

Enclosures

5.4 Gemini

Blank hinged Panel (continued)

Dimensions	Description	Order Code
Suitable For Box Size 1	Blank Panel H=150mm	1SL0324A00
Suitable For Box Size 2 and 3		1SL0325A00
Suitable For Box Size 4 and 5		1SL0326A00
Suitable For Box Size 6		1SL0327A00
Suitable For Box Size 1	Blank Panel H=300mm	1SL0330A00
Suitable For Box Size 2 and 3		1SL0331A00
Suitable For Box Size 4 and 5		1SL0332A00
Suitable For Box Size 6		1SL0333A00

Mounting Plate

Dimensions	Description	Order Code
Suitable For Box Size 1	Mounting plate H=150mm	1SL0296A00
Suitable For Box Size 2 and 3		1SL0297A00
Suitable For Box Size 4 and 5		1SL0298A00
Suitable For Box Size 6		1SL0299A00
Suitable For Box Size 2 and 3	Mounting plate H=300mm	1SL0302A00
Suitable For Box Size 4 and 5		1SL0303A00
Suitable For Box Size 6		1SL0304A00

Inner Door

Dimensions	Description	Order Code
Suitable For Box Size 1	INNER DOOR SIZE 1	1SL0251A00
Suitable For Box Size 2	INNER DOOR-SIZE 2	1SL0252A00
Suitable For Box Size 3	INNER DOOR-SIZE 3	1SL0253A00
Suitable For Box Size 4	INNER DOOR-SIZE 4	1SL0254A00
Suitable For Box Size 5	INNER DOOR-SIZE 5	1SL0255A00
Suitable For Box Size 6	INNER DOOR-SIZE 6	1SL0256A00

Metal Base Plate

Dimensions	Description	Order Code
Suitable For Box Size 1	BLANK METAL BASE PLATE-SIZE 1	1SL0259A00
Suitable For Box Size 2	BLANK METAL BASE PLATE-SIZE 2	1SL0260A00
Suitable For Box Size 3	BLANK METAL BASE PLATE-SIZE 3	1SL0261A00
Suitable For Box Size 4	BLANK METAL BASE PLATE-SIZE 4	1SL0262A00
Suitable For Box Size 5	BLANK METAL BASE PLATE-SIZE 5	1SL0263A00
Suitable For Box Size 6	BLANK METAL BASE PLATE-SIZE 6	1SL0264A00

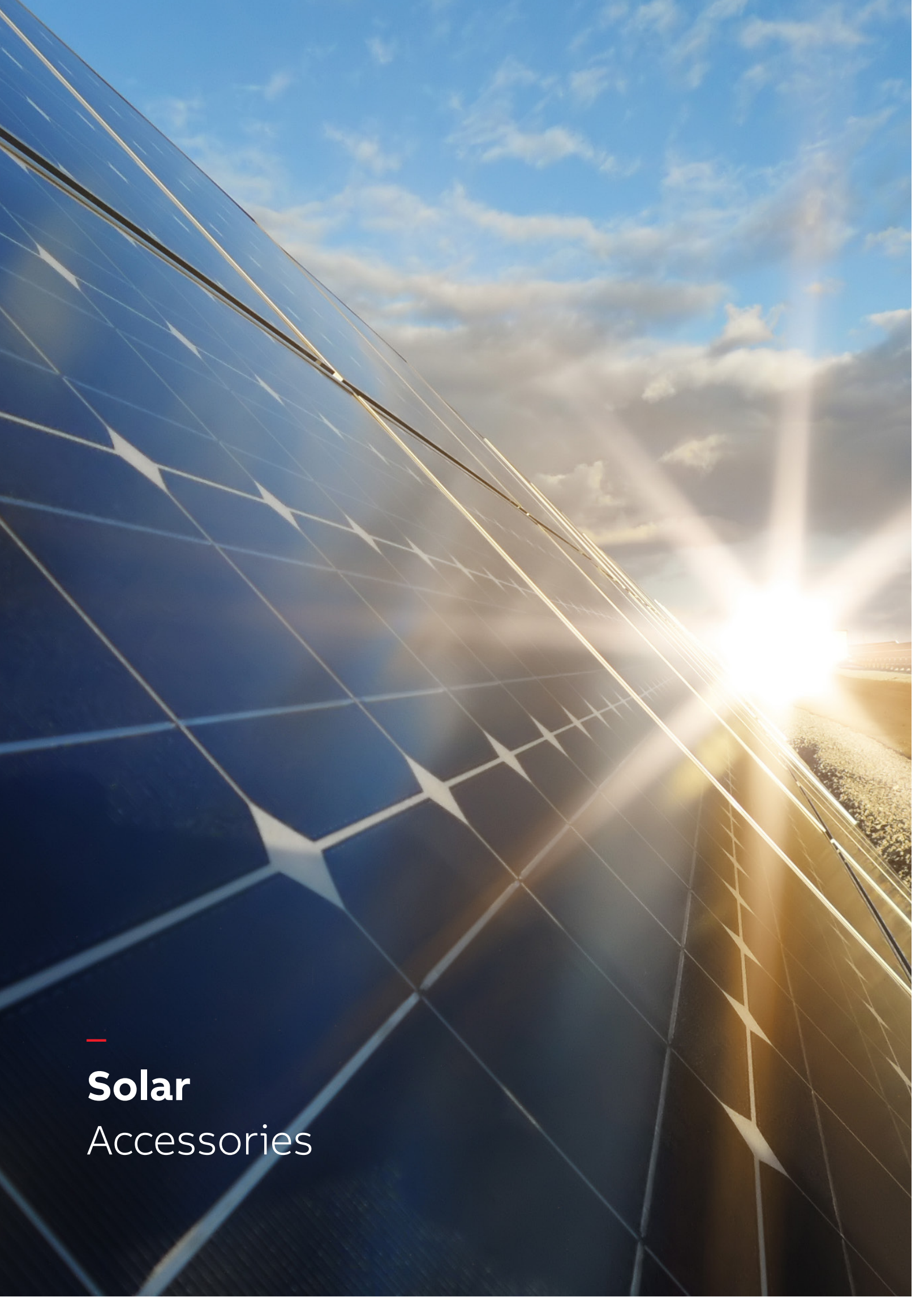
Accessories

Description	Order Code
SQUARE LOCK	1SL0339A00
LOCK AND HANDLE	1SL0340A00
TRIANGLE LOCK	1SL0341A00
FIXING BRACKETS	1SL0342A00
ANTI-CONDENSATION KIT	1SL0351A00
GEMINI SCREW & INSERT	1SL0397A00
GEMINI KEY	1SL0457A00
KIT FOR PADLOCK	1SL0458A00

SECTION 6

Solar Accessories**Solar Accessories**

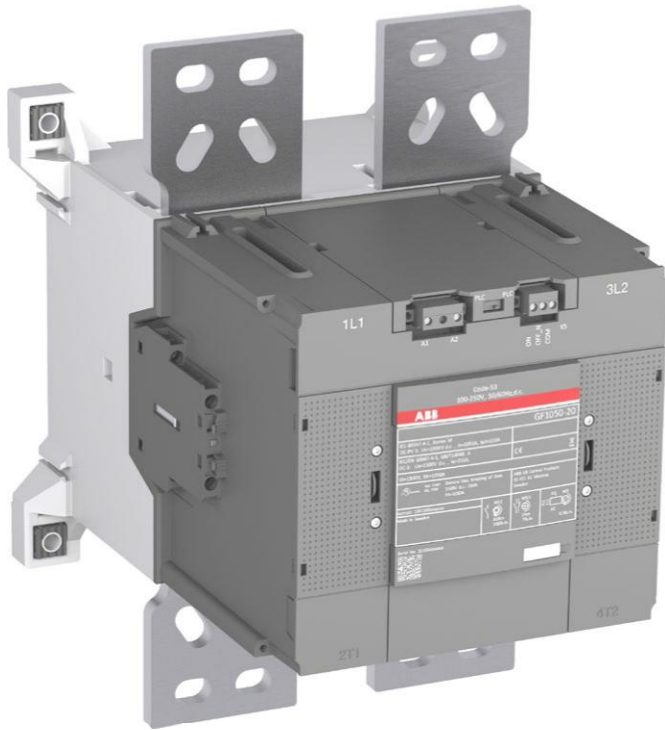
GF contactors for DC switching	6.1
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Solar
Accessories

Solar Accessories

6.1 GF contactors for DC switching



The renewable energy industry is continuously striving towards increasing its efficiency in order to compete with traditional power sources. Photovoltaic (PV) solar power is one of the sources leading the way. In moving from 1000V DC to 1500 V DC, costs of utility-scale power plants are greatly reduced.

The GF range of contactors expands ABB's current AF and GAF PV solar product offering by adding contactor switching capabilities for 1500 V DC.



Energy Efficiency

GF contactors offer tailored solutions to enable remote, automatic and energy efficient switching of 1500 V DC circuits in central PV inverter optimization. The GF contactors are built with ABB's standard low energy electronic coils for safe and controlled operation.



Continuous operation

The GF contactor features AF technology with continuous voltage and current control during the contactors operation. This ensures distinct, safe and energy efficient operations even in unstable networks. Voltage sags, dips or surges pose no threat. The GF contactor secures application uptime.



Speed up your projects

ABB's GF contactor complies with all major international standards. It features AC/DC controlled wide voltage range coils together with easily accessible coil terminals to make easier and quicker product selection and installation.

Solar Accessories

6.2 Din Rail Products for Photovoltaic Applications



Type	Order Code	Protected lines	Impulse current	Max. discharge current	Nominal current In	Voltage protection	Max. cont. operating voltage (Ucpv)
OVR T1-T2 12.5-275s P QS	2CTB815710R1200	1	12.5	80		1.4	230
Type T1-T2 PV							
OVR PV T1-T2 5-1000 P QS	2CTB812050R1000	1+1	5	40	20	3.8/3.8	1100
OVR PV T1-T2 5-1000 P TS QS	2CTB812051R1000	1+1	5	40	20	3.8/3.8	1100
OVR PV T1-T2 5-1500 P QS	2CTB812050R1500	1+1	5	30	20	5/5	1500
OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500	1+1	5	30	20	5/6	1500
Type T2 PV - Uc 1000 V DC							
OVR PV T2 40-1000 P	2CTB802400R1000	1+1		40	20	4	1000
OVR PV T2 40-1000 P TS	2CTB802401R1000	1+1		40	20	4	1000
Type T2 PV - Uc 1500 V DC							
OVR PV T2 40-1500 P	2CTB802400R1500	1+1		40	15	5	1500
OVR PV T2 40-1500 P TS	2CTB802401R1500	1+1		40	10	5	1500

Fuse Holders for Photovoltaic Networks (1000V)

Type	Order Code	No. of	Rated	Rated	Fuse	Blown
E 91/32 PV	2CSM204713R1801	1	32	1000VDC	10 x 38	No
E 91/32 PVs	2CSM204693R1801	1	32	1000VDC	10 x 38	Yes
E 92/32 PV	2CSM204703R1801	2	32	1000VDC	10 x 38	No
E 92/32 PVs	2CSM256913R1801	2	32	1000VDC	10 x 38	Yes

E9F PV 1500 V DC 10x85 mm fuses - Photovoltaic Networks

Type	Order Code	No. of	Rated	Rated	Weight 1 pc/kg	Units Per Package
E91/32 PV1500	2CSM205245R1801	1	30	1500VDC	0,09	5

Type	Order Code	Protected lines	Impulse current	Max. discharge current	Nominal current In	Voltage protection	Max. cont. operating voltage (Ucpv)
OVR T1-T2 12.5-275s P QS	2CTB815710R1200	1	12.5	80		1.4	230
Type T1-T2 PV							
OVR PV T1-T2 5-1000 P QS	2CTB812050R1000	1+1	5	40	20	3.8/3.8	1100
OVR PV T1-T2 5-1000 P TS QS	2CTB812051R1000	1+1	5	40	20	3.8/3.8	1100
OVR PV T1-T2 5-1500 P QS	2CTB812050R1500	1+1	5	30	20	5/5	1500
OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500	1+1	5	30	20	5/6	1500
Type T2 PV - Uc 1000 V DC							
OVR PV T2 40-1000 P	2CTB802400R1000	1+1		40	20	4	1000
OVR PV T2 40-1000 P TS	2CTB802401R1000	1+1		40	20	4	1000
Type T2 PV - Uc 1500 V DC							
OVR PV T2 40-1500 P	2CTB802400R1500	1+1		40	15	5	1500
OVR PV T2 40-1500 P TS	2CTB802401R1500	1+1		40	10	5	1500

Class 1/2 - PV Surge Protective Devices - Photovoltaic Networks

Type	Order Code	No. of Poles	Total Width mm	Max discharge current I _{max} 8/20 kA	Impulse current I _{imp} 10/350 kA	Voltage protection level Up kV	Max. continuous operating voltage Ucpv V
ESP DC550/12.5/PV	7TCA085460R0147	2	72	20	12.5	1.7	550
ESP DC1000/12.5/PV	7TCA085460R0146	2	72	20	12.5	2.4	1000

Solar Accessories

6.2 Din Rail Products for Photovoltaic Applications



S800PV-M-H Two Pole photovoltaic switch disconnectors

Type	Order Code	No. of poles	Rated current	Units Per Package
S802PV-M32-H	2CCP247204R0001	2	32	1
S802PV-M63-H	2CCP247205R0001	2	63	1
S802PV-M100-H	2CCP247212R0001	2	100	1



S800PV-SD Two Pole photovoltaic switch disconnectors

Type	Order Code	No. of poles	Rated current	Units Per Package
S803PV-SD32	2CCF019635R0001	2	32	1
S803PV-SD63	2CCF019634R0001	2	63	1
S803PV-SD125	2CCF019636R0001	2	125	1



S800PV-SD Three Pole photovoltaic switch disconnectors

Type	Order Code	No. of poles	Rated current	Units Per Package
S803PV-SD32	2CCF019637R0001	3	32	1
S803PV-SD63	2CCF019638R0001	3	63	1
S803PV-SD125	2CCF019639R0001	3	125	1



S800PV-SD Four Pole photovoltaic switch disconnectors

Type	Order Code	No. of poles	Rated current	Units Per Package
S804PV-SD32	2CCF019640R0001	4	32	1
S804PV-SD63	2CCF019641R0001	4	63	1
S804PV-SD125	2CCF019642R0001	4	125	1

Solar Accessories

6.2 Din Rail Products for Photovoltaic Applications

S800PV series with cage terminal, B characteristic

Function: protection and control of photovoltaic strings against overloads, short-circuits



S800PV-SP Two Pole MCB Din Rail Mount

Type	Order Code	No. of Poles	Rated Current	Units Per Pack
S802PV-SP5*	2CCF019596R0001	2	5	1
S802PV-SP6*	2CCF019643R0001	2	6	1
S802PV-SP8*	2CCF019644R0001	2	8	1
S802PV-SP10*	2CCF019597R0001	2	10	1
S802PV-SP13*	2CCF019598R0001	2	13	1
S802PV-SP16*	2CCF019599R0001	2	16	1
S802PV-SP20*	2CCF019600R0001	2	20	1
S802PV-SP25*	2CCF019601R0001	2	25	1
S802PV-SP32*	2CCF019602R0001	2	32	1
S802PV-SP40*	2CCF019603R0001	2	40	1
S802PV-SP50*	2CCF019604R0001	2	50	1
S802PV-SP63*	2CCF019605R0001	2	63	1
S802PV-SP80*	2CCF019606R0001	2	80	1
S802PV-SP100*	2CCF019607R0001	2	100	1
S802PV-SP125*	2CCF019608R0001	2	125	1



S800PV-SP Three Pole MCB Din Rail Mount

Type	Order Code	No. of Poles	Rated Current	Units Per Pack
S803PV-SP5*	2CCF019609R0001	3	5	1
S803PV-SP6*	2CCF019645R0001	3	6	1
S803PV-SP8*	2CCF019646R0001	3	8	1
S803PV-SP10*	2CCF019610R0001	3	10	1
S803PV-SP13*	2CCF019611R0001	3	13	1
S803PV-SP16*	2CCF019612R0001	3	16	1
S803PV-SP20*	2CCF019613R0001	3	20	1
S803PV-SP25*	2CCF019614R0001	3	25	1
S803PV-SP32*	2CCF019615R0001	3	32	1
S803PV-SP40*	2CCF019616R0001	3	40	1
S803PV-SP50*	2CCF019617R0001	3	50	1
S803PV-SP63*	2CCF019618R0001	3	63	1
S803PV-SP80*	2CCF019619R0001	3	80	1
S803PV-SP100*	2CCF019620R0001	3	100	1
S803PV-SP125*	2CCF019621R0001	3	125	1



S800PV-SP Four Pole MCB Din Rail Mount

Type	Order Code	No. of Poles	Rated Current	Units Per Pack
S804PV-SP5	2CCF019586R0001	4	5	1
S804PV-SP6	2CCF019647R0001	4	6	1
S804PV-SP8	2CCF019648R0001	4	8	1
S804PV-SP10	2CCF019622R0001	4	10	1
S804PV-SP13	2CCF019623R0001	4	13	1
S804PV-SP16	2CCF019624R0001	4	16	1
S804PV-SP20	2CCF019625R0001	4	20	1
S804PV-SP25	2CCF019626R0001	4	25	1
S804PV-SP32	2CCF019627R0001	4	32	1
S804PV-SP40	2CCF019628R0001	4	40	1
S804PV-SP50	2CCF019629R0001	4	50	1
S804PV-SP63	2CCF019630R0001	4	63	1
S804PV-SP80	2CCF019631R0001	4	80	1
S804PV-SP100	2CCF019632R0001	4	100	1
S804PV-SP125	2CCF019633R0001	4	125	1

* Contact ABB for availability

Solar Accessories

6.3 Summary Moulded case circuit breakers - 1000V T4-T6

Function:	Protection and control of the circuits against overloads and short-circuit for power distribution. All Tmax circuit breakers are suitable for current limiting in standard release.
Application:	Power distribution for commercial and industrial installations.

T4-T5 circuit-breakers for use up to 1150 V AC and T6 circuit-breakers for use up to 1000 V AC

		Tmax T4		Tmax T5		Tmax T6		
Rated uninterrupted current		[A]	250	400/630	630/800			
	Poles		3, 4	3, 4	3, 4			
Rated service voltage, Ue	(AC) 50-60 Hz	[V]	1000	1150	1000	1150	1000	
Rated impulse withstand voltage, Uimp		[kV]	8	8	8	8	8	
Rated insulation voltage, Ui		[V]	1000	1150	1000	1150	1000	
Test voltage at power frequency for 1 min.		[V]	3500	3500	3500	3500	3500	
Rated ultimate short-circuit breaking capacity, Icu			L	V ⁽¹⁾	L	V ⁽¹⁾	L ⁽¹⁾	
	(AC) 50-60 Hz 1000 V	[kA]	12	20	12	20	12	
	(AC) 50-60 Hz 1150 V	[kA]		12		12		
Rated service short-circuit breaking capacity, Ics								
	(AC) 50-60 Hz 1000 V	[kA]	12	12	10	10	6	
	(AC) 50-60 Hz 1150 V	[kA]		6		6		
Rated short-circuit making capacity, Icm								
	(AC) 50-60 Hz 1000 V	[kA]	24	40	24	40	24	
	(AC) 50-60 Hz 1150 V	[kA]		24		24		
Category of use (IEC 60947-2)			A	B (400 A) ⁽²⁾ - A (630 A)	B ⁽³⁾			
Behaviour on isolation			■	■	■	■	■	
Reference Standards			IEC 60947-2	IEC 60947-2	IEC 60947-2	IEC 60947-2	IEC 60947-2	
Thermomagnetic releases		TMD		■				
		TMA		■		■	■	
Electronic trip units		PR221DS/LS/I	■	■	■	■	■	
		PR221DS/I	■	■	■	■	■	
		PR222DS/P_LSI	■	■	■	■	■	
		PR222DS/P_LSIG	■	■	■	■	■	
		PR222DS/PD_LSI	■	■	■	■	■	
		PR222DS/PD_LSIG	■	■	■	■	■	
		Ekip M-LRIU	■		■			
		PR223EF	■		■		■	
Terminals			FC Cu - F* - EF*	FC Cu - F* - EF*	F - FC CuAl** - R - EF* - ES*			
Version			F, P, W	F	F, P, W ⁽⁴⁾	F	F ⁽⁵⁾	
Mechanical life		[No. operations]	20000	20000	20000	20000	20000	
		[No. hourly operations]	240	120	120	120	120	
Basic fixed dimensions ⁽⁶⁾		3 poles	W [mm]	105	140	210		
		4 poles	W [mm]	140	184	280		
			D [mm]	103.5	103.5	103.5		
			H [mm]	205	205	268		
Weight		fixed	3/4 poles	[kg]	2.35 / 3.05	2.35 / 3.05	3.25 / 4.15	3.25 / 4.15
		plug-in	3/4 poles	[kg]	3.6 / 4.65		5.15 / 6.65	
		withdrawable	3/4 poles	[kg]	3.85 / 4.9		5.4 / 6.9	

TERMINAL CAPTION

F = Front
FC Cu = Front copper cables
FC CuAl = Front for copper cables CuAl

R = Rear
F = Fixed circuit-breakers
P = Plug-in circuit breakers
W = Withdrawable circuit-breakers

⁽¹⁾ Power supply only from the top
⁽²⁾ I_{cw} = 5 kA
⁽³⁾ I_{cw} = 7.6 kA (630 A) - 10 kA (800 A)

⁽⁴⁾ Tmax T5 630 is only available in the fixed version
⁽⁵⁾ For T6 in the withdrawable version, please ask ABB SACE

⁽⁶⁾ Circuit-breaker without terminal covers
* Ordering extracodes
** Ordering standard 1SDA0 codes

Solar Accessories

6.4 Moulded case circuit breakers - 1000V T4-T6

Function: Protection and control of the circuits against overloads and short-circuit for power distribution.
All Tmax circuit breakers are suitable for current limiting in standard release.

Application: Power distribution for commercial and industrial installations.



Circuit-breakers for use up to 1150 V AC and 1000 V DC

T4 250 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Thermomagnetic trip unit - TMD and TMA	In	V
		Icu@1000V AC = 20kA Icu@1150V AC=12kA
TMD	22-32A	1SDA063410R1
TMD	36-52A	1SDA063411R1
TMA	56-80A	1SDA063412R1
TMA	70-100A	1SDA063413R1
TMA	87-125A	1SDA063414R1
TMA	112-160A	1SDA063415R1
TMA	140-200A	1SDA063416R1
TMA	175-250A	1SDA063417R1

T4 250 – Fixed (F) – 4 Poles - Front terminals for copper cables (FC Cu) - DC Breaker

Thermomagnetic trip unit - TMD and TMA	In	V
		Icu@1000V DC=40kA
TMD*	22-32A	1SDA054497R1
TMD*	35-50A	1SDA054498R1
TMD*	56-80A	1SDA054499R1
TMD*	70-100A	1SDA054500R1
TMD*	87-125A	1SDA054501R1
TMD*	112-160A	1SDA054502R1
TMD*	140-200A	1SDA054503R1
TMD*	175-250A	1SDA054504R1

Note: For DC applications only TMA releases are available

T4 250 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Electronic trip unit	In	L	Price	V
				Icu@1000V AC = 20kA Icu@1150V AC=12kA
PR221DS-LS/I	40-100A	1SDA054505R1	R 13 707,58	1SDA054513R1
PR221DS-LS/I	100-250A	1SDA054509R1	R 15 192,43	1SDA054517R1

T4 250 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Electronic trip unit	In	L	Price	V
				Icu@1000V AC = 20kA Icu@1150V AC=12kA
PR221DS-LS/I*	224-320A	1SDA063477R1	R 18 803,26	1SDA063485R1
PR221DS-LS/I	280-400A	1SDA054535R1	R 20 370,47	1SDA054539R1

Note: For DC applications only TMA releases are available

T5 400 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Thermomagnetic trip unit -TMA	In	V
		Icu@1000V AC = 20kA Icu@1150V AC=12kA
TMA*	224-320A	1SDA063437R1
TMA*	280-400A	1SDA063438R1



Solar Accessories

6.4 Moulded case circuit breakers - 1000V T4-T6

T5 400 – Fixed (F) – 4 Poles - Front terminals for copper cables (FC Cu)

Thermomagnetic trip unit -TMA	In	V
		Icu@1000V AC = 20kA Icu@1150V AC=12kA
TMA*	224-320A	1SDA054531R1
TMA*	280-400A	1SDA054532R1

Note: For DC applications only TMA releases are available

Function: Protection and control of the circuits against overloads and short-circuit for power distribution. All Tmax circuit breakers are suitable for current limiting in standard release.

Application: Power distribution for commercial and industrial installations.

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T5 630 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Thermomagnetic trip unit -TMA	In	V
		Icu@1000V AC = 20kA Icu@1150V AC=12kA
TMA	350-500A	1SDA063439R1

Note: For DC applications only TMA releases are available

T5 630 – Fixed (F) – 3 Poles – Front terminals for copper cables (FC Cu)

Electronic trip unit	In	L	Price	V
				Icu@1000V AC = 20kA Icu@1150V AC=12kA
		Icu@1000V AC = 12kA		
PR221DS-LS/I	252-630A	1SDA054543R1	R 37 402,82	1SDA054547R1

Note: For DC applications only TMA releases are available

T5 630 – Fixed (F) – 4 Poles - Front terminals for copper cables (FC Cu)- DC Breaker

Thermomagnetic trip unit -TMA	In	V
		Icu@1000V DC=40kA
TMA*	350-500A	1SDA054533R1

T6 630/800 – Fixed (F) – 3 Poles – Front terminals (F)

Electronic trip unit	In	L
		Icu@1000V AC = 12kA
PR221DS-LS/I*	252-630A	1SDA060319R1
PR221DS-LS/I	320-800A	1SDA060323R1

Note: For DC applications only TMA releases are available

Solar Accessories

6.5 Moulded case circuit breakers - Tmax T4-T5 800VAC

Circuit-breakers for use up to 800V AC

T4- Fixed (F) - 3 poles - Front terminals (F)

Thermomagnetic trip unit - TMA	In	V
		Icu@800Vac = 25kA
TMA	56-80A	1SDA083658R1
TMA	70-100A	1SDA083659R1
TMA	88-125A	1SDA083660R1
TMA	112-160A	1SDA083661R1
TMA	140-200A	1SDA083662R1
TMA	175-250A	1SDA083663R1

T5- Fixed (F) - 3 poles - Front terminals (F)

Thermomagnetic trip unit - TMA	In	V
		Icu@800Vac = 32kA
TMA	224-320A	1SDA083664R1
TMA	280-400A	1SDA083665R1
TMA	350-500A	1SDA083666R1

T4- Fixed (F) - 4 poles - Front terminals (F)

Thermomagnetic trip unit - TMA	In	V
		Icu@800Vac = 25kA
TMA	56-80A	1SDA083647R1
TMA	70-100A	1SDA083648R1
TMA	88-125A	1SDA083649R1
TMA	112-160A	1SDA083650R1
TMA	140-200A	1SDA083651R1
TMA	175-250A	1SDA083652R1

T5- Fixed (F) - 4 poles - Front terminals (F)

Thermomagnetic trip unit - TMA	In	V
		Icu@800Vac = 32kA
TMA	224-320A	1SDA083653R1
TMA	280-400A	1SDA083654R1
TMA	350-500A	1SDA083655R1

Solar Accessories: Automatic Circuit Breakers

6.6 Fixed version for power distribution

SACE Emax E2.2B-N Orientable rear terminals (HR)

Size	Iu	Icu (900 V)	Type	3 Poles	4 Poles
				Code	Code
E2.2S	1250	50	E2.2S/E9 1250 Ekip Touch LSI FHR 900V	1SDA104321R1	1SDA104336R1
			E2.2S/E9 1250 Ekip Tch LSI FHR 900V	1SDA104319R1	1SDA104334R1
	2000	50	E2.2S/E9 2000 Ekip Touch LSI FHR 900V	1SDA104326R1	1SDA104341R1
			E2.2S/E9 2000 Ekip Tch LSI FHR 900V	1SDA104324R1	1SDA104339R1
E2.2H	1250	65	E2.2H/E9 1250 Ekip Touch LSI FHR 900V	1SDA104351R1	1SDA104366R1
			E2.2H/E9 1250 Ekip Tch LSI FHR 900V	1SDA104349R1	1SDA104364R1
	2000	65	E2.2H/E9 2000 Ekip Touch LSI FHR 900V	1SDA104356R1	1SDA104371R1
			E2.2H/E9 2000 Ekip Tch LSI FHR 900V	1SDA104354R1	1SDA104369R1
2500	65	E2.2H/E9 2500 Ekip Touch LSI FHR 900V	1SDA104361R1	1SDA104376R1	
		E2.2H/E9 2500 Ekip Tch LSI FHR 900V	1SDA104359R1	1SDA104374R1	

Solar Accessories: Automatic Circuit Breakers

6.6 Fixed version for power distribution



SACE Emax E1.2N Orientable rear terminals (HR)

Size	Iu	Icu (800 V)	Type	3 Poles	4 Poles
				Code	Code
E1.2N	1250	35	E1.2N/E9 1250 Ekip Touch LSI FHR 800V	1SDA104278R1	1SDA104288R1
			E1.2N/E9 1250 Ekip Touch LSI G FHR 800V	1SDA104276R1	1SDA104286R1

Solar Accessories: Automatic Circuit Breakers

6.7 Withdrawable version for power distribution



SACE Emax E1.2N Mobile part of withdrawable circuit-breaker (MP)

Size	Iu	Icu (800 V)	Type	3 Poles	4 Poles
				Code	Code
E1.2N	1250	35	E1.2N/E9 1250 Ekip Touch LSI 800V	1SDA104298R1	1SDA104308R1
			E1.2N/E9 1250 Ekip Touch LSI G 800V	1SDA104296R1	1SDA104306R1



SACE Emax E2.2S-H Mobile part of withdrawable circuit-breaker (MP)

Size	Iu	Icu (900 V)	Type	3 Poles	4 Poles
				Code	Code
E2.2S	1250	50	E2.2S/E9 1250 Ekip Touch LSI 900V	1SDA104441R1	1SDA104456R1
			E2.2S/E9 1250 Ekip Tch LSI G 900V	1SDA104439R1	1SDA104454R1
2000	50	50	E2.2S/E9 2000 Ekip Touch LSI 900V	1SDA104446R1	1SDA104461R1
			E2.2S/E9 2000 Ekip Tch LSI G 900V	1SDA104444R1	1SDA104459R1
2500	50	50	E2.2S/E9 2500 Ekip Touch LSI 900V	1SDA104451R1	1SDA104466R1
			E2.2S/E9 2500 Ekip Tch LSI G 900V	1SDA104449R1	1SDA104464R1
E2.2H	1250	65	E2.2H/E9 1250 Ekip Touch LSI 900V	1SDA104471R1	1SDA104486R1
			E2.2H/E9 1250 Ekip Tch LSI G 900V	1SDA104469R1	1SDA104484R1
2000	65	65	E2.2H/E9 2000 Ekip Touch LSI 900V	1SDA104476R1	1SDA104491R1
			E2.2H/E9 2000 Ekip Tch LSI G 900V	1SDA104474R1	1SDA104489R1
2500	65	65	E2.2H/E9 2500 Ekip Touch LSI 900V	1SDA104481R1	1SDA104496R1
			E2.2H/E9 2500 Ekip Tch LSI G 900V	1SDA104479R1	1SDA104494R1



Cradles for Withdrawable Air Circuit Breakers and Switch-disconnectors

Fixed Part for E1.2

Size	Performance	Iu Range	Type of terminal	Type	3 Poles
					Code
E1.2	B, C, N, L	250 – 1600	HR – HR	E1.2 W FP Iu=1600 HR HR	1SDA073907R1



Cradles for Withdrawable Air Circuit Breakers and Switch-disconnectors

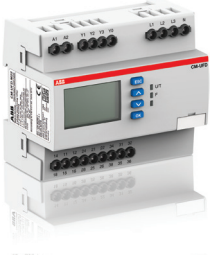
Fixed Part for E2.2

Size	Performance	Iu Range	Type of terminal	Type	3 Poles	4 Poles
					Code	Code
E2.2	B, N, S, H	250 – 2000	HR – HR	E2.2 W FP Iu=2000 HR HR	1SDA073909R1	1SDA073910R1
	N, S, H	2500	HR – HR	E2.2 W FP Iu=2500 HR HR	1SDA073911R1	1SDA073912R1

Note: Phase separators are mandatory with Emax 2/E9 circuit breakers. For withdrawable version, phase separators have to be ordered as loose part. For fixed version, they are provided as standard.

Solar Accessories

6.8 Grid feeding monitoring relays



Application

The multifunctional grid feeding monitoring relays are designed to monitor several grid parameters when feeding energy into the public grid.

The intention is to trip a section switch which is connected between the distributed generation and the public grid in order to disconnect the distributed generation in case of problems (e.g. unstable grid), faults or maintenance on the grid.

Description

- Monitoring of voltage and frequency in single and three-phase mains 2-wire, 3-wire or 4-wire
- Overvoltage and undervoltage monitoring, 10 minutes average value
- Over frequency and under frequency monitoring, 10 minutes average value
- Interrupted neutral detection
- 3 control inputs for remote trip, feedback signal and external signal
- LEDs for the indication of operational states

Characteristics of CM-UFD.M22

- Rate of change of frequency monitoring (ROCOF)

Characteristics of CM-UFD.M31

- Rate of change of frequency monitoring (ROCOF)
- Vector shift detection

Characteristics of CM-UFD.M33

- Rate of change of frequency monitoring (ROCOF)
- Vector shift detection
- Default setting according to G59/3; G83/2 standard

Characteristics of CM-UFD.M34M

- Rate of change of frequency monitoring (ROCOF)
- Vector shift detection
- Default settings in accordance with the DRRG standard of DEWA
- Modbus RTU communication interface

Ordering details

Rated control supply voltage = measuring voltage	Standard	Type	Order code
24-240 V AC/DC	CEI 0-21: 2014-09 + CEI 0-21, V1: 2014-1	CM-UFD.M22	1SVR560730R3400
24-240 V AC/DC	VDE-AR-N 4105 and BDEW	CM-UFD.M31	1SVR560730R3401
24-240 V AC/DC	G59/3; G83/2	CM-UFD.M33	1SVR560730R3402
24-240 V AC/DC	CEI 0-21	CM-UFD.M22M with Modbus RTU	1SVR560731R3700
24-240 V AC/DC	VDE-AR-N 4105	CM-UFD.M31M with Modbus RTU	1SVR560731R3701
24-240 V AC/DC	G59/3; G83/2	CM-UFD.M33M with Modbus RTU	1SVR560731R3702
24-240 V AC/DC	DRRG standard of DEWA	CM-UFD.M34M with Modbus RTU	1SVR560731R3703

■ Prices on request (POR). Please contact ABB.

Switch-disconnectors OTDC and OTDCP

6.9 Front operated switch-disconnectors, IEC



OTDC100...250E11

Single circuit, 1000 VDC, IEC - 100...250 A

No. of poles	Rated operat. current [A] DC 21 / 1000 V	Type	Order number
Front operated, mechanism between the poles. OTDC_EPP types include pre-mounted connection bars.			
2	100	OTDC100E11	1SCA125821R1001
2	160	OTDC160E11	1SCA123745R1001
2	200	OTDC200E11	1SCA125626R1001
2	250	OTDC250E11	1SCA125865R1001



OTDC315...800F11

Single circuit, 1000 VDC, IEC - 315...800 A

No. of poles	Rated operat. current [A] PV2 / 1000 V	Type	Order number
Front operated, mechanism between the poles. OTDC_EPP types include pre-mounted connection bars.			
2	315	OTDC315F11	1SCA158172R1001
2	400	OTDC400F11	1SCA158196R1001
2	500	OTDC500F11	1SCA158220R1001
2	630	OTDC630F11	1SCA158244R1001
2	800	OTDC800F11	1SCA158853R1001



OTDC315...800FV11

Single circuit, 1500 VDC, IEC - 315...800 A

No. of poles	Rated operat. current [A] PV2 / 1500 V	Type	Order number
Front operated, mechanism between the poles. OTDC_EPP types include pre-mounted connection bars.			
2	315	OTDC315FV11	1SCA158178R1001
2	400	OTDC400FV11	1SCA158202R1001
2	500	OTDC500FV11	1SCA158226R1001
2	630	OTDC630FV11	1SCA158250R1001
2	800	OTDC800FV11	1SCA158856R1001

Recommended handles and shafts

Suitable for switches	Mounting	Type	Order number
OTDC100...250	Direct mount handle	OTDV250EK	1SCA127390R1001
OTDC315...800	Direct mount handle	OTDV400EK	1SCA130579R1001
OTDC100...250	Door mount handle	OHB65J6*	1SCA022380R9660
OTDC100...250	Shaft	OXPP6X210*	1SCA022295R6080
OTDC315...800	Door mount handle	OHB95J12*	1SCA022381R0830
OTDC315...800	Shaft	OXPP12X185*	1SCA022325R6710

Fuse Switch XLP

6.10 Fuse switch horizontal



Fuse Switch XLP - 1 Pole

Rated op. current AC-20...23A ≤ 690V [A]	Fuse size	No. of poles	Type	Order number
160	00	1	XLP00-1P-2M8	1SEP600113R0003
250	1	1	XLP1-1P-M10	1SEP600116R0003
400	2	1	XLP2-1P	1SEP600122R0001
630	3	1	XLP3-1P	1SEP600126R0001

6



Fuse Switch XLP - 2 Pole

Rated op. current AC-20...23A ≤ 690V [A]	Fuse size	No. of poles	Type	Order number
160	00	2	XLP00-2P-4M8	1SEP600114R0003
250	1	2	XLP1-2P-4M8	1SEP600117R0003
400	2	2	XLP2-2P	1SEP600123R0001
630	3	2	XLP3-2P	1SEP600127R0001



Fuse Switch XLP - 3 Pole

Rated op. current AC-20...23A ≤ 690V [A]	Fuse size	No. of poles	Type	Order number
160	00	3	XLP00-6M8	1SEP101890R0004
250	1	3	XLP1-6M10	1SEP101891R0004
400	2	3	XLP2	1SEP101892R0001
630	3	3	XLP3	1SEP101975R0001



Fuse Switch XLP - 4 Pole

Rated op. current AC-20...23A ≤ 690V [A]	Fuse size	No. of poles	Type	Order number
160	00	4	XLP00-4P-8M8	1SEP600115R0003
250	1	4	XLP1-4P-8M8	1SEP600119R0003
400	2	4	XLP2-4P	1SEP600124R0001
630	3	4	XLP3-4P	1SEP600128R0001

Fuse Switch ZLBM

6.11 Fuse switch vertical



Fuse Switch ZLBM - 3 Pole

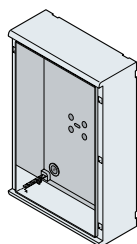
Rated op. current AC-20...23A ≤ 690V [A]	Fuse size	No. of poles	Type	Order number
160	00	3	ZLBM00-3P-M8	1SEP620010R3000
250	1	3	ZLBM1-3P-M12	1SEP620011R3000
400	2	3	ZLBM2-3P-M12	1SEP620012R3000
630	3	3	ZLBM3-3P-M12	1SEP620013R3000
800	2	3	ZLBM800A-3P-M12	1SEP620014R3000
1250	3	3	ZLBM1250A-3P-M12	1SEP620015R3000



InLine II in proE power switchboard

Solar Accessories

6.12 Gemini Enclosure



Enclosure Box without door

Dimensions			Description	Order Code
H	W	D		
400	335	210	BOX-SIZE 1	1SL0221A00
550	460	260	BOX-SIZE 2	1SL0222A00
700	460	260	BOX-SIZE 3	1SL0223A00
700	580	260	BOX-SIZE 4	1SL0224A00
885	585	360	BOX-SIZE 5	1SL0225A00
1005	840	360	BOX-SIZE 6	1SL0226A00

Transparent Door

Dimensions	Description	Order Code
Suitable For Box Size 1		1SL0241A00
Suitable For Box Size 2		1SL0242A00
Suitable For Box Size 3	TRANSPARENT DOOR-SIZE	1SL0243A00
Suitable For Box Size 4		1SL0244A00
Suitable For Box Size 5		1SL0245A00
Suitable For Box Size 6		1SL0246A00

Solid Door

Dimensions	Description	Order Code
Suitable For Box Size 1		1SL0231A00
Suitable For Box Size 2		1SL0232A00
Suitable For Box Size 3	OPAQUE DOOR-SIZE	1SL0233A00
Suitable For Box Size 4		1SL0234A00
Suitable For Box Size 5		1SL0235A00
Suitable For Box Size 6		1SL0236A00

Uprights for Din Kit

Dimensions	Description	Order Code
Suitable For Box Size 1	UPRIGHTS-SIZE 1	1SL0283A00
Suitable For Box Size 2	UPRIGHTS-SIZE 2	1SL0284A00
Suitable For Box Size 3 and 4	UPRIGHTS-SIZE 3-4	1SL0285A00
Suitable For Box Size 5	UPRIGHTS-SIZE 5	1SL0286A00
Suitable For Box Size 6	UPRIGHTS-SIZE 6	1SL0287A00

Din Rail Kit, Din cutout and Din Rail

Dimensions	Description	Order Code
Suitable For Box Size 1	Din Rail Kit H150 mm	1SL0307A00
Suitable For Box Size 2 and 3	Din Rail Kit H150 mm	1SL0308A00
Suitable For Box Size 4 and 5	Din Rail Kit H150 mm	1SL0309A00
Suitable For Box Size 6	Din Rail Kit H150 mm	1SL0310A00

Blank hinged Panel

Dimensions	Description	Order Code
Suitable For Box Size 1		1SL0318A00
Suitable For Box Size 2 and 3	Blank Panel H=75mm	1SL0319A00
Suitable For Box Size 4 and 5		1SL0320A00
Suitable For Box Size 6		1SL0321A00