs	-	1	-	TM221C40U	
				1	1	-	TM221CE40U	
M221 Logic Book Controllers								
• Power supply: 24 VDC – inputs, inc. 4 high-speed inputs								
16 inputs/outputs								
8 sink/source		8 relay outputs	2 x 0…10 V inputs	-	1	1	TM221M16R	
				-	1	1	TM221M16RG	
				1	1	-	TM221ME16R	
				1	1	-	TM221ME16RG	
		16 source transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	1	TM221M16T	
				-	1	1	TM221M16TG	
				1	1	-	TM221ME16T	
				1	1	-	TM221ME16TG	
32 inputs/outputs								
16 sink/source		16 source transistor outputs, inc. 2 high-speed outputs	2 x 0…10 V inputs	-	1	1	TM221M32TK	
				1	1	1	TM221ME32TK	

Connection Cable	Use	Length	Reference	Price per unit
Programming Cordest	From the PC USB port to the USB mini-B port on M221 and M221 Book controllers	3 m / 0.98 ft	BMXXCAUSBH018	

Expansion modules

Modicon M221 Expansion I/O modules - TM3 Modules



Type	Input type	Terminal Block	Reference	Price per unit
Modicon TM3 digital input modules				
8 inputs	sink/source 24 Vdc	screw	TM3DI8	
		spring	TM3DI8G	
	120VAC	screw	TM3DI8A	
16 inputs	sink/source 24 Vdc	screw	TM3DI16	
		spring	TM3DI16G	
		HE10 connector	TM3DI16K	
32 inputs	sink/source 24 Vdc	HE10 connector	TM3DI32K	



Type	Output type	Output Current	Terminal Block	Reference	Price per unit
Modicon TM3 digital output modules					
8 outputs	Relay	2A	screw	TM3DQ8R	
			spring	TM3DQ8RG	
	Transistor source	0.5A	screw	TM3DQ8T	
			spring	TM3DQ8TG	
	Transistor sink	0.5A	screw	TM3DQ8U	
			spring	TM3DQ8UG	
16 outputs	Relay	2A	screw	TM3DQ16R	
			spring	TM3DQ16RG	
	Transistor source	0.5A	screw	TM3DQ16T	
			spring	TM3DQ16TG	
		0.1A	HE10 connector	TM3DQ16TK	
	Transistor sink	0.5A	screw	TM3DQ16U	
			spring	TM3DQ16UG	
		0.1A	HE10 connector	TM3DQ16UK	
32 outputs	Transistor source	0.1A	HE10 connector	TM3DQ32TK	
	Transistor sink	0.1A	HE10 connector	TM3DQ32UK	



Type	Number and type	Output Current	Terminal Block	Reference	Price per unit
Modicon TM3 digital mixed I/O modules					
8 inputs / outputs	4 sink/source	4 relay outputs,	screw	TM3DM8R	
	24 VDC inputs	2 A	spring	TM3DM8RG	
24 inputs / outputs	16 sink/source	8 relay outputs,	screw	TM3DM24R	
	24 VDC inputs	2 A	spring	TM3DM24RG	



Connection Cable	Use	Reference	Price per unit
Programming Cordest	From the PC USB port to the USB mini-B port on M221 and M221 Book controllers	BMXXCAUSBH018	





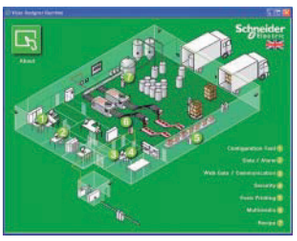
HMI - Human Machine Interface

Human Machine interfaces

Magelis Easy GXU Essential panels



7" Wide and 10" Wide Magelis Easy GXU touch screen terminals



Example of project configuration

Presentation and applications

The range of Magelis™ Easy GXU touch screen terminals has been designed for manufacturers of simple machines and is dedicated to the following fields and types of machine:

- ■ Textile
  - □ blowing and carding machines
  - □ winding and twisting machines
  - □ dyeing and finishing machines
  - □ etc.
- ■ Packaging
  - □ vertical and horizontal packing
  - □ filling machine
  - □ labelling machine
  - □ etc.
- ■ HVAC & pumping
  - □ air compressor
  - □ water pumping
  - □ etc.
- ■ Miscellaneous activity sectors
  - □ machine tools (grinder, saw, etc.)
  - □ plastic and rubber (extruding machine, etc.)
  - □ printing (stamping and folding machines, etc.)
  - □ construction machines
  - □ etc.

This range of terminals consists of 4 models with 2 sizes of color TFT screen:

- ■ 7" Wide (HMIGXU3500 and HMIGXU3512)
- ■ 10" Wide (HMIGXU5500 and HMIGXU5512)

Operation

Magelis Easy GXU touch screen terminals are designed to fit for the essential needs of information and communication technologies, which, depending on the model, include:

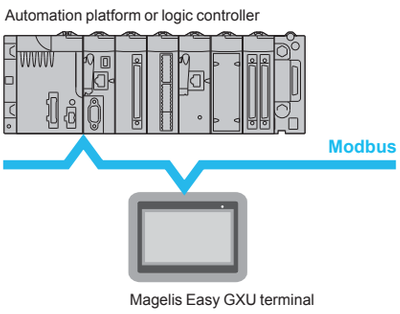
- ■ Essential level of communication (Serial multilink, USB downloading port)
- ■ High level of communication (Embedded Ethernet, multilink) *(1)*
- ■ External data storage (on a USB memory stick) for storing production data and backing up applications *(1)*
- ■ Management of peripheral equipment: printers, barcode readers, etc. *(1)*

These terminals offer an excellent level of technical performance and are designed for use mainly by OEM customers.

Configuration

Magelis Easy GXU touch screen terminals are configured using Vijeo Designer . Basic software in Windows XP Professional, Windows 7 (Service Pack 3) and Windows 8.1 (32-bit and 64-bit) environments. This simplified configuration software boasts an intuitive user interface with many configurable windows, enabling projects to be developed quickly and easily.

Communication



Magelis Easy GXU touch screen terminals communicate with our Modicon Easy M100/200 PLCs via one or two integrated serial links, using communication protocols:

- ■ Schneider Electric (Modbus)
- ■ Third-party: Mitsubishi Electric, Omron, and Siemens

(1) Except HMIGXU3500 and HMIGXU5500.

Magelis Easy GXU touch screen terminals: an optimum investment for communication with simple machines

A user-oriented range of products

The Magelis Easy GXU range of touch screen panels is designed to provide just the right level of performance for communication with simple machines: non-critical functions have been reduced so as to offer easy-to-use products with the correct level of quality at an affordable cost.

Fit for purpose

- The terminals feature the usual key-core characteristics (TFT color screens, USB connection, Ethernet port, etc.)
- Magelis Easy GXU terminals have a compact design: the panels are no more than 38 mm/*1.5 in.* thick.
- These terminals have a reserved space for the communication cable wiring.

Easy throughout the whole life cycle

- Easy to install using anti-drop hooks and screw fixings for one-handed installation
- Easy to set up and use thanks to a simplified and intuitive programming software (Vijeo Designer Basic) and an illustrated online help for self-guided training
- Easy to connect to our range of Modicon Easy M100/M200 logic controllers
- Easy to connect thanks to an embedded USB stick (no accessory needed)
- Easy to maintain with a replaceable battery for RTC *(1)* and a self-diagnosis tool

Robustness

- Able to adapt to non-standard wiring environments thanks to an embedded isolated power supply and enhanced integrated circuit protection for the serial port
- Robust design for harsh environments:
  - a small vent hole prevents ingress of resist to splashing water and conductive dust
  - PCBA coating helps withstand high humidiy and polluted environments.

Widely available everywhere

- Fast delivery through a large distribution network
- Fast access to information and support through Partner Relationship Management tool and dedicated network of engineers

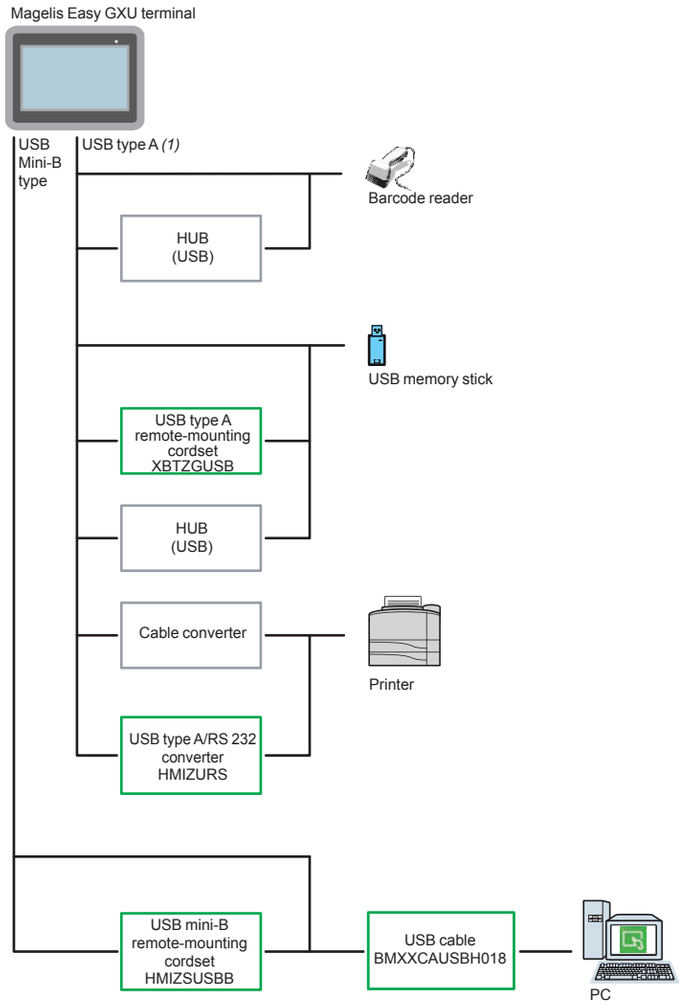
(1) Battery for RTC (Real Time Clock): only for Magelis GXU universal touch screen terminals.

Functions

Magelis Easy GXU touch screen terminals offer the following functions:
- Display of animated mimics with 8 types of animation (pressing the touch panel, color changes, filling, movement, rotation, size, visibility and value display)
- Control, modification of numeric and alphanumeric values
- Display of date and time
- Real-time curves and trend curves with log
- Alarm display, alarm log and management of alarm groups
- Multi-window management
- Page calls initiated by the operator
- Multilingual application management (10 languages simultaneously)
- Recipe management
- Data processing via JavaScript
- Application and logs stored on external application memory card in USB stick format *(1)*
- Management of printer and barcode reader

Operating modes for Magelis GXU touch screen terminals

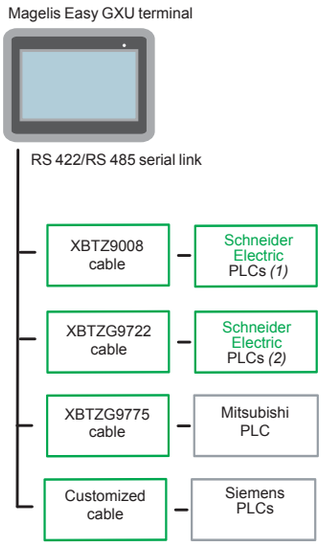
Edit mode



(1) Except HMIGXU3500 and HMIGXU5500.

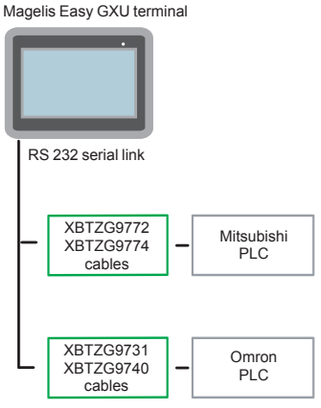
Operating modes for Magelis GXU touch screen terminals (continued)

Communication with RS 422/RS 485 serial link mode



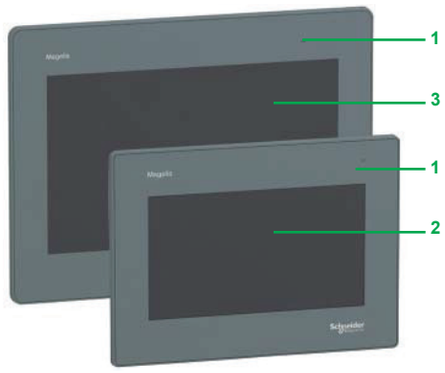
Examples of connection to RS 422/RS 485 serial port (3)

Communication with RS 232C serial link mode

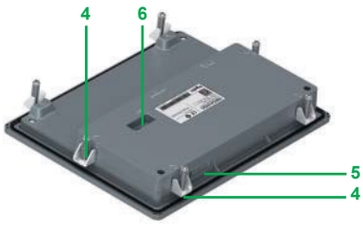


Examples of connection to RS 232C (3)

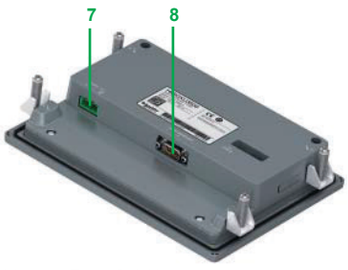
(1) M221/M241/M251/M218/M238/M258 logic controllers.
(2) M100/M200 logic controllers. For all other products, consult your Customer Care Centre.
(3) Non-exhaustive examples; consult your Customer Care Centre for more information.



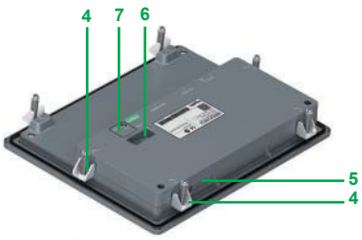
*HMIGXU35*pp *(common front view)*
*HMIGXU55*pp *(common front view)*



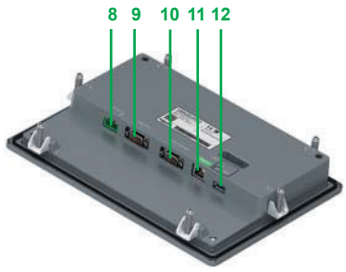
Magelis Easy GXU basic terminals (rear view)



Magelis Easy GXU basic terminals (bottom view)



Magelis Easy GXU universal terminals (rear view)



Magelis Easy GXU universal terminals (view of underside)

Magelis Easy GXU basic touch screen terminals

The basic touch screen terminals offer the following features:

On the front panel

1 An LED on/off indicator.
2 A 7" Wide color touch screen for HMIGXU3500.
3 A 10" Wide color touch screen for HMIGXU5500.

On the rear panel

4 Screw fixings supplied with the terminal:
- 4 fixing points for HMIGXU3500
- 6 fixing points for HMIGXU5500

5 A slide-open compartment containing a replaceable battery to power the embedded real-time clock *(1)*.
6 A USB mini-B port.

On the underside

7 A 24 V ⎓ power supply connector supplied with the terminal.
8 A 9-way male SUB-D connector for RS 422/RS 485 serial link (COM1 port).

Magelis Easy GXU universal touch screen terminals

The universal touch screen terminals offer the following features:

On the front panel

1 An LED on/off indicator.
2 A 7" Wide color touch screen for HMIGXU3512.
3 A 10" Wide color touch screen for HMIGXU5512.

On the rear panel

4 Screw fixings supplied with the terminal:
- 4 fixing points for HMIGXU3512
- 6 fixing points for HMIGXU5512

5 A slide-open compartment containing a replaceable battery to power the embedded real-time clock *(1)*.
6 A USB mini-B port.
7 A USB type A stick.

On the underside

8 A 24 V ⎓ power supply connector supplied with the terminal.
9 A 9-way male SUB-D connector for RS 232C serial link (COM1 port).
10 A 9-way male SUB-D connector for RS 422/RS 485 serial link (COM2 port).
11 An Ethernet port, 10/100 Base-Tx type.
12 A USB type A port.

(1) Replace battery only with identical type: BR2032. Replacement with another type of battery may cause a fire or explosion.

Human Machine interfaces

Magelis Easy GXU Essential panels
Universal touch screen terminals
Software and spare parts

PF143700



HMIGXU3500

PF143707



HMIGXU5512



Vijeo Designer Basic



HMIZGFIX3

Magelis Easy GXU basic touch screen terminals *(1) (2)*

Screen size and type	Number of ports	Memory capacity		Reference	Weight kg/ *lb*
		For application	For backup		
7” wide, color TFT screen	1 COM1 (RS 422/485) 1 USB mini-B	32 MB	128 kB	**HMIGXU3500**	0.550/ *1.213*
10” wide, color TFT screen	1 COM1 (RS 422/485) 1 USB mini-B	32 MB	128 kB	**HMIGXU5500**	1.050/ *2.315*

Magelis Easy GXU universal touch screen terminals *(1) (2)*

Screen size and type	Number of ports	Memory capacity		Reference	Weight kg/ *lb*
		For application	For backup		
7” wide, color TFT screen	1 COM1 (RS 232C) 1 COM2 (RS 422/485) 1 USB mini-B 1 USB A 1 10/100 Base-Tx	48 MB	128 kB	**HMIGXU3512**	0.560/ *1.235*
10” wide, color TFT screen	1 COM1 (RS 232C) 1 COM2 (RS 422/485) 1 USB mini-B 1 USB A 1 10/100 Base-Tx	48 MB	128 kB	**HMIGXU5512**	1.060/ *2.337*

Configuration software

Description	Used for	Reference
Vijeo Designer Basic *(4)*	Magelis Easy GXU models	*(3)*

Spare parts

Description	Used for	Sold in lots of	Reference	Weight kg/ *lb*
Set of fixing screws	Magelis Easy GXU models	**24**	**HMIZGFIX3**	–
Power supply connector	Magelis Easy GXU models	**4**	**HMIZGPWS2**	–

(1) Terminals supplied with fixing screws, power supply connector and instruction sheet. Setup documentation for Magelis Easy GXU terminals is included in electronic format with the Vijeo Designer Basic configuration software.
(2) Comprehensive information relating to Magelis Easy GXU terminals is available on our website.
(3) To download this software, visit our web site www.schneider-electric.com.
(4) Requires a software version u 1.0 Service Pack 2. Cable for transferring application from PC to Magelis Easy GXU terminal (BMX XCA USBH018), to be ordered separately (see our website www.schneider-electric.com).

Human Machine interfaces

Magelis Easy GXU Essential panels
Connection accessories
Cables for Schneider Electric products



XBTZGUSB



HMIZSUSBB

Connection accessories

Designation	Description	Length m/ *ft*	Reference	Weight kg/ *lb*
USB cable for PC connection (USB type A/USB mini-B)	Enables connection of a PC (USB type A port) to Magelis GXU terminals (USB mini-B port, all models) in order to transfer applications developed with Vijeo Designer Limited Edition.	1.8/ *5.91*	**BMXXCAUSBH018**	0.230/ *0.507*
USB type A port remote-mounting cordset	Enables the USB type A port to be located remotely on HMIGXU3512 and HMIGXU5512 terminals on a panel or cabinet door while providing IP 65 degree of protection (Ø 21 mm/0.83 in. fixing device).	1/ *3.28*	**XBTZGUSB**	0.507/ *1.118*
USB mini-B port remote-mounting cordset	Enables the USB mini-B port to be located remotely on Magelis GXU terminals (all models) on a panel or cabinet door while providing IP 65 degree of protection (Ø 21 mm/0.83 in. fixing device).	1/ *3.28*	**HMIZSUSBB**	0.100/ *0.220*
USB type A port/9-way SUB-D converter for serial printer	Enables connection of an RS 232 serial link printer (9-way SUB-D) to the USB type A port of HMIGXU 3512 and HMI GXU 5512 terminals.	–	**HMIZURS**	–

Cables for connecting Magelis Easy GXU terminals to Schneider Electric products

Type of automation product	Type of connector (automation product end)	Protocol	Type of Magelis GXU terminal	Physical link (terminal port)	Length m/ *ft*	Reference	Weight kg/ *lb*
Twido	Terminal port, 8-way female mini-DIN	Modbus	All models	RS 485	2.5/ *8.20*	**XBTZ9018**	–
Modicon M340 **Modicon M218** **Modicon M238** **Modicon M258** **Modicon M221** **Modicon M241** **Modicon M251**	RJ45	Modbus	All models	RS 485	2.5/ *8.20*	**XBTZ9008**	–
Modicon Easy M100 **Modicon Easy M200**	Terminal block	–	All models	RS 485	2.5/ *8.20*	**XBTZG9722**	–
TeSys U/T starters **Altivar drives,** **Altistart starters,** **Lexium motion control,** **Preventa XPS MC**	RJ45	Modbus	All models	RS 485	2.5/ *8.20*	**XBTZ9008**	–

Human Machine interfaces

Magelis Easy GXU Essential panels
Cables for third-party PLCs
Connection via Modbus serial link



XBTZG9772



XBTZG9731

Cables and adapters for connecting Magelis GXU terminals to third-party PLCs

Description *Driver used*	Type of Magelis GXU terminal	Type of connector (fitted to cable, excluding adapter)	Physical link (terminal port)	Length m/ *ft*	Reference	Weight kg/ *lb*
Mitsubishi, Melsec PLCs						
Connection cable, ***Q Link (SIO)***	HMIGXU3512 and HMIGXU5512 only	9-way SUB-D/9-way SUB-D	RS 232C	5/ *16.40*	**XBTZG9772**	–
Connection cable, ***Q CPU (SIO)***	HMIGXU3512 and HMIGXU5512 only	9-way SUB-D/mini-DIN	RS 232C	5/ *16.40*	**XBTZG9774**	–
Connection cable, ***FX (CPU)***	All models	9-way SUB-D/mini-DIN	RS 422	5/ *16.40*	**XBTZG9775**	–
Omron, Sysmac PLCs						
Connection cables, ***Link (SIO)***	HMIGXU3512 and HMIGXU5512 only	9-way SUB-D/25-way SUB-D	RS 232C	5/ *16.40*	**XBTZG9731**	–
	HMIGXU3512 and HMIGXU5512 only	9-way SUB-D/9-way SUB-D	RS 232C	5/ *16.40*	**XBTZG9740**	–
Connection cable, ***FINS (SIO)***	HMIGXU3512 and HMIGXU5512 only	9-way SUB-D/9-way SUB-D	RS 232C	5/ *16.40*	**XBTZG9740**	–
Siemens, Simatic PLCs						
Connection cables, ***MPI port,*** ***S7 200*** ***S7 300/400***	All models	9-way SUB-D/9-way SUB-D	RS 485	–	*(1)*	–
Customizable cables						
Universal cable, RS 422	All models	9-way SUB-D/flying leads at other end	RS 422	2.5/ *8.20*	**XBTZG9722**	–



LU9GC3



TWDXCAISO

Connecting Magelis GXU terminals via Modbus serial link

Type of bus/ network	Tap-off units	Connector (tap-off unit end)	Type of Magelis GXU terminal	Length m/ *ft*	Reference	Weight kg/ *lb*
Modbus serial link	8-port Modbus splitter box **LU9GC3** 2-port tap junction **TWDXCAISO** **TWDXCAT3RJ**	RJ45	All models	2.5/ *8.20*	**XBTZ9008**	–

(1) Customized cable.



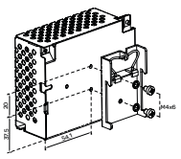


Power Supplies

Switch Mode Power Supplies

ABL2

Switch mode power supplies

	Function improvement	Customer benefits
Protection cover on terminal block	 ☑ ABL2 power supply products are equipped with plastic clip-on protective cover for terminal block	☑ Prevent terminal blocks from accidental contact to lead to electric shock when power-on, effectively enhancing safety
Auto-recovery protection	 ☑ Short-circuit/overload protection modes of all products are updated to auto-recovery mode	☑ Meet the demands of OEM customers for overload and short-circuit protection mode in a broader way
Key hold of housing	 ☑ Mounting holes for product's housing are all key holds ☑ The position of mounting holes of housing slightly varies from that of previous ABL2 versions, please see dimensional drawing for details	☑ Effectively address the power-on short circuit risks resulting from varying length of mounting screws on application spot

ABL2

Switch mode power supplies

> Leading technology

- ABL2 range power supply products are designed with the third generation of technology
- New technology ensures that products are smaller and reliable in performance, reduce downtime

> Compact

- ABL2 range power supply products possess a small mounting size, for cabinet space savings
- For the same power options, the product's volume is 80% of that of like product

> Core performance

- ABL2 range power supply products offer 7 power options
- Output voltage 24VDC (+/-10% adjustable)

35W/50W/
100W/150W

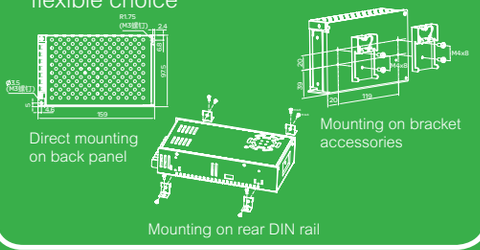
Mainstream products in the market

35W/50W/100W/150W
200W/250W/350W

Schneider Electric ABL2

> Easy-to-install

- 3 types of mounting are available for flexible choice



ABL2

Switch mode power supplies

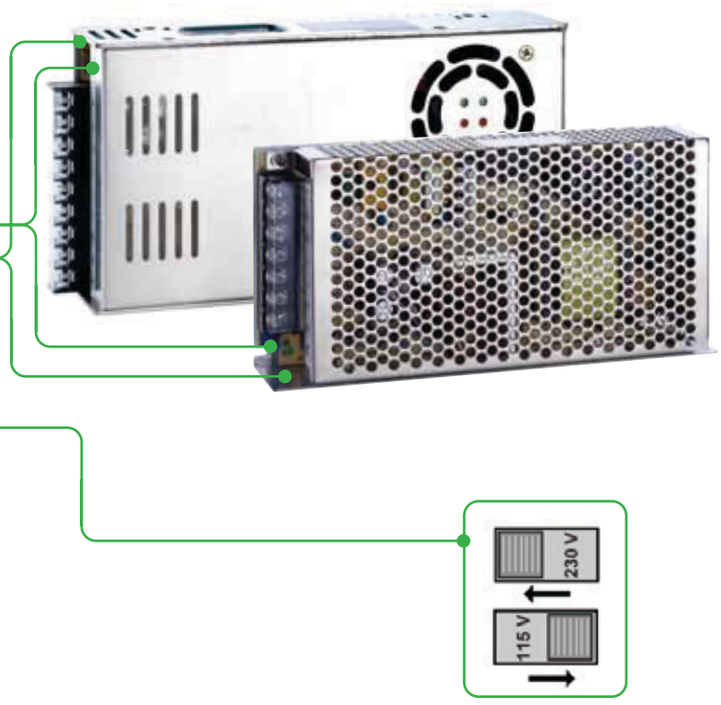
- 100...240 VAC input, single-phase
- 24VDC output
- 7 power options in the range of 35-350W.

- Full range in compliance with EMC standard
- CE and RoHS certified

- Output voltage, +/-10% adjustable
- Green LED indicator at output terminal

- The product is equipped with plastic protective cover for terminal block as standard
- Mistake-proof mounting holes

- 115/230V AC input voltage selection
  Automatic adaptation for 35/50W models
  Manual selection by switch for 100-350W models



100% RoHS compliant

Energy-efficient and eco-friendly

ABL2

Switch mode power supplies



Presentation

With the third generation of technology for switch mode power supply design, compact size and reliable performance, the ABL2REM range switch mode power supplies are specially designed to provide the d.c. voltage necessary for electrical equipment operating on a safety low voltage. The ABL2REM range power supplies are able to meet the needs encountered in standard commercial machines and conform to world-wide standard. As machine components, they are easy to install; 3 mounting options can fit various application requirements.

ABL2REM range switch mode power supplies are totally electronic. They provide the following benefits:

- Compact and space-saving mounting (35W/50W/100W/150W)
- A wide input voltage range from AC88 to 264V and DC110 to 370V (different power ranges vary, see product data sheet for details)
- A high degree of output voltage stability, adjustable with potentiometer
- Conformity to standard EN55022 class B
- Overload protection, short-circuit protection, over-voltage protection, thermal overload protection (thermal overload protection on 200-350W only)
- Identical standard rail mounting accessories for each reference

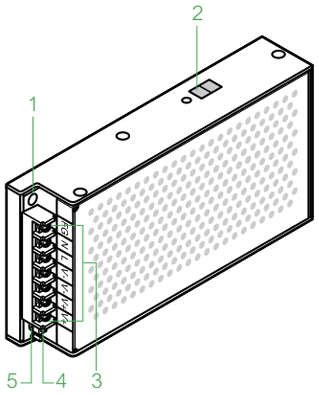
ABL2REM switch mode power supplies provide 24V DC output and are split into 7 power options:
DC 24V 35W, 50W, 100W, 150W, 200W, 250W and 350W

Electromagnetic compatibility

Levels of conducted and radiated emissions are defined in standards EN 55011 and EN 55022KH.
The ABL2REM range switch mode power supplies are class B that is the most rigorous class

Short-circuit protection

ABL2 power supplies are equipped with electronic and thermal overload protection. This protection resets itself automatically on elimination of the fault, which avoids having to take any action or change a fuse.



Description

ABL2REM switch mode power supplies comprise:

1 Two fixing holes for M3 screws.
2 A 115/230V input voltage selector (on 100W, 150W, 200W, 250W and 350W versions only).
3 A 4 mm^2 screw clamp terminal block equipped with plastic protective cover as standard for connection of the AC input voltage and DC output voltage.
4 A green LED indicating status of the d.c. output voltage.
5 An output voltage adjustment potentiometer (± 10 %).

ABL2

Switch mode power supplies

Technical specifications

Power supply reference				ABL2REM						
				24015H	24020H	24045H	24065H	24085H	24100H	24150H
Product certification/marker				CE, RoHS						
Conformity to standard input circuit	Safety standard			IEC/EN60950 compliant						
	General EMC			EN 61000-6-2,EN 61000-4-2,3,4,5,6,8,11,EN 55022 Class B						
	Low frequency harmonic current			-						
Input circuit										
LED indicating				-						
Nominal input value	Rated voltage		V	AC 100...240		AC 100...120 / 200...240				
	Limiting voltage	AC	V	88...264		88...132 / 180...264				
		DC compatible	V	110...370 (1)		255...370 (1)				
	Input current	U_{In} = 230 VAC	A	0.4	0.8	1	1.5	2.5		3.5
		U_{In} = 115 VAC	A	0.8	1.3	2	3	5		7
	Tolerance frequency		Hz	47...63						
	Max. input impact current		A	30		35		50		
	Efficiency at nominal load			> 83 %						
Output										
LED indicating				Green LED						
Nominal output value	Voltage (U_{Out})		V	DC 24						
	Current		A	1.5	2.2	4.5	6.5	8.3	10.5	14.6
	Power		W	35	50	100	150	200	250	350
Accuracy	Output voltage regulation			± 10%						
	Voltage tolerance			±1%						
	Ripple and noise		mV	< 100 (peak-peak value)						
Setup time			ms	500 (80 at load)						
Hold up time			ms	> 20 (10 at load)						
Protection	Short circuit			Hiccup decrease pattern, non-permanent shutoff						
	Overload			Hiccup decrease pattern, non-permanent shutoff (at rating overload of 120 to 160%)						
	Overvoltage			Shut off permanently						
	Thermal overload			N/A				Shut off permanently		
Shut off permanently										
Connection	Input		mm^2	(2+ground wire) x 4 (12AWG)						
	Output		mm^2	2 x 4 (12 AWG)		4 x 4 (12 AWG)				
Mounting				Panel mounting or rail mounting						
Operation position				Vertical or horizontal, refer to Page 08						
Connection	In series			Possible (up to 2), refer to Page 08						
	In parallel			Not allowed						
Environment	Temperature	Operating	°C	-20 to +70 (start derating since 50°C), refer to Page 08						
		Storage	°C	- 20...+ 85						
	Humidity	Operating	RH	20...90 %						
		Storage	RH	10...95 %						
	Temperature factor			± 0.03%/ °C (0-50°C)						
	Vibration			Conformity to standard EN61131-2						
Mean Time Between Failures (MTBF) at 25°C				> 350 khrs ,Mil-HDBK-217F						
Insulation voltage				I/ P-O/P:1.5 KVAC,I/P-FG:1.5KVAC,O/P-FG:0.5KVAC						
Insulation resistance				I/P-O/P,I/P-FG,O/P-FG:100 M ohms/500VDC						
Mechanical specifications										
Connection	Input		mm^2	(2+ground wire) x 4 (12AWG)						
	Output		mm^2	2 x 4 (12 AWG)		4 x 4 (12 AWG)				
Mounting				Panel mounting or rail mounting						
Dimensions (L*W*H)			mm	105*81*36	105*97*36	164*97*38	205*98*42	215*115*50		

(1) Not indicated on the product.

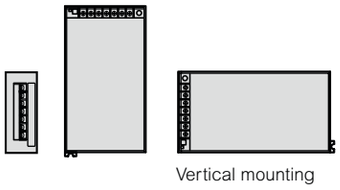
Output Specifications

Derating

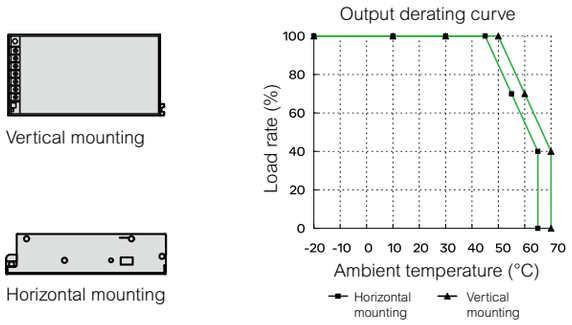
Ambient temperature is a decisive factor restricting electronic power supplies to continuously supply power. In case electronic components have too high ambient temperature, their life will be significantly shortened.

The rated ambient temperature of ABL2REM range power supplies is +45°C (horizontal mounting) or +50°C (terminal to the left, vent hole upwards, vertical mounting). There is a derating when such temperatures rise until they reach 65°C (horizontal) and 70°C (vertical) at the maximum respectively.

The following curve gives the relation between output power (related to rated power) continuously supplied by power supplies and ambient temperature.



Vertical mounting



Horizontal mounting

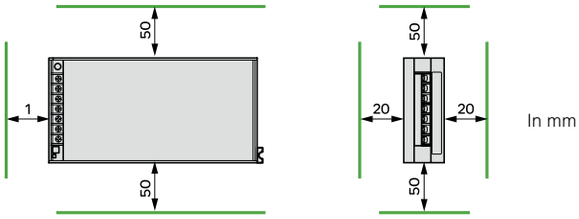
Extreme operating conditions

Under extreme operating conditions, derating should be considered:

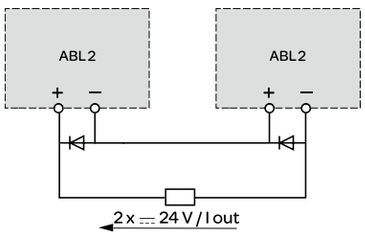
- Heavy duty operation (output current should be close to rated current for a long time, while having higher ambient temperature)
- Output voltage higher than 24V

General rules to be followed	
Heavy duty operation	Refer to Derating Curve Chart
Rising output voltage	Nominal power is constant. The rise of output voltage means it is a must to offer reduced current.

In any case, there must be enough air flow convection around the power supply to ensure good cooling, and there must be space of 50mm above and under it as well as space of 20mm at its side. Exhaust outlets for 200W/250W/350W models should not be obstructed.



In series





ABL 2REM24020H

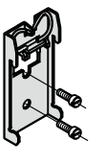
Reference

ABL2 switch mode power supplies: ABL 2REM

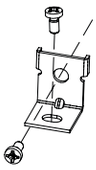
Input voltage 47…63Hz	Output voltage	Nominal power	Nominal current	Auto- protect reset	Voltage switching	Reference
V	⎓ V	W	A			
AC 100...240 (1)	24	35	1.5	Automatic	Automatic	**ABL 2REM24015H**
single-phase wide range		50	2.2	Automatic	Automatic	**ABL 2REM24020H**
AC 100...120	24	100	4.5	Automatic	Manual	**ABL 2REM24045H**
AC 200...240 (2)		150	6.5	Automatic	Manual	**ABL 2REM24065H**
single-phase		200	8.3	Automatic	Manual	**ABL 2REM24085H**
		250	10.5	Automatic	Manual	**ABL2REM24100H**
		350	14.6	Automatic	Manual	**ABL 2REM24150H**

(1) Compatible input voltages from DC 110…370 V not indicated on the product

(2) Compatible input voltages from DC 255…370 V not indicated on the product



ABL 2A02



ABL 2A01

Mounting accessories

Description	For power supplies	Order in multiples of	Unit reference	Weight kg
Clip-on mounting plate for ⊥⌐ 35 mm mounting rail	ABL2REM24015H/020H; the plate mounting on ⊥⌐ requires one mounting plate ABL2REM24045H/065H/085H/100H/150H: the plate mounting on ⊥⌐ requires 2 mounting plates	5	**ABL2A02**	0.035
Brackets for panel mounting	ABL2REM24085H/100H/150H: each product requires four additional lugs; (note: mounting screws are not equipped as standard. It is recommended to use M4*6mm or M4*8 screws	40	**ABL 2A01**	0.001

Reference description

ABL2REM — Range name:
- ABL2REM

24 — Output voltage:
- 24V DC

045 — Output current/ power:
- 015 (1.5A/35W)
- 020 (2.2A/50W)
- 045 (4.5A/100W)
- 065 (6.5A/150W)
- 085 (8.3A/200W)
- 100 (10.5A/250W)
- 150 (14.6A/350W)

H — Version number

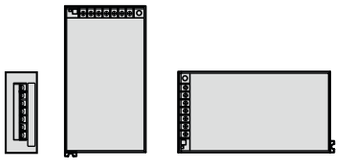
Output Specifications

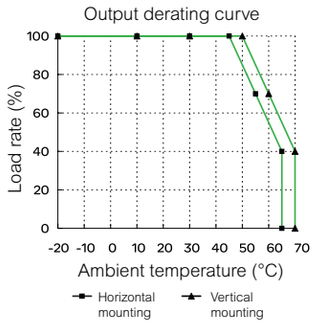
Derating

Ambient temperature is a decisive factor restricting electronic power supplies to continuously supply power. In case electronic components have too high ambient temperature, their life will be significantly shortened.

The rated ambient temperature of ABL2REM range power supplies is +45°C (horizontal mounting) or +50°C (terminal to the left, vent hole upwards, vertical mounting). There is a derating when such temperatures rise until they reach 65°C (horizontal) and 70°C (vertical) at the maximum respectively.

The following curve gives the relation between output power (related to rated power) continuously supplied by power supplies and ambient temperature.





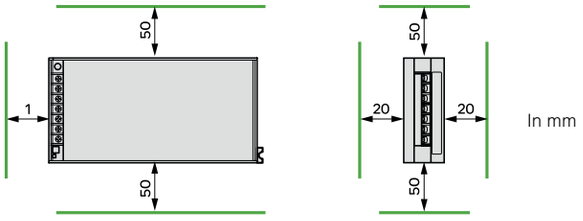
Extreme operating conditions

Under extreme operating conditions, derating should be considered:

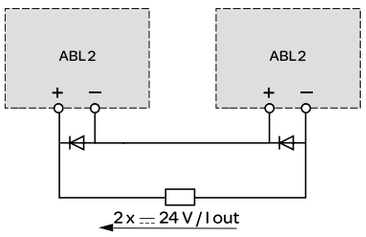
- Heavy duty operation (output current should be close to rated current for a long time, while having higher ambient temperature)
- Output voltage higher than 24V

General rules to be followed	
Heavy duty operation	Refer to Derating Curve Chart
Rising output voltage	Nominal power is constant. The rise of output voltage means it is a must to offer reduced current.

In any case, there must be enough air flow convection around the power supply to ensure good cooling, and there must be space of 50mm above and under it as well as space of 20mm at its side. Exhaust outlets for 200W/250W/350W models should not be obstructed.



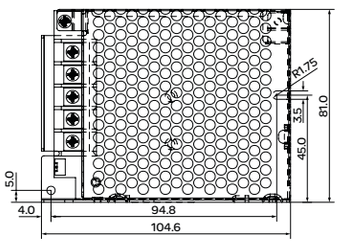
In series

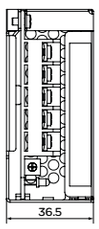


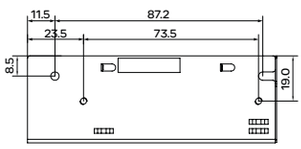
Dimension and mounting (in mm)

ABL 2REM24015H

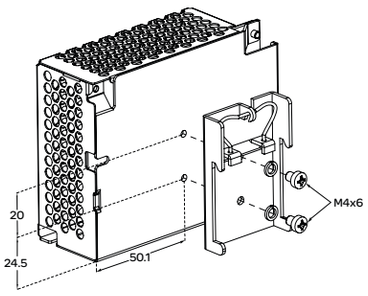
Direct mounting through 2 pieces of M3 screws





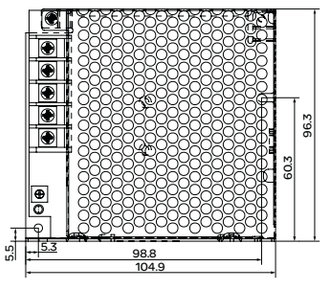


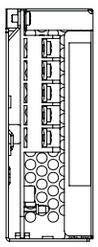
DIN rail mounting, requiring accessories ABL2A02

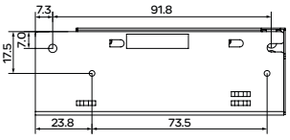


ABL 2REM24020H

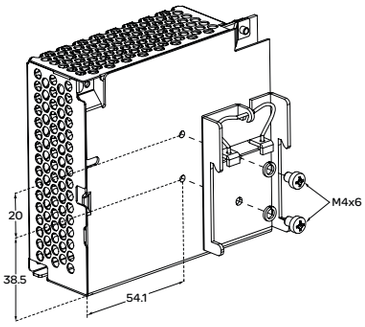
Direct mounting through 2 pieces of M3 screws





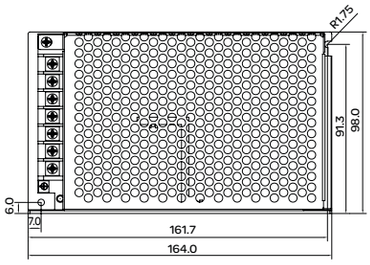


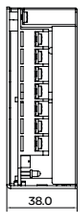
DIN rail mounting, requiring accessories ABL2A02

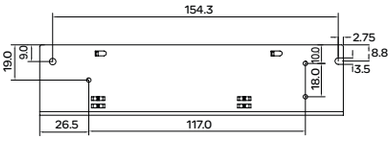


ABL 2REM24045H

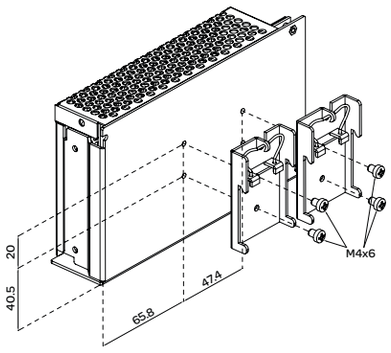
Direct mounting through 2 pieces of M3 screws







DIN rail mounting, requiring accessories ABL2A02



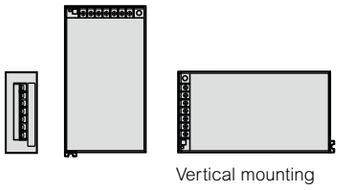
Output Specifications

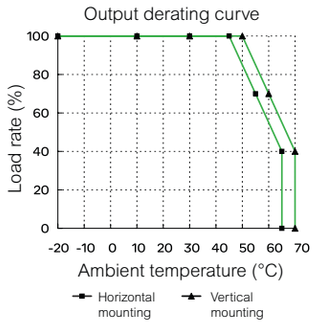
Derating

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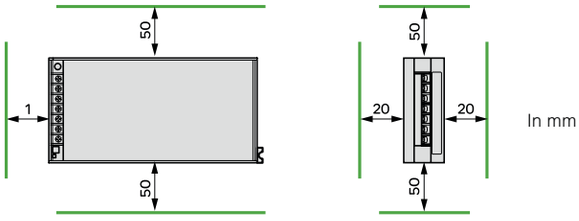
Extreme operating conditions

Under extreme operating conditions, derating should be considered:

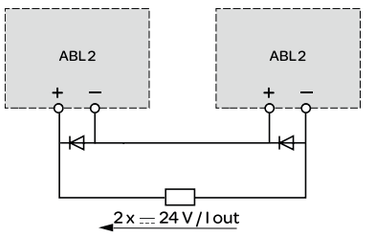
- Heavy duty operation (output current should be close to rated current for a long time, while having higher ambient temperature)
- Output voltage higher than 24V

General rules to be followed	
Heavy duty operation	Refer to Derating Curve Chart
Rising output voltage	Nominal power is constant. The rise of output voltage means it is a must to offer reduced current.

In any case, there must be enough air flow convection around the power supply to ensure good cooling, and there must be space of 50mm above and under it as well as space of 20mm at its side. Exhaust outlets for 200W/250W/350W models should not be obstructed.



In series







Pushbuttons, Towerlights, and Relays

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

Harmony Easy XA2:
- modular, plastic pushbuttons and switches with metallic-look ring,
- complete, plastic pilot lights with integral LED

Fit for purpose

All the products composing the Harmony™ Easy XA2 range have been designed to be used in numerous control and signaling applications:

> customers can easily select the key functions for standard applications
> their diameter, Ø 22 mm /0.866 in. makes them suitable for standard OEM and panel builder applications.
> with plastic material, they provide a solution for industrial applications demanding a high resistance to chemical agents.

Ease and comfort of choice

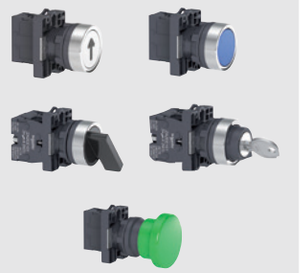
The range is available in the form of complete units. It involves:

> modular, plastic pushbuttons and switches with metallic-look ring
The modular design allows flexible and simple setup for complete products: the right product can be chosen among various types of heads and 2 types of functions are proposed (contact and signaling)
> complete pilot lights, provided with integral LED.

All products are fitted with screw clamp terminals allowing fast and easy connection.

Contact functions

- Pushbuttons with spring return and push-push (marked or unmarked)
- Selector switches and key switches, 2 or 3 positions
- Emergency switching off pushbuttons with push-pull and turn to release



Contact and signaling functions

- Illuminated pushbuttons with integral LED, spring return and flush push



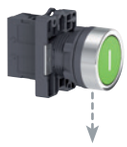
Signaling functions

- Pilot lights with integral LED

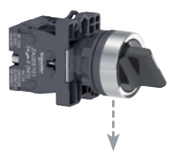


Groomed ergonomics

> Metallic-look ring on pushbuttons and switches gives a modern look
> Ergonomic curve on the selector switches allows flexible operation



Metallic-look ring



Ergonomic curve





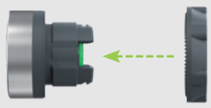
Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

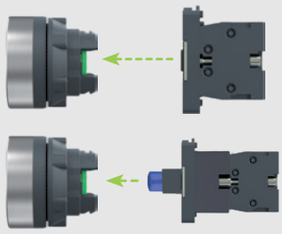
Easy installation

> Installation of pushbuttons is simple and easy
> Mounting by single nut to the control panel
> Anti-rotation plate prevents the pushbutton head from rotation

- Single lock ring for mounting on control panel



- Clip-together component system for head, body, contacts, and LED light blocks



Proven robustness

> Conforming to most demanding international standards and approvals
> Tested and certified performance
> Excellent resistance to mechanical shock and vibration
> Supports extended temperature range from − 40° C to + 70° C



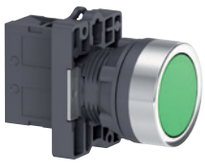
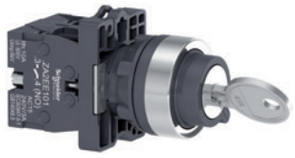
Helps customer to improve the reliability

Service and availability

> Supported by the service of Schneider Electric
> Wide availability throughout an extensive distribution network

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

Type of products		Contact functions		
		Pushbuttons	Emergency switching off pushbuttons	Selector and key switches
		 		 
Description of range		■ Pushbuttons, spring return: flush push, mushroom head, and push-push	■ Emergency switching off pushbuttons: turn to release and push-pull	■ Selector switches, 2 or 3-position: standard or long handle ■ Key switches
Features	Products	Complete units		
	Shape of head	Circular		
Drilling or cut-out for mounting		Ø 22 mm/*0.866 in.*		
Degree of protection		IP 65 conforming to standard IEC 60529		IP 54 conforming to standard IEC 60529 Selector switches: IP 65 Key switches: IP 54
Internationl standards		IEC 60947-5-1, EN 60947-5-1, GB/T 14048.1-93, GB/14048.5-93		
Product certification		CCC, EAC, CE		
Cabling		Screw clamp terminal connections		
Mounting	Panel thickness	Ø 1 to 6 mm/ *0.04 to 0.24 in.*		
Type references		**XA2EA●●/EA●●●●/EC●●/ XA2ER●●/EH0●●**	**XA2ET●●/ES●●●**	**XA2ED●●/EJ●●/EG●●**
Pages		9	10	11

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

Contact and signaling functions	Signaling functions
Illuminated pushbuttons	**Pilot lights**
	
■ Illuminated pushbuttons with integral LED, spring return: flush push	■ Pilot lights with integral LED
Complete units	
Circular	
Ø 22 mm/*0.866 in.*	
IP 65 conforming to standard IEC 60529	IP 40 conforming to standard IEC 60529
IEC 60947-5-1, EN 60947-5-1, GB/T 14048.1-93, GB/14048.5-93	
CCC, EAC, CE	
Screw clamp terminal connections	
Ø 1 to 6 mm/*0.04 to 0.24 in.*	
XA2EW3●●●	**XA2EV●●●LC, XA2EV●D●LC**
12	13

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

Presentation

The Harmony Easy XA2 range of Ø 22*/0.866 in.* plastic control and signaling units combines simplicity of installation, flexibility and robustness. It meets the requirements of the majority of industrial applications. The metallic-look ring design on the pushbuttons and switches gives them a modern look. These products are available in the form of complete units.

■ This range includes:
□ Pushbuttons, selector/key switches, Emergency switching off pushbuttons for Start/Stop control of machines and installations, adjustment, and parametering (contact functions),
□ Illuminated pushbuttons for control and signaling (contact functions and signaling functions),
□ Pilot lights (signaling functions).

■ The pushbutton, switch (illuminated and non-illuminated) and pilot light control offer comprises:
□ Flush, spring return marked and unmarked pushbuttons, mushroom head spring return pushbuttons,
□ Illuminated pushbuttons, spring return, with integral LED,
□ Ø 40*/1.575 in.*, Ø 30*/1.181 in.,* and Ø 60*/2.362 in.* Emergency switching off pushbuttons,
□ Selector switches with standard and long handle,
□ Key switches,
□ Pilot lights with integral LED,
□ Various accessories.

Installation

■ Harmony Easy XA2 products are both simple and quick to install:
□ Mounting by a single nut to the control panel,
□ Body/fixing collar simply clip on the head,
□ Anti-loosening system for screw clamp terminals of contact blocks.

■ Type of connection:
□ screw clamp terminals.

Environment

The performance features of the Harmony Easy XA2 range meets the following specifications:

■ Degrees of protection conforming to standard IEC 60529:
□ IP 65 for pushbuttons, Emergency switching off pushbuttons, illuminated pushbuttons
□ IP 54 for key select switch
□ IP 40 for pilot lights

■ International standards:
□ IEC 60947-5-1, EN 60947-5-1, GB/T 14048.1-93, GB/14048.5-93

■ Product certification:
□ CCC, EAC, CE

For more technical information, please refer to our website www.schneider-electric.com.

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights

Description

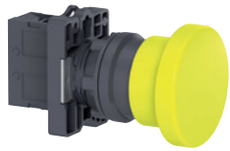
The Ø 22*/0.866 in.* range of control and signaling units comprises complete units

Functions

Contact functions

Pushbuttons, spring return



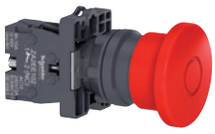
Type of push	Flush push, unmarked	Flush push, marked	Mushroom head
Degree of protection	IP 65	IP 65	IP 65
Color	White, Black, Green, Yellow, Blue, and Red	Green, Black, White, and Red	Black, Green, Red, and Yellow
Reference	**XA2EA●1/EA42**	**XA2EA33●1/EA43●2**	**XA2EC●1/EC42/ER21**
Pages	9		

Pushbuttons, push-push



Type of push	Push-push
Degree of protection	IP 65
Color	White, Black, Green, Yellow, Blue, and Red
Reference	**XA2EH0●1/EH042**
Pages	10

Emergency switching off pushbuttons



Type of push	Turn to release and push-pull (Ø 30 mm*/1.181 in.*, Ø 40 mm*/1.575 in.*, Ø 60 mm*/1.362 in.*)
Degree of protection	IP 65
Color	Red and Black
Reference	**XA2ET42/ES●42/ES422**
Pages	10

Control and signaling units Ø22

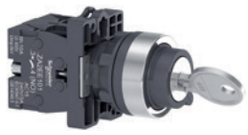
Harmony Easy XA2, plastic
Pushbuttons, switches and pilot lights: complete units

Functions (continued)

Contact functions (continued)

Selector or key switches, 2 or 3-position





Type of push	Standard handle	Long handle	Key
Degree of protection	IP 65	IP 65	IP 54
Reference	**XA2ED●●**	**XA2EJ●●**	**XA2EG21/EG●3**
Page	11		

Combined functions: contact and signaling

Illuminated pushbuttons, spring return



Type of push	Flush push
Degree of protection	IP 65
LED	Integral LEDs, 24, 220-230 or 380-400 V
Color	White, Green, Red, Yellow, and Blue
Reference	**XA2EW3●B1/3●M1/ 3●Q1**
Pages	12

Signaling functions

Pilot lights



Degree of protection	IP 40
LED	Integral LEDs, 24, 110, 220-230 or 380-400 V
Color	White, Green, Red, Orange, Blue, and Yellow
Reference	**XA2EV●●LC/EV●D●LC**
Pages	13

Control and signaling units Ø22

Harmony Easy XA2, plastic
Spring return pushbuttons, marked and unmarked
Mushroom head pushbuttons, spring return

PF132002



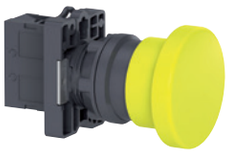
XA2EA31

PF132010



XA2EA4342

PF132014



XA2EC51

Spring return pushbuttons with flush push

Shape of head	Type of contacts N/O	Type of contacts N/C	Color of push	Marking	Reference	Weight kg/*lb*
Unmarked						
	1	–	White	–	**XA2EA11**	0.032/*0.071*
			Black	–	**XA2EA21**	0.032/*0.071*
			Green	–	**XA2EA31**	0.032/*0.071*
			Yellow	–	**XA2EA51**	0.032/*0.071*
			Blue	–	**XA2EA61**	0.032/*0.071*
	–	1	Red	–	**XA2EA42**	0.032/*0.071*
Marked						
	1	–	Green	"I"	**XA2EA3311**	0.032/*0.071*
	1	–	Black	"↑"	**XA2EA3351**	0.032/*0.071*
	1	–	White	"↑"	**XA2EA3341**	0.032/*0.071*
	–	1	Red	"O"	**XA2EA4322**	0.032/*0.071*
STOP	–	1	Red	"STOP"	**XA2EA4342**	0.032/*0.071*

Mushroom head pushbuttons, spring return

Shape of head	Type of contacts N/O	Type of contacts N/C	Color of push	Diameter Ø (mm)/*in.*	Reference	Weight kg/*lb*
	1	–	Black	40/*1.575*	**XA2EC21**	0.052/*0.115*
	1	–	Green	40/*1.575*	**XA2EC31**	0.052/*0.115*
	–	1	Red	40/*1.575*	**XA2EC42**	0.052/*0.115*
	1	–	Yellow	40/*1.575*	**XA2EC51**	0.052/*0.115*
	1	–	Black	60/*2.362*	**XA2ER21**	0.058/*0.128*

Note: *Please refer to our website www.schneider-electric.com for information on dimensions*

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pushbuttons, push-push, Emergency switching off pushbuttons


PF132017

XA2EH021

Pushbuttons, push-push with flush push

Shape of head	Type of contacts N/0	Type of contacts N/C	Color of push	Reference	Weight kg/*lb*
	1	–	White	**XA2EH011**	0.04/*0.088*
	1	–	Black	**XA2EH021**	0.04/*0.088*
	1	–	Green	**XA2EH031**	0.04/*0.088*
	–	1	Red	**XA2EH042**	0.04/*0.088*
	1	–	Yellow	**XA2EH051**	0.04/*0.088*
	1	–	Blue	**XA2EH061**	0.04/*0.088*


PF132022

XA2ET42

Emergency switching off pushbuttons

Shape of head	Type of push	Type of contacts N/C	Color	Diameter Ø (mm)/*in.*	Reference	Weight kg/*lb*
	Push-pull	1	Red	40/*1.575*	**XA2ET42**	0.088/*0.194*
	Turn to release	1	Red	30/*1.181*	**XA2ES442**	0.056/*0.123*
			Red	40/*1.575*	**XA2ES542**	0.058/*0.128*
			Red	60/*2.362*	**XA2ES642**	0.064/*0.141*
			Black	30/*1.181*	**XA2ES422**	0.056/*0.123*

Note: *Please refer to our website www.schneider-electric.com for information on dimensions*

Control and signaling units Ø22

Harmony Easy XA2, plastic
Selector switches, with standard or long handle, key switches


PF132031

XA2ED53

Selector switches, with standard handle or with long handle

Shape of head	Type of push	Type of contacts N/O	Type of contacts N/C	Number and type of positions	Reference	Weight kg/*lb*
	Standard handle	1	–	2 - stay put	**XA2ED21**	0.04/*0.088*
		1	1	2 - stay put	**XA2ED25**	0.054/*0.119*
		2	–	3 - stay put	**XA2ED33**	0.054/*0.119*
		2	–	3 - spring return from 2 sides	**XA2ED53**	0.054/*0.119*
		1	–	2 - spring return	**XA2ED41**	0.041/*0.090*
	Long handle	1	–	2 - stay put	**XA2EJ21**	0.041/*0.090*
		1	1	2 - stay put	**XA2EJ25**	0.041/*0.090*
		2	–	3 - stay put	**XA2EJ33**	0.055/*0.121*
		2	–	3 - spring return from 2 sides	**XA2EJ53**	0.055/*0.121*


PF132041

XA2EG03

Key switches

Shape of head	Type of push	Type of contacts N/O	Type of contacts N/C	Number and type of positions	Reference	Weight kg/*lb*
	Key	1	–	2 - stay put, one side pull-out	**XA2EG21**	0.064/*0.141*
		2	–	2 - stay put, two sides pull-out	**XA2EG43**	0.078/*0.172*
		2	–	2 - spring return, one side pull-out	**XA2EG63**	0.078/*0.172*
		2	–	3 - spring return from 2 sides, middle pull-out	**XA2EG73**	0.078/*0.172*
		2	–	3 - stay put, middle pull-out	**XA2EG33**	0.078/*0.172*
		2	–	3 - stay put, 3 sides pull-out	**XA2EG03**	0.078/*0.172*

Note: *Please refer to our website www.schneider-electric.com for information on dimensions*

Control and signaling units Ø22

Harmony Easy XA2, plastic
Illuminated pushbuttons with flush push
Bulbs for illuminated pushbuttons
Contact functions for all XA2 pushbuttons and switches

PF132051



XA2EW36B1

PF132056



DL1LED244

PF132058



DL1LED246

107359



ZB5AZ905

107342



ZB5AZ902

PF132053



ZA2EE102

Illuminated pushbuttons with integral LED

Shape of head	Type of push	Supply voltage V	Type of contacts N/O	Type of contacts N/C	Color	Reference	Weight kg/*lb*
○	Flush push	∿ / ⎓ 24	1		White	**XA2EW31B1**	0.056/*0.123*
					Green	**XA2EW33B1**	0.056/*0.123*
					Red	**XA2EW34B1**	0.056/*0.123*
					Yellow	**XA2EW35B1**	0.056/*0.123*
					Blue	**XA2EW36B1**	0.056/*0.123*
				1	Red	**XA2EW34B2**	0.056/*0.123*
		∿ 220-230	1		White	**XA2EW31M1**	0.064/*0.141*
					Green	**XA2EW33M1**	0.064/*0.141*
					Red	**XA2EW34M1**	0.064/*0.141*
					Yellow	**XA2EW35M1**	0.064/*0.141*
					Blue	**XA2EW36M1**	0.064/*0.141*
				1	Red	**XA2EW34M2**	0.056/*0.123*
		∿ 380-400	1		White	**XA2EW31Q1**	0.064/*0.141*
					Green	**XA2EW33Q1**	0.064/*0.141*
					Red	**XA2EW34Q1**	0.064/*0.141*
					Yellow	**XA2EW35Q1**	0.064/*0.141*
					Blue	**XA2EW36Q1**	0.064/*0.141*
				1	Red	**XA2EW34Q2**	0.056/*0.123*

Bulbs with BA 9s base fitting and associated accessories

Description	Characteristics	Color	Sold in lots of	Unit reference	Weight kg/*lb*
LEDs	∿ / ⎓ 24 V	White	10	**DL1LED241**	0.002/*0.004*
		Green	10	**DL1LED243**	0.002/*0.004*
		Red	10	**DL1LED244**	0.002/*0.004*
		Yellow	10	**DL1LED245**	0.002/*0.004*
		Blue	10	**DL1LED246**	0.002/*0.004*

Description	Application	Sold in lots of	Unit reference	Weight kg/*lb*
Bezel tool	Tightening head fixing nut	1	**ZB5AZ905**	0.016/*0.035*
Anti-rotation plate	Prevents head from rotation	10	**ZB5AZ902**	0.008/*0.018*

Contact functions (for all XA2 pushbuttons and switches)

Screw clamp terminal connections

Description	To be used with	Type of contacts N/O	Type of contacts N/C	Sold in lots of	Unit reference	Weight kg/*lb*
Contact blocks	**All XA2 pushbuttons and switches**	1	–	1	**ZA2EE101**	0.014/*0.031*
		–	1	1	**ZA2EE102**	0.014/*0.031*

Note: *Please refer to our website www.schneider-electric.com for information on dimensions*

Control and signaling units Ø22

Harmony Easy XA2, plastic
Pilot lights with integral LED



XA2EV●●3LC



XA2EV●●5LC



XA2EV●●8LC

Pilot lights with integral LED

Shape of head	Supply voltage V	Color of lens	Sold in lots of	Reference	Weight kg/*lb*
○	∿ / ⎓ 24	White	10	**XA2EVB1LC**	0.017/*0.037*
		Green	10	**XA2EVB3LC**	0.017/*0.037*
		Red	10	**XA2EVB4LC**	0.017/*0.037*
		Orange	10	**XA2EVB5LC**	0.017/*0.037*
		Blue	10	**XA2EVB6LC**	0.017/*0.037*
		Yellow	10	**XA2EVB8LC**	0.017/*0.037*
	∿ 110	White	10	**XA2EVF1LC**	0.017/*0.037*
		Green	10	**XA2EVF3LC**	0.017/*0.037*
		Red	10	**XA2EVF4LC**	0.017/*0.037*
		Orange	10	**XA2EVF5LC**	0.017/*0.037*
		Blue	10	**XA2EVF6LC**	0.017/*0.037*
		Yellow	10	**XA2EVF8LC**	0.017/*0.037*
	⎓ 110	White	10	**XA2EVFD1LC**	0.017/*0.037*
		Green	10	**XA2EVFD3LC**	0.017/*0.037*
		Red	10	**XA2EVFD4LC**	0.017/*0.037*
		Orange	10	**XA2EVFD5LC**	0.017/*0.037*
		Blue	10	**XA2EVFD6LC**	0.017/*0.037*
		Yellow	10	**XA2EVFD8LC**	0.017/*0.037*
	∿ 220-230	White	10	**XA2EVM1LC**	0.017/*0.037*
		Green	10	**XA2EVM3LC**	0.017/*0.037*
		Red	10	**XA2EVM4LC**	0.017/*0.037*
		Orange	10	**XA2EVM5LC**	0.017/*0.037*
		Blue	10	**XA2EVM6LC**	0.017/*0.037*
		Yellow	10	**XA2EVM8LC**	0.017/*0.037*
	⎓ 220	White	10	**XA2EVMD1LC**	0.017/*0.037*
		Green	10	**XA2EVMD3LC**	0.017/*0.037*
		Red	10	**XA2EVMD4LC**	0.017/*0.037*
		Orange	10	**XA2EVMD5LC**	0.017/*0.037*
		Blue	10	**XA2EVMD6LC**	0.017/*0.037*
		Yellow	10	**XA2EVMD8LC**	0.017/*0.037*
	∿ 380-400	White	10	**XA2EVQ1LC**	0.017/*0.037*
		Green	10	**XA2EVQ3LC**	0.017/*0.037*
		Red	10	**XA2EVQ4LC**	0.017/*0.037*
		Orange	10	**XA2EVQ5LC**	0.017/*0.037*
		Blue	10	**XA2EVQ6LC**	0.017/*0.037*
		Yellow	10	**XA2EVQ8LC**	0.017/*0.037*

Note: *Please refer to our website www.schneider-electric.com for information on dimensions*

Signalling solutions

Monolithic tower lights
Harmony type XVG Ø60mm
Pre-assembled and pre-cabled tower lights



Presentation

The monolithic tower lights in the Harmony XVG range are designed for long distance indication of the operating status or sequences of a machine or installation, either visually by means of illuminated signalling units visible through 360°, or audibly by means of a buzzer.

■ The range involves Ø 60mm products and is therefore ideal for use in many activity sectors, including metal tools, plastic extrusion machines, SMT, textiles, packaging, baggage handling and assembly lines. This range is only for indoor applications.

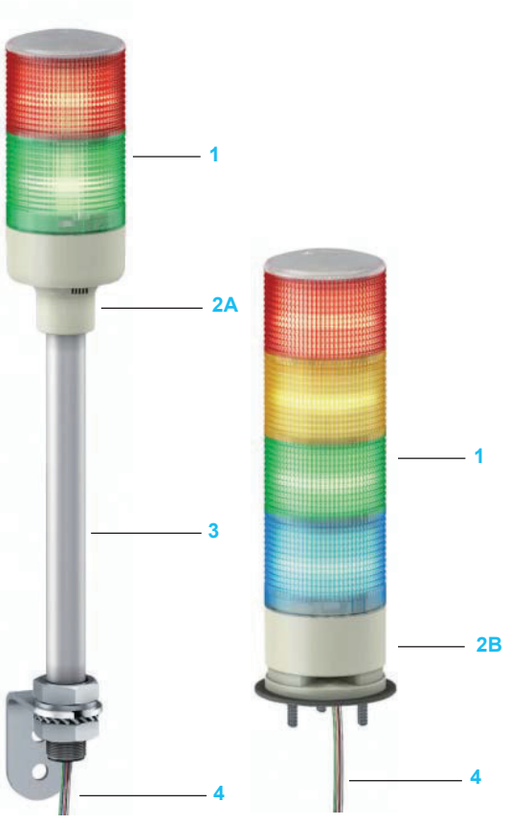
■ XVG tower lights are supplied:
□ with 2, 3 or 4 illuminated signalling units, coloured LEDs and clear lenses *(1)*,
□ with or without a buzzer,
□ pre-assembled and pre-cabled,
□ fitted with one of the following mounting options:
- base mounting (IP 53 and IP 42),
- direct aluminium tube mounting (IP 23),
- aluminium tube mounting and "L" bracket (IP 23),
- aluminium tube mounting and fixing plate (IP 53 and IP 42),
- aluminium tube mounting and foldable bracket (IP 40).

Illuminated signalling

The light source consists of coloured LEDs completed with a clear lense to provide aesthetics look and reliable signalling (clear lenses help to avoid colour reflectance in bright environments). When LEDs are not powered, the tower lights appear translucent. The colours are always placed in the standard industry order, from top to bottom.

Audible signalling

The tower light is supplied with or without an audible signalling unit (buzzer with continuous signal) depending on the required configuration. This audible unit is located in the base of the tower light.



Cabling

XVG tower lights supplied pre-assembled are equipped with wires marked with a label indicating the correct way to connect. Each level is marked by a different coloured wire.
XVG tower lights that have been pre-assembled and pre-cabled at the factory cannot be modified because the wires are permanently connected (soldered).

Description

XVG monolithic tower lights are comprised of:

1 Two, three or four coloured illuminated signalling units (red, amber, green or blue). Each XVG tower light is equipped with coloured LEDs and a clear lens molded from a single piece of clear plastic. The colours are only visible when the LEDs are supplied (voltage: 24 V AC/DC) *(1)*.

2 A base mounted on the support tube 2A or a base fitted with 3 screws 2B for direct mounting on a horizontal surface (depending on the model).

3 An aluminium support tube completed with a fixing plate or a foldable bracket (for mounting on a horizontal support) or with an L-bracket (for mounting on a vertical support).

4 Marked wires, with projecting length of 500 to 560 mm for all tower lights with tube mounting (depending on the model) and 900 mm for base mounting model.

(1) Tower lights on this page are shown with LEDs on.

Signalling solutions

Monolithic tower lights
Harmony type XVG Ø60mm
Pre-assembled and pre-cabled tower lights



XVG B4SW
XVG B2ST *XVG B2S*



XVG B3SH *XVG B3SM*



XVG Z02



XVM Z02W

Pre-assembled and pre-cabled tower lights ≂ 24 V, Ø 60 mm

Description	Light source (included)	Degree of protection	Signalling colours *(1)*	Reference	Weight kg
With base mounting					
Without buzzer	LED for steady light	IP 53	Red, Green	**XVG B2W**	0.200
			Red, Amber, Green	**XVG B3W**	0.240
			Red, Amber, Green, Blue	**XVG B4W**	0.280
With buzzer	LED for steady light	IP 42	Red, Green	**XVG B2SW**	0.210
			Red, Amber, Green	**XVG B3SW**	0.250
			Red, Amber, Green, Blue	**XVG B4SW**	0.290
With direct aluminium tube mounting					
Without buzzer	LED for steady light	IP 23	Red, Green	**XVG B2T**	0.350
			Red, Amber, Green	**XVG B3T**	0.390
			Red, Amber, Green, Blue	**XVG B4T**	0.430
With buzzer	LED for steady light	IP 23	Red, Green	**XVG B2ST**	0.360
			Red, Amber, Green	**XVG B3ST**	0.400
			Red, Amber, Green, Blue	**XVG B4ST**	0.440
With aluminium tube mounting and L-bracket					
Without buzzer	LED for steady light	IP 23	Red, Green	**XVG B2**	0.420
			Red, Amber, Green	**XVG B3**	0.460
			Red, Amber, Green, Blue	**XVG B4**	0.500
With buzzer	LED for steady light	IP 23	Red, Green	**XVG B2S**	0.430
			Red, Amber, Green	**XVG B3S**	0.470
			Red, Amber, Green, Blue	**XVG B4S**	0.510
With aluminium tube mounting and fixing plate					
Without buzzer	LED for steady light	IP 53	Red, Green	**XVG B2H**	0.320
			Red, Amber, Green	**XVG B3H**	0.360
			Red, Amber, Green, Blue	**XVG B4H**	0.400
With buzzer	LED for steady light	IP 42	Red, Green	**XVG B2SH**	0.330
			Red, Amber, Green	**XVG B3SH**	0.370
			Red, Amber, Green, Blue	**XVG B4SH**	0.410
With aluminium tube mounting and foldable bracket					
Without buzzer	LED for steady light	IP 40	Red, Green	**XVG B2M**	0.360
			Red, Amber, Green	**XVG B3M**	0.400
			Red, Amber, Green, Blue	**XVG B4M**	0.440
With buzzer	LED for steady light	IP 40	Red, Green	**XVG B2SM**	0.370
			Red, Amber, Green	**XVG B3SM**	0.410
			Red, Amber, Green, Blue	**XVG B4SM**	0.450

Accessories

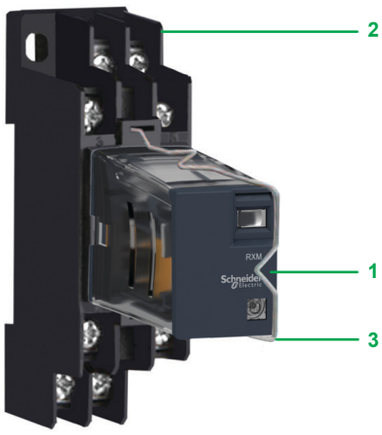
Description	For use with	Reference	Weight kg
Folding mounting bracket for support tube mounting	XVG B●H, XVG B●SH	**XVG Z02**	0.090
Wall mounting bracket	XVG B●T, XVG B●ST	**XVM Z02W**	0.130

(1) The colours are listed in the same order as the mounting order of the illuminated units (from top to bottom).

Other versions Tower lights with other diameters (ranging from 40 mm to 100 mm) are available in other ranges. Please consult Schneider Electric website.

Zelio Relay

Electromechanical Relays, RXM miniture relays



Presentation of the range

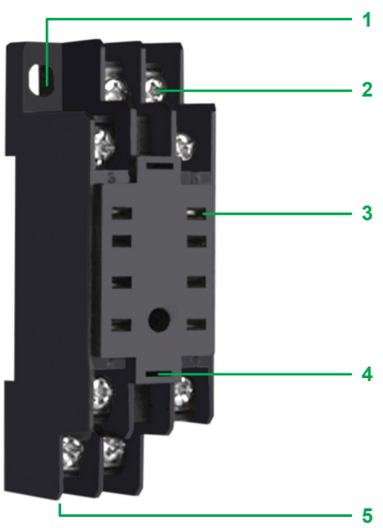
The RXM miniature relay range comprises:

1 5 A relay with 2 CO contacts or 3 A relays with 4 CO contacts and same dimensions
2 Socket with mixed contact terminals
3 Metal maintaining clamps (accessories)



Relay description

1 Area by which the product can be easily gripped
2 Mechanical “relay status” indicator
3 LED (depending on version) indicating the relay status
4 Four notches for rail mounting adapter or panel mounting adapter with fixing lugs
5 Eight or fourteen Faston type pins



RXZE1M2C

Socket description

1 Two fixing holes for panel mounting
2 Connection by screw clamp terminals
3 Eight or fourteen female contacts for the relay pins
4 Two fixing holes for metal maintaining clamp
5 Locating slot for mounting on DIN rail with fixing clip

Zelio Relay

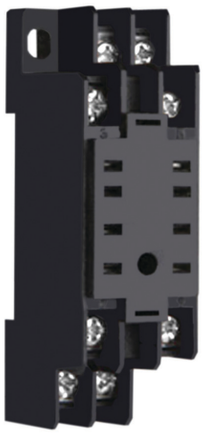
Electromechanical Relays, RXM miniture relays



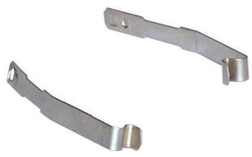
RXM2LB2JD



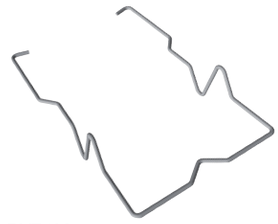
RXM2LB1JD



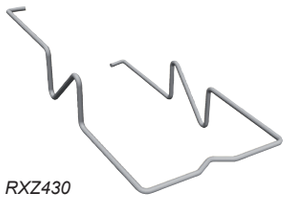
RXZE1M2C



RXZ410



RXZ420



RXZ430

References

Miniature relays without lockable test-button, with LED
(sold in lots of 10)

Control circuit voltage	Number and type of contacts - Thermal current (Ith)			
	2 CO - 5 A		4 CO - 3 A	
	Unit reference	Weight	Unit reference	Weight
V		kg/*lb*		kg/*lb*
⎓ 12	**RXM2LB2JD**	0.033/ *0.073*	**RXM4LB2JD**	0.035/ *0.077*
⎓ 24	**RXM2LB2BD**	0.032/ *0.071*	**RXM4LB2BD**	0.034/ *0.075*
⎓ 36	**RXM2LB2CD**	0.034/ *0.075*	**RXM4LB2CD**	0.036/ *0.079*
⎓ 48	**RXM2LB2ED**	0.033/ *0.073*	**RXM4LB2ED**	0.035/ *0.077*
⎓ 110	**RXM2LB2FD**	0.031/ *0.068*	**RXM4LB2FD**	0.033/ *0.073*
∿ 24	**RXM2LB2B7**	0.033/ *0.073*	**RXM4LB2B7**	0.035/ *0.077*
∿ 120	**RXM2LB2F7**	0.032/ *0.071*	**RXM4LB2F7**	0.033/ *0.073*
∿ 230	**RXM2LB2P7**	0.031/ *0.068*	**RXM4LB2P7**	0.032/ *0.071*

Miniature relays without lockable test-button, without LED
(sold in lots of 10)

Control circuit voltage	Number and type of contacts - Thermal current (Ith)			
	2 CO - 5 A		4 CO - 3 A	
	Unit reference	Weight	Unit reference	Weight
V		kg/*lb*		kg/*lb*
⎓ 12	**RXM2LB1JD**	0.032/ *0.071*	**RXM4LB1JD**	0.034/ *0.075*
⎓ 24	**RXM2LB1BD**	0.032/ *0.071*	**RXM4LB1BD**	0.033/ *0.073*
⎓ 48	**RXM2LB1ED**	0.033/ *0.073*	**RXM4LB1ED**	0.034/ *0.075*
∿ 24	**RXM2LB1B7**	0.033/ *0.073*	**RXM4LB1B7**	0.034/ *0.075*
∿ 120	**RXM2LB1F7**	0.031/ *0.068*	**RXM4LB1F7**	0.033/ *0.073*
∿ 230	**RXM2LB1P7**	0.030/ *0.066*	**RXM4LB1P7**	0.032/ *0.071*

Sockets
(sold in lots of 10)

Contact terminal arrangement	Connection	Relay type	Unit reference	Weight kg/*lb*
Mixed	Screw clamp	RXM2	**RXZE1M2C**	0.034/ *0.075*
	Screw clamp	RXM2 RXM4	**RXZE1M4C**	0.053/ *0.117*

Accessories
(sold in lots of 10)

Description	For use with	Unit reference	Weight kg/*lb*
Metal maintaining clamp	RXZE1M●C	**RXZ410**	0.001/ *0.002*
	RXZE1M2C	**RXZ420**	0.001/ *0.002*
	RXZE1M4C	**RXZ430**	0.001/ *0.002*

Note: If protection module needed, please used the RZE2● sockets with the associated protection module RXM0. You can find all the details in the RXM●AB range.





Occupancy Sensors

Occupancy Sensors



Description	Reference
Outdoor Passive Detector	
Passive Infra-red 250 V - 10A Detector IP66	750WPR-GY



Flush Mount Sensors	
Single Load, 230V-Max 2kW, 360°	753R_WE
Dual Load (5A), 230V-Max 2kW, 360° (Remote Capable)*	SAE_UE_MS_CDBWE
Lux and Time adjustable	



Surface Mount Sensors	
Single Load, 230-Max 2kW, 360° (Remote Capable)*	SAE_UE_MS_CSBWE
Lux and Time adjustable	
Dual Load (5A), 230-Max 2kW, 360° (Remote Capable)*	SAE_UE_MS_CDAWE
Lux and Time adjustable	





Surface or Flush Mount Sensors	
Single Load, 230-Max 2kW, 360° - Lux and Time adjustable	SAE_UE_MS_CSAWE
UltraSonic and PIR, Single Load (5A), 230V-Max 2kW, 360°	CCT551012
(Remote Capable)* Lux and Time adjustable	
Auto Dimming, Dual Load, 230V-Max 2kW, 360°	SAE_UE_MS-CDDWE
(Remote Included)* Lux and Time adjustable	
* Remote Optional	



Remote controller	
IR Remote Controller (For Single and Dual Load PIR)	SAE_UE_MS_1R_WE
IR Remote Controller for Dual-Tech sensors	CCT556011





UPS - Uninterrupted Power Supplies

Business continuity made easy

The Schneider Electric Easy UPS 3S is an easy-to-install, easy-to-use, and easy-to-service 10 – 40 kVA 3-phase UPS ideal for small and medium businesses.

The Schneider Electric Easy UPS 3S delivers up to 96 percent efficiency in double conversion mode and up to 99 percent efficiency in energy-saving ECO Mode, thanks to its advanced product features, competitive specifications, and robust electrical design. It is exceptionally easy to install, operate, maintain, and service, making it ideal for a wide range of small and medium business applications. This EcoStruxure-ready UPS features a wide operating temperature window and strong overload protection, all in a compact and lightweight footprint. Start-Up Service is recommended, to optimize your system's performance, quality, and safety. The Easy UPS 3S is the easy choice for your business continuity in the data center or electrical room.

Easy to install and start up

- Rolls into position quickly
- Minimal footprint requirement with lightweight, compact form factor
- Straightforward installation:
  - Input, output, and bypass breakers are included
  - Emergency Power Off (EPO) switch is included
  - Easy Loop test verifies UPS performance before you connect your load, without the need for a load bank
- Aesthetic design blends well into your installation environment
- Schneider Electric service team and certified service partners available to provide on-site start-up

Easy to maintain

- Front access for service
- Quickly and easily replace the dust filter conveniently located behind the magnetic front panel
- Schneider Electric service team available to make service easy and deliver peace of mind

Easy to use, monitor, and manage

- User-friendly display interface supports easy configuration
- With the optional Network Card:
  - Monitor UPS status remotely through a Web interface
  - Monitor and manage UPS status and performance through EcoStruxure IT's cloud-enabled and on-premise software suites

Easy to expand

- Parallel up to four UPSs for capacity or redundancy

Typical applications

- Small & medium data centers and computer rooms
- Manufacturing facilities
- Telecommunication
- Commercial buildings
- Healthcare
- Transportation



40 kVA Easy UPS 3S for external batteries

40 kVA Easy UPS 3S UPS with internal batteries

Versatile

Easy UPS 3S is easy to adapt for your site requirements:

- Only pay for the options you need, with upgrade kits that enhance the resilience of the UPS
- Internal, external, and third party battery options
- Common battery bank: Redundant UPSs can share the same battery bank, reducing battery costs
- Extended runtime: Easy UPS 3 All In One models include up to 30 minutes of runtime

Robust and competitive

- Easy UPS 3S brings predictability to utility costs:
  - up to 96% efficiency in double conversion mode
  - up to 99% efficiency in ECO Mode
- Minimize your power losses and cooling requirements with up to unity power factor
- Protect your data center or electrical room with these ruggedizing features:
  - Embedded dust filter
  - Conformal coating
  - kVA = KW
  - Operating temperature up to 40°C
  - Wide input voltage window



10kVA Easy UPS 3S with internal batteries



40kVA Easy UPS 3S with internal batteries

Proven performance

With an established customer base of over 100,000 satisfied customers, we have been providing business continuity around the world for over 30 years. The Schneider Electric Easy UPS 3S is the easy to choose, easy to use power protection solution for today's connected businesses.

Over

100,000

satisfied customers

Options



Network card

- Network Card
- Parallel kit
- Battery module
- Battery breaker box
- Battery breaker kit
- Empty classic battery cabinet
- Temperature sensor
- Dust filter kit



Battery module

Easy monitoring, management, and services

When you purchase the Network Card, you can monitor and manage the Easy UPS 3S through these software suites:

Cloud-enabled remote monitoring with EcoStruxure Asset Advisor

EcoStruxure Asset Advisor monitors and protects your critical equipment, providing 24/7 visibility through live data, smart alarming, and data-driven insights on the health of your connected assets directly to your smartphone. When you upgrade to EcoStruxure Asset Advisor, remote troubleshooting is provided by the experts monitoring your connected assets 24x7.

- Remote Service
  - Increase your data center's uptime with intelligent 24x7 monitoring & remote troubleshooting service
- Analytics
  - Gain insight into how well your data center runs – receive recommendations & data-driven intelligence
- Smartphone App
  - Stay connected to your data center with live data & alarms on your smartphone app

More information

Contact your Schneider Electric representative for more details or visit our website for more information: https://schneider-electric.com/asset-advisor

On-premise data center infrastructure management (DCIM)

EcoStruxure IT's on-premise data center infrastructure management suite, StruxureWare™ for Data Centers, is an integrated suite of on-premise applications. It is ideal for businesses that need to manage their data centers across multiple domains. It provides actionable intelligence for an optimal balance of high availability and peak efficiency throughout the entire data center life cycle.

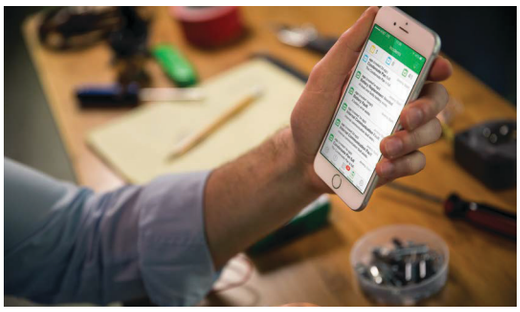
Services

Startup Services

With the Schneider Electric start up service option, your equipment is properly and safely configured for optimal performance and reliability.

Battery Services

Battery service and replacement are vital components of any UPS maintenance program since one failed battery can compromise an entire system. Whether you need to replace one or all of your batteries, we can ensure they are a reliable backup.



Maintenance Services

Schneider Electric offers a comprehensive services portfolio designed to ensure your mission-critical applications receive the proper care and maintenance they need to operate at optimal levels — at all times. Maintenance services include Preventive Maintenance Service Plans and response time upgrades, where available.

Service Plans / Onsite Extended Warranty

Flexible service packages that offer hassle-free system maintenance to improve uptime at a predictable cost. These packages provide your system with the care it needs to operate most efficiently while minimizing downtime.

Technical specifications

Rated Power (kVA/kW)	10/10	15/15	20/20*	30/30*	40/40*
Normal AC supply input					
Input Voltage (V)	380/400/415 V (Three-phase + Neutral)				
Frequency (Hz)	45 – 65 Hz				
Input Power Factor	Up to 0.99				
THDI	<3% for 10kVA UPS, <4% for 15-40kVA UPS				
Input Voltage Range	304 V to 477 V at full load				
Dual Mains Input	Yes (default: single main input)				
Output					
Nominal Output Voltage (V)	3:1 (coming soon) – 220/230/240 V				
	3:3 – 380/400/415 V				
Efficiency: Double Conversion Mode	Up to 96%				
Efficiency: EcoMode	Up to 99%				
Overload Capacity in Utility Operation	125-130% for 10 minutes and 130-150% for 1 minute				
Output Voltage Tolerance	+/-1.5% static				
Communication and management					
Communication Interface	RS232, RS485, USB, Dry contact, Modbus TCP/IP, optional Network Card				
Control Panel	Multi-function LCD, status and display console				
Weights and dimensions					
Low frame, unpackaged/ shipping dimensions (H × W × D, mm)	530 × 250 × 700 mm/ 772 × 400 × 857 mm	530 × 250 × 700 mm/ 772 × 400 × 857 mm	770 × 250 × 800 mm/ 1015 × 400 × 982 mm	770 × 250 × 800 mm/ 1015 × 400 × 982 mm	770 × 250 × 900 mm/ 1015 × 400 × 1050 mm
High frame, without batteries, unpackaged,shipping dimensions (HxWxD, mm)	1400 × 380 × 928 mm/ 1640 × 563 × 1014 mm	1400 × 380 × 928 mm/ 1640 × 563 × 1014 mm	1400 × 380 × 928 mm/ 1640 × 563 × 1014 mm	1400 × 500 × 969 mm/ 1640 × 683 × 1114 mm	1400 × 500 × 969 mm/ 1640 × 683 × 1114 mm
Low frame, unpackaged/ shipping weight (KG)	36/50	36/50	58/75	60/77	70/86
High frame, without batteries, unpackaged/shipping weight (KG)	112/145	112/145	122/158	152/190	158/195
Battery Module (1 string/4 units), unpackaged/shipping weight	27 KG per unit/28 KG per unit				
Regulatory					
Safety	IEC/EN62040-1-1		Performance	IEC 62040-3	
EMC/EMI/RFI	IEC 62040-2		Environmental	IEC 62040-4	
Markings	CE.RCM, EAC, WEEE				
Environmental					
Operating Temperature	0°C to 40°C				
Relative Humidity	0 to 95% non-condensing				
Operating Elevation	0 to 1,000 m at 100% load				
Max. Audible Noise at 1m from unit	10 – 20 kVA: 60 dBA at 100% load; 30 – 40 kVA: 63 dBA at 100% load				
Protection Class	IP20				
Warranty	1 year with Schneider Electric-certified Field Service Representative or Certified Service Partner Start-up Service (sold separately)				

* PF =1 under 30°C

1 Ph Online

Standard Features

For professionals in small to medium businesses, Easy UPS Online provides basic power protection for unstable power conditions, ensuring consistent and reliable connectivity at the most critical moments.

Schneider Electric Easy UPS Online is a versatile, high quality, cost competitive UPS developed to handle a wide voltage range, and inconsistent power conditions; delivering the quality millions of professionals trust around the world.



High power factor
More real output power in watts 0.8 Pf (1, 3 kVA)

Input power factor correction
(0.95 under normal input and full load)
Minimizes installation costs by enabling the use of smaller generators and cabling

Generator compatible
Ensures clean, uninterrupted power to the loads in the event of an extended power outage

OVCD (Overvoltage Cutoff Device) protection
Under special application with high voltage condition, OVCD protection will prevent the damage of UPS components and extend the life of the UPS

Wide input voltage range
(Half load: 110-300VAC)
Allows for unstable power environments

Intelligent battery management
Maximizes battery performance, life, and reliability through intelligent precision temperature compensated charging

Built-in Automatic and Manual Bypass
Ensures seamless power to the load even in the event of catastrophic UPS failure

Power conditioning
Protects connected loads from surges, spikes, lightning, and other power disturbances

Flash upgradeable firmware
Allows for field updates of firmware via communication ports (USB or RS232)

LCD/LED Display
Intuitive interface provides detailed and accurate information with the ability to configure locally

Environmentally robust
Conformal coated

ECO mode / Green mode
An energy saving mode that allows the input voltage regulation range to be set and modified through the LCD display

Safety agency approved
Ensures the product has been tested and approved to work safely with the connected service provider equipment and within the specified environment

Excellent power quality and performance
True double conversion provides tight voltage and frequency regulation and zero transfer time for reactive loads such as machinery or lab equipment



LCD display

1. On/Off Status LED
Indicates power is on
2. On/Off Button
Press to power UPS on or off
3. Alert LED
Flashes red when UPS has a notification or is in a steady state when there is a fault
4. Mute/ESC button
Mutes current alarm temporarily and also serves as the escape key when navigating the sub menus of the display
5. Enter key
Press to enter the display menus and chose an option within the menu
6. Up/Down arrows
Keys for navigation through the display menu

LCD display icons

ON LINE	UPS is on utility power
ON BATT	UPS is on battery power
BYPASS	UPS is in bypass mode
ON BATT	Replace battery
ALARM	An internal fault is detected
	Overload- connected load is drawing more than the power rating
LOW	Battery charge
LOAD SENSITIVITY	Load level
	Mute- audible alarm has been disabled
	ECO mode – illuminated when the unit is providing utility power directly and power is within configured ranges
SEE MANUAL	Alert or notification – UPS has detected and error please see user's manual for details
EVENT LOG	Event – illuminated when the user is reviewing the event log

1 Ph Online

Standard Features

For professionals in small to medium businesses, Easy UPS Online provides basic power protection for unstable power conditions, ensuring consistent and reliable connectivity at the most critical moments.

Schneider Electric Easy UPS Online is a versatile, high quality, cost competitive UPS developed to handle a wide voltage range, and inconsistent power conditions; delivering the quality millions of professionals trust around the world.



High power factor
More real output power in watts 0.8 Pf (1, 2, 3 kVA). Unity Pf (6,10 kVA)

Input power factor correction
(0.95 under normal input and full load)
Minimizes installation costs by enabling the use of smaller generators and cabling

Generator compatible
Ensures clean, uninterrupted power to the loads in the event of an extended power outage

OVCD (Overvoltage Cutoff Device) protection
Under special application with high voltage condition, OVCD protection will prevent the damage of UPS components and extend the life of the UPS

Wide input voltage range
(Half load: 110-300VAC)
Allows for unstable power environments

Intelligent battery management
Maximizes battery performance, life, and reliability through intelligent precision temperature compensated charging

Built-in Automatic and Manual Bypass
Ensures seamless power to the load even in the event of catastrophic UPS failure

Power conditioning
Protects connected loads from surges, spikes, lightning, and other power disturbances

Flash upgradeable firmware
Allows for field updates of firmware via communication ports (USB or RS232)

LCD/LED Display
Intuitive interface provides detailed and accurate information with the ability to configure locally

Environmentally robust
Conformal coated

ECO mode / Green mode
An energy saving mode that allows the input voltage regulation range to be set and modified through the LCD display

Safety agency approved
Ensures the product has been tested and approved to work safely with the connected service provider equipment and within the specified environment

Excellent power quality and performance
True double conversion provides tight voltage and frequency regulation and zero transfer time for reactive loads such as machinery or lab equipment

Online

Additional Features (6&10kVA)

Input power factor correction
(0.99 under normal input and full load)
Minimizes installation costs by enabling the use of smaller generators and cabling

High power factor
More real output power in watts. PF=1 in standard model

Power Conditioning
Protects connected loads from surges, spikes, lightning, and other power disturbances

Emergency Power Off (EPO)
Immediately remove power to all connected equipment in the event of emergency

Online

Standard Features



LCD display

1. On/Off Status LED
Indicates power is on
2. On/Off Button
Press to power UPS on or off
3. Alert LED
Flashes red when UPS has a notification or is in a steady state when there is a fault
4. Mute/ESC button
Mutes current alarm temporarily and also serves as the escape key when navigating the sub menus of the display
5. Enter key
Press to enter the display menus and chose an option within the menu
6. Up/Down arrows
Keys for navigation through the display menu

LCD display icons



UPS is on utility power



UPS is on battery power



UPS is in bypass mode



Replace battery



An internal fault is detected



Overload- connected load is drawing more than the power rating



Battery charge



Load level



Mute- audible alarm has been disabled



ECO mode – illuminated when the unit is providing utility power directly and power is within configured ranges



Alert or notification – UPS has detected and error please see user's manual for details



Event – illuminated when the user is reviewing the event log

Enable monitoring and control with an additional purchase

SNMP Card (APVS9601)

Schneider Electric SNMP Card provides direct communication with your Easy UPS.

At a glance the SNMP card monitors:

- UPS status: load, battery charge, voltage
- Battery status: healthy & capacity & runtime
- Environmental status: temperature & humidity
- Shutdown Wizard: ability to remotely shut down and reboot server



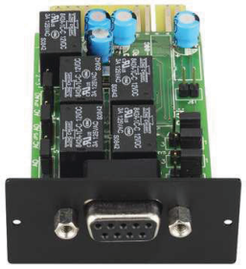


Dry Contact Card (VGLS9901I)

UPS management accessory that provides two dry contact input and one relay output interface to Schneider Electric Easy UPS SRV Series

Suitable with applications:

- IBM server, personal PC and workstations equipment
- Auto-controlled industrial equipment and communication applications



Online

Standard Features

UPS Model	SRVS1KI	SRVS2KI	SRVS3KI
Output			
Power Capacity	800 W / 1000 VA	1600 W / 2000 VA	2400 W / 3000 VA
Nominal Output Voltage	220/230/240 VAC		
Output Frequency Range (sync mode)	47-53 Hz or 57-63 Hz		
Topology and output waveform	Double conversion online; sine wave		
Output Connections	(3) IEC C13	(4) IEC C13	(6) IEC C13, (1) C19
Input			
Nominal Input Voltage	220/230/240 VAC		
Input Frequency	40 - 70 Hz		
Input Voltage Range	110-300 at 60% load		
Input Connection	IEC C14		IEC C20
Batteries			
Battery Type	12 V / 9 AH X 2	12 V / 9 AH X 4	12 V / 9 AH X6
Typical recharge time	4 hours to recover to 90% capacity		
Runtime Estimates at full and half load, min	400W / 800 W	800 W / 1600 W	1200W / 2400 W
Half Load Runtime (min)	10	10	10
Full Load Runtime (min)	4	4	4
Communication and management			
DB-9 RS-232	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC		
Intelligent Slot	Mini slot		
Control panel and audible alarms	Multi-function LCD status and control console		
Emergency power off (EPO)	No		
Surge Protection and Filtering			
Surge Energy Rating (Joules)	600 J		
Physical			
Dimension DxWxH(mm)	288 x 145 x 223	400 x 145 x 238	425 x 190 x 336
Weight (kgs)	9.3	16.8	26.8
Conformance			
Regulatory	CE		
Warranty	2 years		

Online

Standard Features

UPS Model	SRVS6KI	SRVS10KI
Output		
Power Capacity	6000 W / 6000 VA	10,000 W / 10,000 VA
Nominal Output Voltage	220/230/240 VAC	
Output Frequency Range (sync mode)	60 Hz or 50 Hz +/- 0.1 Hz	
Topology and output waveform	Double conversion online; sine wave	
Output Connections	Terminal block	
Input		
Nominal Input Voltage	220/230/240 VAC	
Input Frequency	40 - 70 Hz	
Input Voltage Range	110-300 at 60% load	
Input Connection	Terminal block	
Batteries		
Battery Type	12 V / 7 AH x 16	12 V / 9 Ah x 16
Typical recharge time	4 hours to recover to 90% capacity	
Runtime Estimates at full and half load, min	3000 W / 6000 W	5000 W / 10000 W
Half Load Runtime (min)	10	7
Full Load Runtime (min)	3.5	2
Communication and management		
DB-9 RS-232	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC	
Intelligent Slot	Mini slot	
Control panel and audible alarms	Multi-function LCD status and control console	
Emergency power off (EPO)	Yes	
Surge Protection and Filtering		
Surge Energy Rating (Joules)	600 J	
Physical		
Dimension DxWxH(mm)	374 x 190 x 685	447 x 190 x 685
Weight (kgs)	54	65
Conformance		
Regulatory	CE	
Warranty	2 years	

SRVS 230V

Extended Runtime Models (Tower)

SRVS 230V Extended Runtime Models (Tower)						
Model	**SRVS Tower**	**SRVS1KIL**	**SRVS2KIL**	**SRVS3KIL**	**SRVS6KIL**	**SRVS10KIL**
Input	Input Voltage	220-240Vac				
	Input Connection	IEC C14	IEC C14	IEC C20	Terminal Block	
	Input Frequency (V)	50Hz / 60 Hz				
	Input Voltage Range (V)	110 Vac – 285 Vac @ 50% Load			110 Vac – 300 Vac ± 3% @ 60% Load	
	Power Factor	≥ 0.95			≥ 0.99	
Output	Topology	Online				
	Output Power Capacity (Watts)	800 W	1600 W	2400 W	6000 W	10000 W
	Output Power Capacity (VA)	1000 VA	2000 VA	3000 VA	6000 VA	10000 VA
	Output Voltage	220/230/240VAC				
	Frequency Range (Sync.mode)	50 Hz+/- 3 Hz or 60Hz +/- 3 Hz			50 Hz+/- 4 Hz or 60Hz +/- 4 Hz	
	AC Voltage Regulation	± 1%				
	Frequency Range (Batt. Mode)	50 Hz+/- 0.5 Hz or 60Hz +/- 0.5 Hz			50 Hz+/- 0.1 Hz or 60Hz +/- 0.1 Hz	
	Transfer Time (AC to DC)	Zero				
	Waveform Type	Pure Sinewave				
	Total Output Conenctions	IEC C13*3	IEC C13*4	IEC C13*6 + IEC C19*1	Terminal Block	
	Efficiency (AC Mode)	88%			94%	
	Current Crest Ratio	3:1				
External Battery Pack	Charging Current	4A			1 to 4 A (adjustable)	
	Battery Type	Maintenance-free sealed Lead-Acid battery				
	Part Number	**SRVS36BP-9A**	**SRVS72BP-9A**	**SRVS72BP-9A**	**SRVS240BP-9A**	**SRVS240BP-9A**
Physical	Dimension, D X W X H (mm)	Power Module: 288 x 145 x 223	Power Module: 400x 145 x 238	Power Module: 400x 145 x 238	Power Module: 374 x 190 x 336	Power Module: 447x 190 x 336
		Battery Pack: 400 x 145 x 238	Battery Pack: 425 x 190 x 336	Battery Pack: 425 x 190 x 336	Battery Pack: 485 x 190 x 368	Battery Pack: 485 x 190 x 368
	Weight (kgs)	Power Module: 4.4	Power Module: 7.1	Power Module: 7.8	Power Module: 13	Power Module: 16.5
		Battery Pack: 19.6	Battery Pack: 38	Battery Pack: 38	Battery Pack: 60	Battery Pack: 60
Features	LED	✓	✓	✓	✓	✓
	LCD	Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators				
	EPO	X	X	X	✓	✓
	USB communication port	✓	✓	✓	✓	✓
	DB-9 RS-232	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix				
	Input Breaker	✓	✓	✓	✓	✓
	Battery user disconnector	✓	✓	✓	✓	✓
Protection	Surge Energy Rating (Joules)	600 J				
ENVIRONMENT	Humidity	0 to 95% relative humidity, non-condensing				
	Temperature	0° to 40°C at rated load			0° to 40°C at rated load	
	Noise Level	Less than 50dB			Less than 55dB	Less than 58dB
Conformance	Regulatory Approvals	CE			CE	CE

SRVS 230V

Extended Runtime Models (Rack)

SRVS 230V Extended Runtime Models (Rack)			
Model		**SRVS6KRIL**	**SRVS10KRIL**
Input	Input Voltage	220-240Vac	220-240Vac
	Input Connection	Terminal Block	
	Input Frequency (V)	50Hz / 60 Hz	
	Input Voltage Range (V)	110 Vac – 300 Vac ± 3% @ 60% Load	110 Vac – 300 Vac ± 3% @ 60% Load
	Power Factor	≥ 0.99	≥ 0.99
Output	Topology	Online	Online
	Output Power Capacity (Watts)	6000 W	10000 W
	Output Power Capacity (VA)	6000 VA	10000 VA
	Output Voltage	220/230/240VAC	220/230/240VAC
	Frequency Range (Sync.mode)	50 Hz+/- 4 Hz or 60Hz +/- 4 Hz	50 Hz+/- 4 Hz or 60Hz +/- 4 Hz
	AC Voltage Regulation	±1%	±1%
	Frequency Range (Batt. Mode)	50 Hz+/- 0.1 Hz or 60Hz +/- 0.1 Hz	50 Hz+/- 0.1 Hz or 60Hz +/- 0.1 Hz
	Transfer Time (AC to DC)	Zero	Zero
	Waveform Type	Pure Sinewave	Pure Sinewave
	Total Output Connections	Terminal Block	Terminal Block
	Efficiency (AC Mode)	94%	94%
	Current Crest Ratio	3:1	3:1
External Battery Pack	Charging Current	1 to 4 A (adjustable)	1 to 4 A (adjustable)
	Battery Type	Maintenance-free sealed Lead-Acid battery	Maintenance-free sealed Lead-Acid battery
	Part Number	**SRVS240RLBP-9A**	**SRVS240RLBP-9A**
Physical	Dimension, D X W X H (mm)	Power Module: 615 x 438 x 86.5 (2U)	Power Module: 615 x 438 x 86.5 (2U)
		Battery Pack: 606x 438 x 131 (3U)	Battery Pack: 606x 438 x 131 (3U)
	Weight (kgs)	Power Module:14 Battery Pack:63	Power Module:16 Battery Pack:63
Features	LED	**ü**	**ü**
	LCD	Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators	
	EPO	**ü**	**ü**
	USB communication port	**ü**	**ü**
	DB-9 RS-232	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix	Supports Windows 2000/2003/XP/Vista/2008/7/8, Linux, Unix
	Input Breaker	**ü**	**ü**
	Battery user disconnector	**ü**	**ü**
Protection	Surge Energy Rating (Joules)	600J	
ENVIRONMENT	Humidity	0 to 95% relative humidity, non-condensing	0 to 95% relative humidity, non-condensing
	Temperature	0° to 40°C at rated load	0° to 40°C at rated load
	Noise Level	Less than 55dB	Less than 58dB
Conformance	Regulatory Approvals	CE	

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