

Shielded fusegear

Distribute electricity safely and reliably through
shielded indoor/outdoor distribution switchgear







Improved safety & reliability from Schneider Electric



Our low voltage distribution shielded fusegear meets your application requirements with IP2X operator protection.

Important benefits have been achieved by segregating fuseways and busbars and individually shrouding each outgoing circuit, providing operator protection to IPXXB BSEN 60529.

Manufactured from a flame retardant material, allowing full protection and ease of use, as well as safe cabling of any circuit with the adjacent fuseway live.

For additional protection and ease of use, Shielded fuse carriers incorporate a "through grip" fuse handle for removal and insertion, and requiring no tools for fuselink replacement.

The shielded range for indoor and outdoor applications and substation packages tailored to meet customer requirements.

Features & benefits

Features

- Free standing or transformer mounted
- Indoor/outdoor solutions
- Busbar and disconnectors up to 3200A
- Fuseways 400A, 630A and 800A
- Moulded case circuit breakers up to 1600A
- Air circuit breakers up to 3200A
- Combined circuit breaker and fuseway units
- Metering facilities and accessories
- Weatherproof/Vandalproof enclosures up to IP54

Benefits

Safety to personnel

- IPXXB protection under normal working conditions

Adaptability

- Compact and modular design

Durability

- Indoor and outdoor service and proven performance in temperate and tropical climates

Cost Advantage

- Ease of installation/use and low maintenance

Reliability

- Customised applications
- Transformer mounted or free standing - proven outdoor service

Standards

- BSEN61439
- ENA TS 37-2
- BSEN60529

Quality Assurance

- ISO 9001



Application solutions

Schneider Electric LV distribution units can be customised to form part of a total package solution in conjunction with the wider range of switchgear products for residential, commercial and retail developments.

For example, package or unit sub stations comprising of a LV distribution feeder pillar, fuse cabinet or board, MV switches, circuit breakers, ring main units and a transformer.



Housing



Retail



Commercial

Fuse cabinet

The cabinet comprises up to seven outgoing fuseways and incoming disconnector or a combination of fuseways and mccb's up to 1600A. The outdoor enclosure is rated to IP33, is transformer mounted and can be used side by side with MV switchgear on a unit sub station package.

Feeder pillars

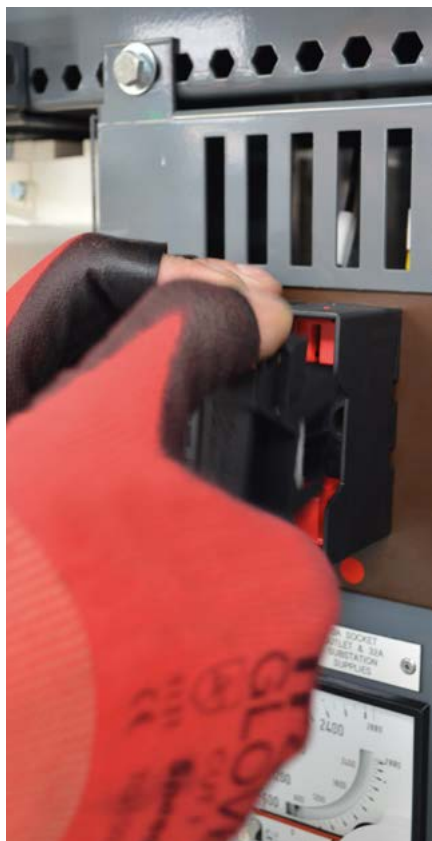
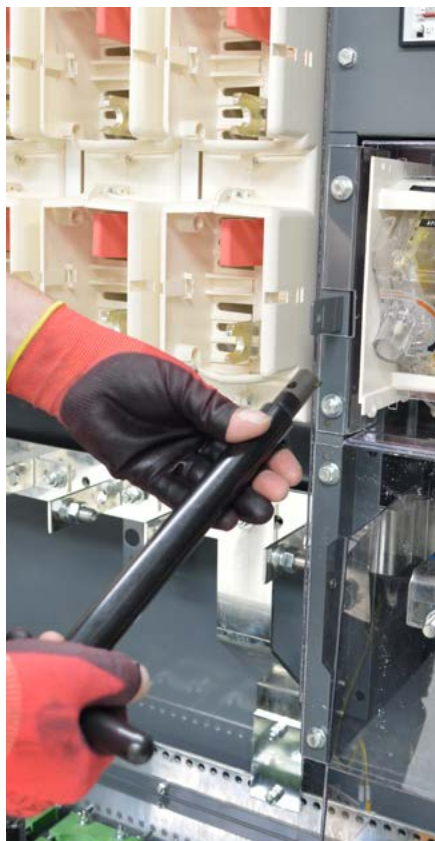
Indoor or outdoor application to IP33 as standard or to IP54 with the addition of filtered ventilation and door gaskets. The feeder pillar can be transformer mounted with up to 15 outgoing fuseways or free-standing with 14 fuseways and cable connected. Shielded fuseways are rated to 800A and have the flexibility to combine with air circuit breakers or moulded case circuit breakers and disconnectors dependant on customer requirement.

For easy access, feeder pillars and fuse cabinets have removable front cross member and individually supported gland plates, are vermin proof and can accommodate larger cables by mounting the enclosure on fabricated roots and plinths.

Fuseboards

Providing IPXXB operator protection with all fuse handles in place, these can be either transformer or floor mounted with the option for top or bottom cable entry.

The fuseboards are for indoor application only whilst offering the same versatility as the feeder pillar for instrumentation and outgoing and incoming circuit requirements.



Disconnectors & disconnector switches

The Shielded fusegear utilises our Saif disconnectors. Manufactured as single phase units, they can be mounted in the standard vertical three phase and neutral assembly, or horizontal for special applications.

The neutral is a bolted type and rated at 50% of phase rating (100% rating available on request). Three types of disconnector are available type 3000, 2000 and 1000 and 3 types of disconnectors switch types - SSD1250, SSD2000 and SSD3200. They are tin plated as standard (suffix T) but may be silver plated (suffix S) to give enhanced ratings. For are opened and closed with the special operating handle and are for fully shrouded operator protection to IPXXB of BSEN 60529, in the open and closed and all normal operating positions.

The disconnecter and operating handle can only be removed when:

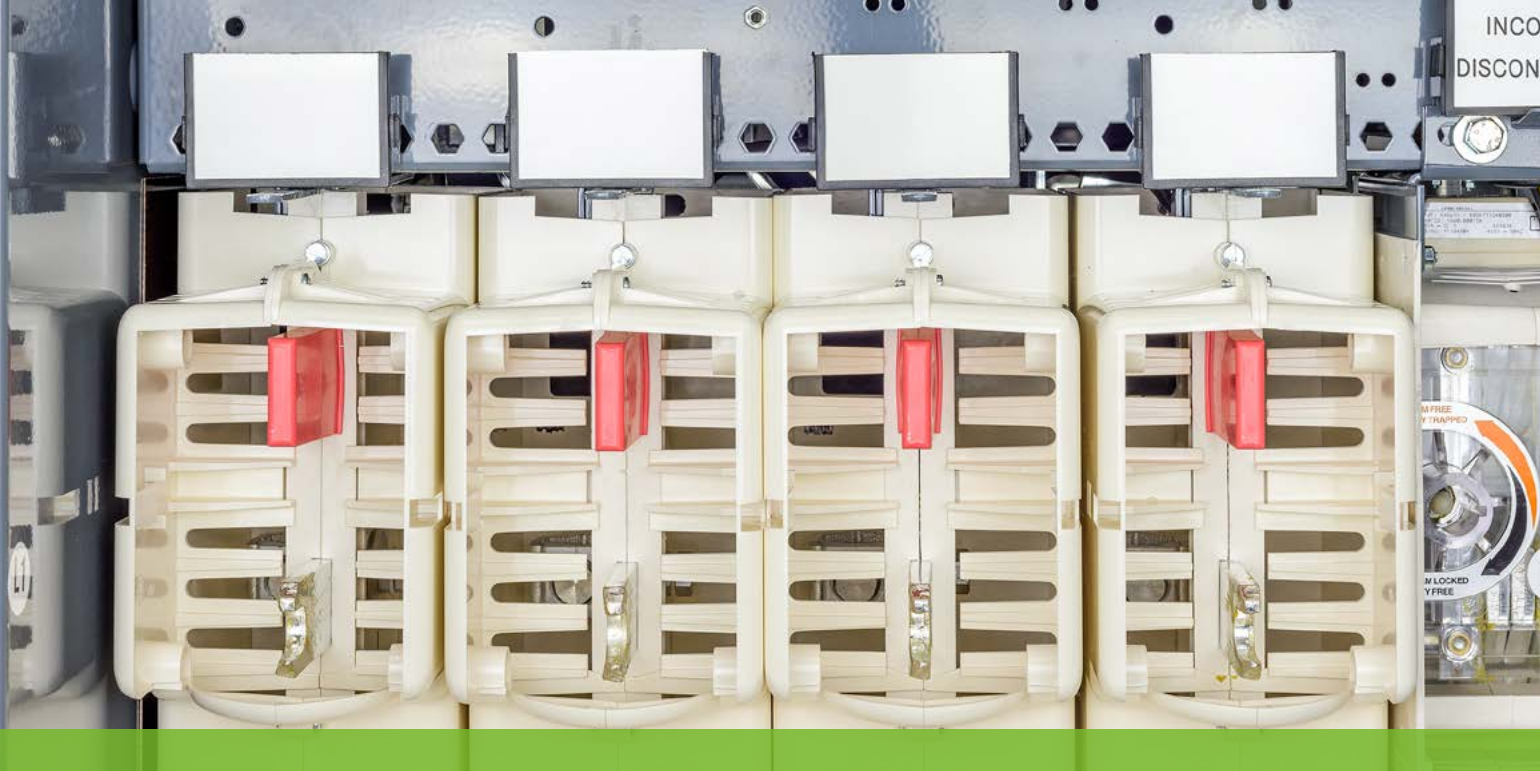
- contacts are fully closed and locked closed
- fully open and locked open

Disconnectors are extensively used within the Electricity Supply Industry. Padlocking and a range of current transformers are available. Load switching circuit breaker solutions are available.

Cable termination

Shielded fuseways are suitable for either mechanical connectors or cable lugs and they can be arranged in four positions to eliminate phase core crossovers.

Large cables can be accommodated.



Circuit breaker solutions

Circuit breakers provide application solutions giving greater flexibility for LV distribution.

With traditional sub-stations, transformer overload protection is provided by the medium voltage unit on the primary side of the transformer. If the overload is one phase of the LV then the protection provided by the MV is minimal.

Therefore, in networks where loadings are not very predictable this can be an unacceptable. An incoming circuit breaker can provide genuine overload protection for the transformer and be able to switch the total LV load in a single, safe operation. The circuit breaker protects the transformer from premature ageing due to persistent overloading.

Outgoing circuit breakers also offer better flexibility and protection especially where a large LV supply is required. Merlin Gerin range of air and moulded case circuit breakers are rated from 250A to 3200A when combined within the LV feeder pillar with Shielded fuseways and disconnectors.

A comprehensive range of accessories is available for the NS/NSX and Masterpact circuit breakers including motor mechanisms and communications which allow for remote operation and control through SCADA.

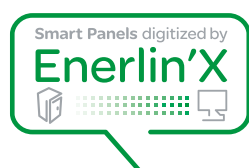




Smart Panels

Data acquisition for shielded fusegear

Shielded pillars can accommodate a multitude of monitoring and remote operating facilities, particularly with circuit breakers. Examples of this include smart panel, which can be fully connected directly to the company IT network, to help your customers improve their energy performance.



1 Measure

Embedded and stand-alone metering & control capabilities

2 Connect

- > Integrated communication interfaces
- > Ready to connect to energy management platforms

3 Save

- > Data-driven energy efficiency actions
- > Real time monitoring and control
- > Access to energy and site information through on-line services



5 types of information

To determine the equipment required according to the information which will be useful to your customer, we can classify this information by making an analogy with a car.



Metering

This is the car's odometer.
Here, the circuit breakers indicate the electricity consumption.



Measurement

This is the speed indicator.
Your customer has a real-time indication of their electricity consumption and can track its rise or fall.



Quality

This is the rev counter. For the same electricity consumption, the installation may be over-used or under-used just like an engine over-revving or under-revving.



Availability

These are the warning lights for the battery, tyre wear, or even the fuel gauge. If one of these lights up, a maintenance operation is required.



Controls

These are the steering wheel levers. Just like the lights, horn, indicators, etc., signals from this control will switch the loads on or off.

Two ways of accessing information



- Directly via the front panel



- Remotely via the company IT network.

Acti 9

Data acquisition

 Metering	 Measurement	 Quality	 Availability (states/statuses)	 Control
			☐	☐
☐				




Compact NSX 100-630

Data acquisition

 Metering	 Measurement	 Quality	 Availability (states/statuses)	 Control
	☐			
	☐		☐	
	☐		☐	☐
			☐	☐



Compact NS Masterpact NT/NW

Data acquisition

 Metering	 Measurement	 Quality	 Availability (states/statuses)	 Control
		☐		
		☐		☐
		☐		
		☐		☐



Shielded accessories



External light



Incoming metering

Padlocking devices

For vertically mounted disconnectors which can be fitted in open or closed positions and for shielded fuseways to lockoff the busbar and cable termination's.

Generator connection

For temporary supplies to be connected to the busbars. IPXXB operator protection when fuse handles are in place.

Incoming metering

Test certificate indicating ratio error and phase angle are available for classes 1.0 and 1.5.

Neutral link

Allows for easy disconnection of neutral for testing purposes as opposed to direct termination of the neutral busbar.

Mechanical cable connectors

Mechanical connectors clamps available for 3 to 4 core cables, 70 to 300mm². Eliminates the need of crimping gear and to check the torque of the termination. The double headed shear bolt ensures joints can be disconnected.

Outgoing metering

Metering of outgoing supplies is possible with the addition of C.T's to the individual fuse contacts.

Instrument panel

Customised to accommodate a variety of instruments and fittings.

Additional accessories

Ammeters / voltmeters max. demand indicators anti condensation heaters 13A RCD socket outlets, test plugs, test terminal blocks, internal lights, streetlighting circuits and extension trunking / plinths.

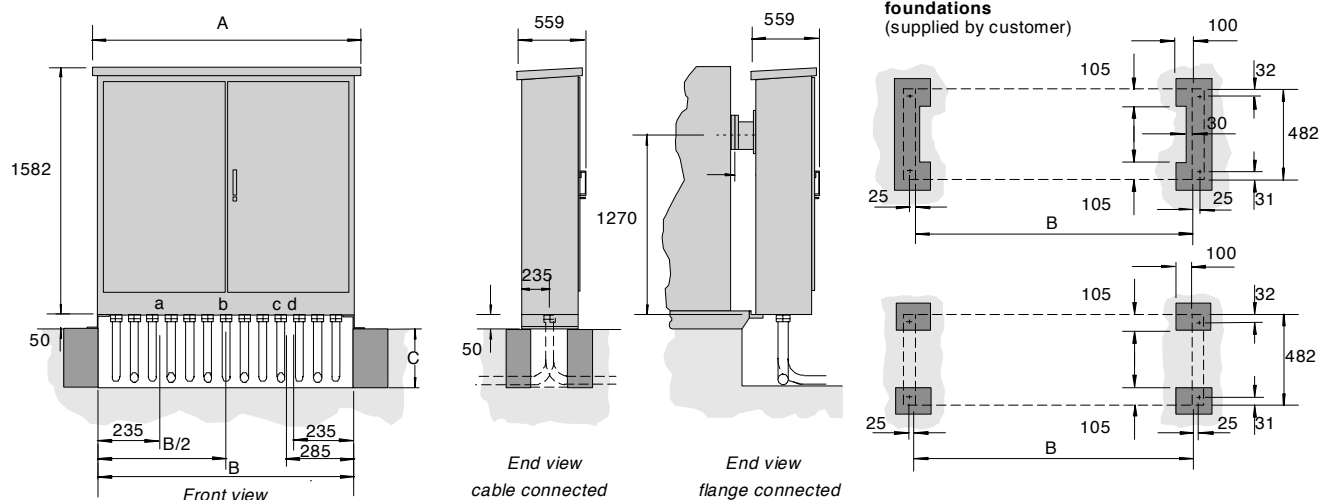
Shielded selection guide

Free air rating of switch disconnectors

Type	Current rating (A) at ambient temperature (°C)						
	35°	40°	45°	50°	55°	60°	65°
SSD 3200S	3150	3200	3200	3200	3098	2917	2728
SSD 2000S	2000	2000	2000	2000	2000	2000	2000
SSD 1250S	1250	1250	1250	1250	1250	1250	1170

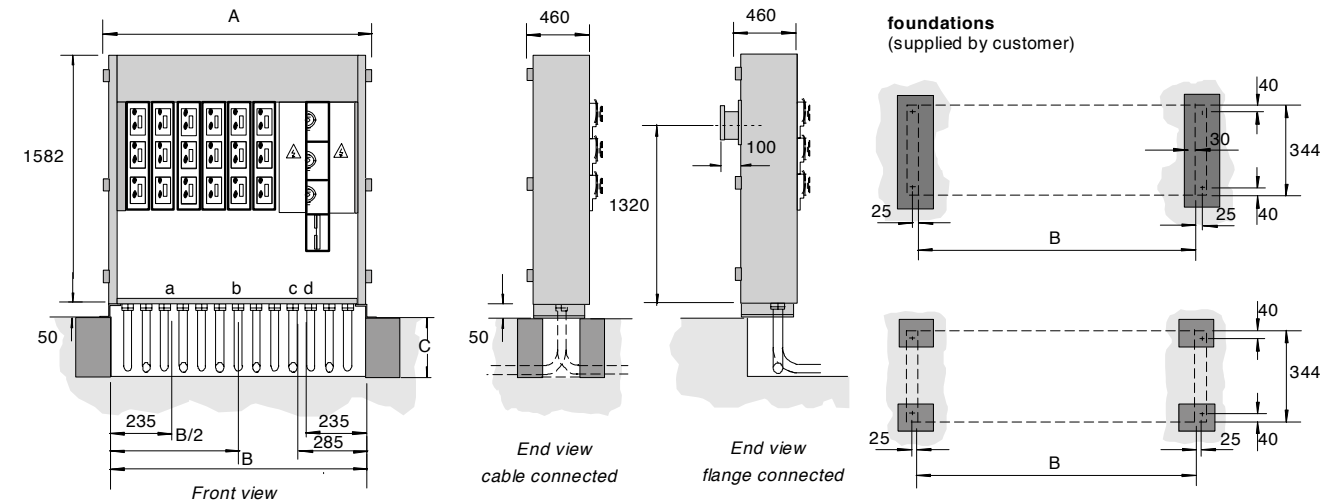
Shielded pillars

Doors	Dimensions (mm)		Maximum number of fuseways			
	A	B	Type 2400 & 1600		Type 800	
Cable Connected			PCC	PCR & PCL	PCC	PCR & PCL
			630 & 400	630 & 400	630 & 400	630 & 400
1	740	710	-	1	2	3
2	1020	990	2	4	4	5
2	1300	1270	6	6	7	7
2	1580	1550	8	8	9	10
2	1860	1830	10	11	11	12
2	2140	2110	12	13	13	14
Flange Connected			PFC	PFR	PFC	PFR
			630 & 400	630 & 400	630 & 400	630 & 400
1	740	710	4	4	4	4
2	1020	990	6	6	6	6
2	1300	1270	8	8	8	8
2	1580	1550	10	11	10	11
2	1860	1830	12	13	12	13
2	2140	2110	14	15	14	15



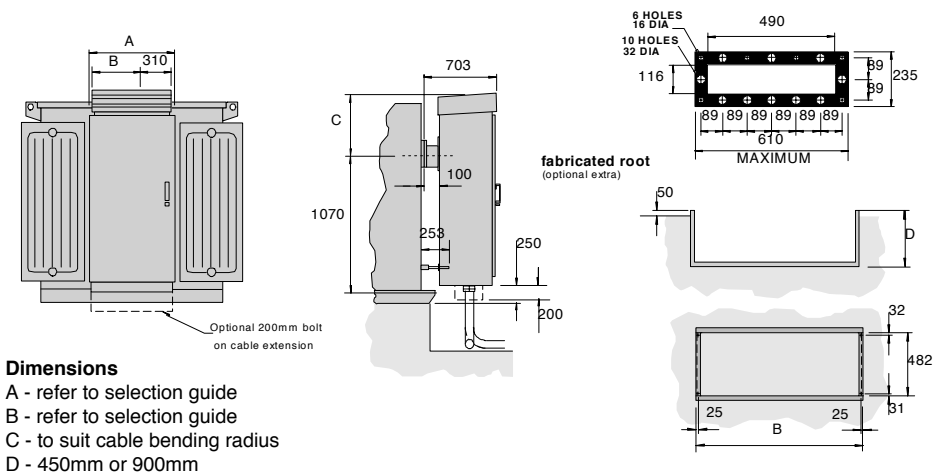
Shielded boards

Dimensions (mm)		Maximum number of fuseways			
A	B	Type 2400 & 1600		Type 800	
Cable Connected		BCC	BCR & BCL	BCC	BCR & BCL
		630 & 400	630 & 400	630 & 400	630 & 400
810	710	-	1	2	3
1090	990	2	4	4	5
1370	1270	6	6	7	7
1650	1550	8	8	9	10
1930	1830	10	11	11	12
2210	2110	12	13	13	14
Flange Connected		P BFC FC	BFR	BFC	BFR
		630 & 400	630 & 400	630 & 400	630 & 400
810	710	4	4	4	4
1090	990	6	6	6	6
1370	1270	8	8	8	8
1650	1550	10	11	10	11
1930	1830	12	13	12	13
2210	2110	14	15	14	15



Shielded cabinets

Type	2500 CFR	1600 CFR	1600 CFR	1600 CFC	800 CFC
Dimension A (mm)	1036	1036	776	656	656
Dimension B (mm)	680	680	430	310	310
Dimension C (mm)	363	363	363	363	363
Disconnecter type	3000S	2000S or 2000T	2000S or 2000T	2000S or 2000T	2000S or 2000T
Maximum number of ways	7	7	5	4	4



Current transformers

Ratio ----/5			Burden (AV) at accuracy class																			
application			Class 5.0					Class 3.0					Class 1.0					Class 0.5				
ways	disconnectors		5.5	5.0	7.5	10	15	5.5	5.0	7.5	10	15	5.5	5.0	7.5	10	15	5.5	5.0	7.5	10	15
200																						
	200	200/400																				
250																						
	250	250/500																				
300																						
	300	300/600																				
400																						
	400	400/800																				
500																						
	500	500/1000																				
600																						
	600	600/12000																				
800																						
	800																					
		800/1600																				
	1000																					
		1000/2000																				
	1200																					
	1600																					
	200																					
		1200/2400																				
	2400																					
	3000																					



Fuseway Types

Details	Type		
	800	630	400
Fuse Carrier Type	YW6	YW6	YW4
Current rating (A)	800	630	400
Operator protection (handles in place or contact covers fitted)	IPXXB	IPXXB	IPXXB
Minimum distance between centres of ways of the same rating (mm)	160	120	120
Approx Weight (kg) (Fuse handle & fuse link)	1.3	1.3	0.9

Free air rating of shielded fuseways

Type	Fuse fitted	Current rating (A) at ambient temperature (°C)						
		35°	40°	45°	50°	55°	60°	65°
Shielded 800	800	Available on request						
Shielded 630	630							
Shielded 400	400							

SAIF disconnectors

Details	Type 3000S	3000T	2000S	2000T	1000S	1000T
Rated insulation voltage (V)	690	690	690	690	690	690
Free air current rating-single phase IEC 60947-3 and BSEN 60947-3	3752	3367	2720	2520	1595	1455
Short time current withstand (kA)	60 for 1.0s 50.0 for 3.0s		60 for 1.0s 35.5 for 3.0s		35.5 for 1.0s 18.0 for 3.0s	
Degree of protection BS 60529	IPXXB		IPXXB		IPXXB	
Isolation distance (mm)	19		19		19	
Weight, single pole (kg)	8.7		6.4		4.0	

SAIF disconnector switches - according to IEC 60947-3, BSEN60947-3

Characteristics	SSD1250	SSD2000	SSD3200
Rated insulation voltage (Ui)	690V	690V	690V
Rated operational voltage (Ue)	240V	240V	240V
Rated impulse withstand voltage (Uimp)	8kV	8kV	8kV
Rated operational current (Ie)	1250A	2000A	3200A
General performance - AC21B	1875A	3000A	4800A
Operational performance - AC21B	500 No Load & 100 operations @1xle 0.95pf"	500 no-load & 100 operations @1xle 0.95pf"	300 no- Load & 100 operations @1xle 0.95pf"
Short time withstand current (1 sec)	24kA	24kA	25kA*
Short time withstand peak current	50.4kA	50.4kA	50.4kA
Degree of protection - IEC 60529	IPXXB	IPXXB	IPXXB
Visible isolation distance (mm)	19mm	19mm	19mm

Rating of Shielded equipment

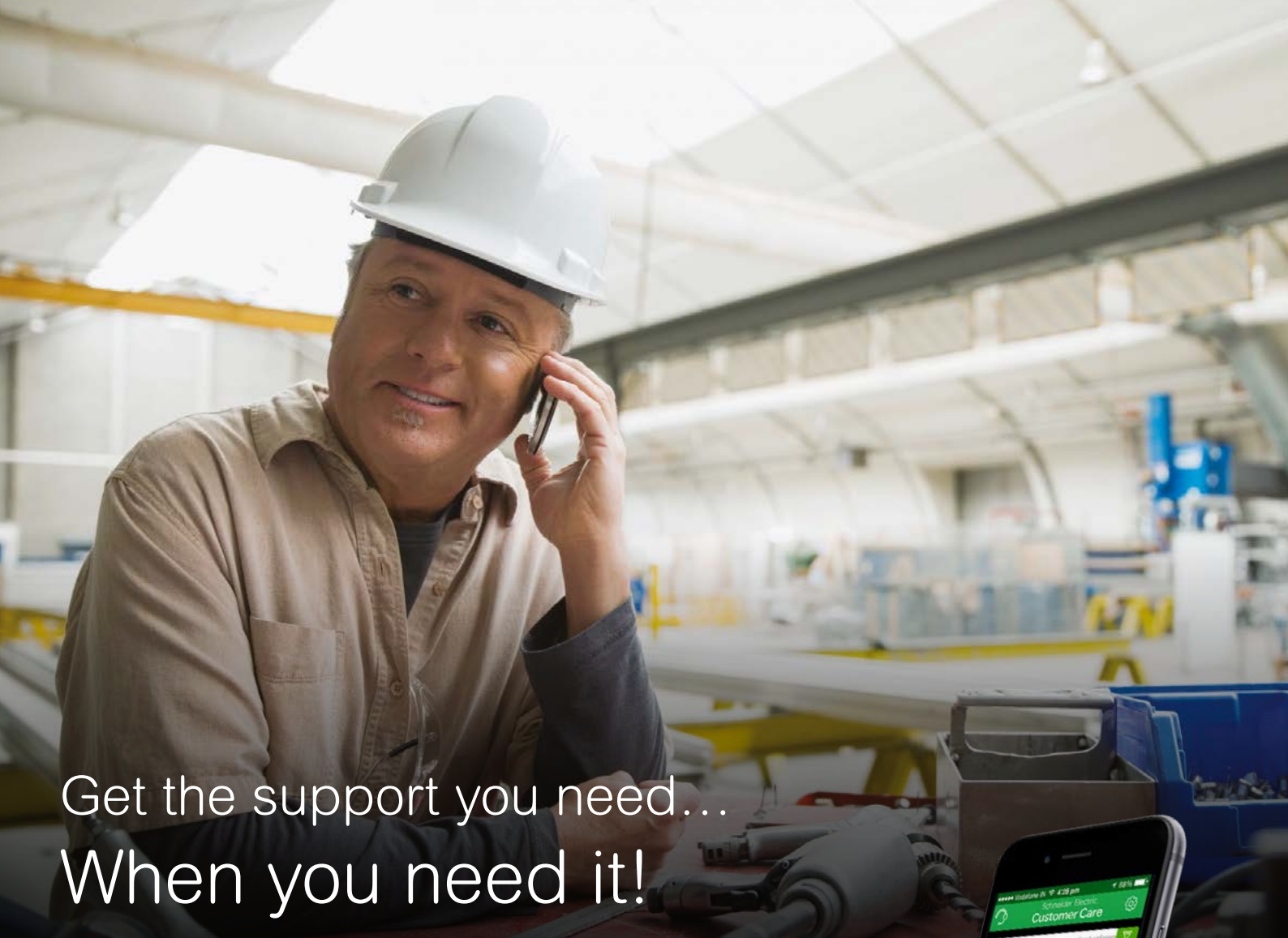
Equipment arrangement	Enclosure protection	Equipment type	Disconnecter**	Current rating(A) at ambient temperature(°C)					
				35°	40°	45°	50°	55°	60°
pillar	IP33	2400*†	3000S	3160	3037	2910	2780	2646	2508
			3000T	2780	2646	2508	2365	2216	2060
		1600	2000S	2100	2000	1900	1790	1650	1510
			2000T	1805	1700	1600	1490	1375	1260
		800	1000S	1340	1290	1240	1150	1065	970
			1000T	1185	1125	1065	1000	935	860
	IP54	2400*	3000S	2814	2693	2570	2444	2314	2181
			3000T	2444	2314	2181	2044	1903	1756
		1600*	2000S	1950	1880	1780	1635	1550	1400
			2000T	1730	1635	1540	1425	1300	1175
		800	1000S	1220	11345	1065	1000	945	890
			1000T	1065	1010	955	905	850	800
board	IP2X	2400*	3000S	3235	3091	2943	2790	2631	2466
			3000T	2871	2733	2591	2433	2290	2130
		1600	2000S	2250	2130	2025	1920	1815	1715
			2000T	1920	1815	1715	1616	1520	1420
		800	1000S	1400	1340	1285	1215	1110	1010
			1000T	1225	1165	1100	1035	975	910
cabinet	IP33	2400	3000s	2500	Available on request				
		1600	2000S	2150	1975	1830	1705	1600	1510
			2000T	1705	1600	1510	1425	1350	1270
		800	1000S	1220	1105	1025	960	900	835
			1000T	1050	985	935	880	825	770

** Ratings also apply until SAIF disconnecter switch

Appendix

General technical information	Pillars				Boards			Cabinets	
Details		2400	1600	800	2400	1600	800	1600	800
Enclosures and protection BSEN 60529 and IEC 529									
weatherproof, vermin proof and ventilated	(IP33)	standard			no			standard	
dust proof with fitted ventilation	(IP54)	optional			no			no	
Indoor mounting frame	(IPXXB)	no			standard			no	
personnel protection		IPXXB			IPXXB			IPXXB	
Disconnectors and mounting									
incoming disconnector type	type	3000	2000	1000	3000	2000	1000	2000	1000
incoming neutral type	type	1500	1000	500	1500	1000	500	1000	500
mounting vertical(V) horizontal(H)		V	V	V	V	V	V	V	V
connection flange(F) cable(C)		F or C	F or C	F or C	F or C	F or C	F or C	F or C	F or C
Rated short time current withstand current BS5486 and IEC439									
flange connected 1 second	(kA)	50	50	35.5	50	50	35.5	50	35.5
flange connected 3 seconds	(kA)	50	35.5	18	50	35.5	18	35.5	18
cable connected 1 second	(kA)	60	60	35.5	60	60	35.5	-	-
cable connected 3 seconds	(kA)	50	35.5	18	50	35.5	18	-	-
Minimum creepage and clearance distance									
with type 800 ways phase to phase	(mm)	25			25			25	
with type 800 ways phase to earth	(mm)	19			19			19	
with type 630 ways phase to phase	(mm)	25			25			25	
with type 630 ways phase to phase	(mm)	19			19			19	
with type 400 ways phase to phase	(mm)	19			25			25	
with type 800 ways phase to phase	(mm)	19			19			19	
Standards listed are applicable to all Types and ratings									
standards are complied with:	(EN)	61439			61439			61439	
	(IEC)	61439			61439			61439	
	(ENA)	37-2			37-2			37-2	
Maximum size of disconnector cable incoming									
(terminal screws: phase and neutral M16)	(mm2)	14xSC960	7xSC960	4xSC960	14xSC960	7xSC960	4xSC960	-	-
		-	2x4C400	1x4C400	-	2x4C400	1x4C400	-	-
		-	4x4C300	3x4C300	-	4x4C300	3x4C300	-	-
Maximum size of outgoing fuseway cable									
type 800(terminal screws: phase and neutral M16 and neutral M12)	(mm2)	4C300	4C300	4C300	4C300	4C300	4C300	4C300	4C300
		SC600	SC600	SC600	SC600	SC600	SC600	SC600	SC600
type 630(terminal screws: phase and neutral M16 and neutral M12)	(mm2)	4C300	4C300	4C300	4C300	4C300	4C300	-	-
type 400(terminal screws: phase and neutral M16 and neutral M12)	(mm2)	4C300	4C300	4C300	4C300	4C300	4C300	-	-

• all terminations are single fixing per cable lug



Get the support you need...
When you need it!

Our Customer Care app provides 24/7, immediate access to technical and support information;

- > Browse FAQs for instant answers
- > Search product references and download datasheets
- > Register your product for additional benefits
- > Browse MySE for delivery and price updates *

Connect to Schneider Electric

If you cannot find what you need, you can also access phone or email support directly via the Customer Care App.



**Download the app today,
Search 'Schneider Care' on your app store**



Life Is On

Schneider
Electric

*Registered MySE account holders only

Schneider Electric is the global specialist in energy management and automation. With revenues of €25 billion in FY2014, our 170,000 employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, our technology, software and services improve the way our customers manage and automate their operations. Our connected technologies will reshape industries, transform cities and enrich lives.

At Schneider Electric, we call this Life Is On.

Schneider Electric

United Kingdom
Stafford Park 5,
Telford
Shropshire
TF3 3BL
Tel: 0870 608 8 608
Fax: 0870 608 8 606

Ireland
Head office, Block A
Maynooth Business Campus
Maynooth, Co. Kildare
W23 Y7X0
Tel: 1 800 805 800
Fax: (01) 601 2201

www.schneider-electric.co.uk

www.schneider-electric.com/ie

January, 2016
SE8771

©2016 Schneider Electric. All Rights Reserved.

All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.

This document has been
printed on recycled paper

