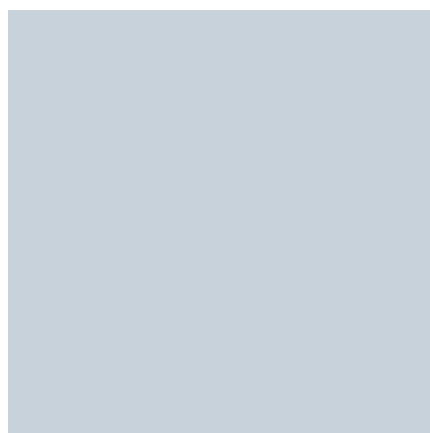


ENSTO

LOAD BREAK SWITCHES

Ensto Compact



Ensto

Enclosures and Components

Ensto also offers enclosed switches; being assemblies of Ensto Cubo enclosures and load break switches.



Ensto is an international industrial group and a family business specialising in the development, manufacturing and marketing of electrical systems and accessories.

Ensto Enclosures and Components is a source of expertise in enclosure technology. Our enclosure solutions are complemented by components specially developed to meet the needs of panel builders: terminals, switches and fuse bases. Our products are designed and tested to

meet a wide range of applications and to operate under even the most extreme conditions.

We aim to solve our customers' problems through expertise and co-operation. We are a reliable partner for our customers and partners - and accurate and prompt in our deliveries.

For further information please refer to our Enclosure Solutions brochure and to our web-site at www.ensto.com or contact our customer service.

Contents

Load Break Switches	Page
Panel and DIN Rail Mounted Switches	
Small frame size	4
Medium frame size	5
With a neutral pole	6
Accessories	7
Direct Door Mounted Switches	
Small frame size	9
Accessories	10
Electrical and mechanical characteristics	11



Ensto specialises also in terminal technology. The range includes e.g. Ensto Clampo universal terminals for Al/Cu conductors, and compact terminal blocks.



Ensto is a source of expertise in enclosure technology. In addition to the wide selection of Ensto Cubo standard enclosures available in both plastics and steel, we create customised solutions to meet specific requirements.



In addition to the series of Ensto Compact load break switches presented in this brochure, our selection also includes Ensto Origin series switches having a strong position especially on the North American market. Please contact us for a special brochure on these.

Load Break Switches

Ensto Compact

Ensto Compact is a complete line of load break switches. The range of accessories includes a wide selection of external handles, also available in red/ yellow colours.



Ensto Compact is a complete line of load break switches. The rotary switches are compact in size and with a good design. The complete line is based on two frame sizes only: the small frame size, available 16 A...63 A, is only two DIN-modules wide (36 mm); the medium frame size is three DIN-modules wide (54 mm) with nominal currents 63 A...125 A.

The standard range also includes direct door-mounted switches.

The wide range of accessories includes additional poles, auxiliary contacts, handles and terminal shrouds.

UL-listed versions are also available; please contact us for more details and a specific brochure.

Ensto Compact is one of the most well-known series of small load break switches, with its clientele covering world's leading switchgear manufacturers.



The standard range also includes yellow 3-pole switches with a red handle. The product code then includes a suffix RY; in picture 3 x 100 A medium frame sized KSM3.100RY and 3 x 20 A small frame sized KS3.20RY.



The wide range of accessories includes 4th poles, fixed neutral and PE poles as well as auxiliary contacts.

The range of load break switches is completed with a change over mechanism, ideal for use e.g. in telecom applications, especially mobile telephone masts; maintenance applications, where a circuit needs to be in the off-position, whilst being worked on, and transferring power to another circuit; or reversing direction of a machine.

Panel and DIN Rail Mounted Switches

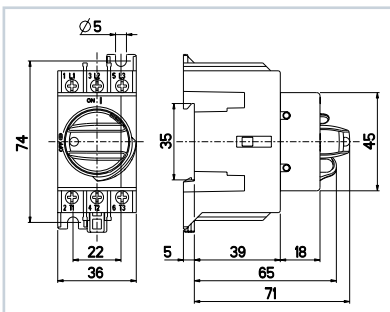
Small Frame Size (Two Modules Wide)

16 A ... 63 A

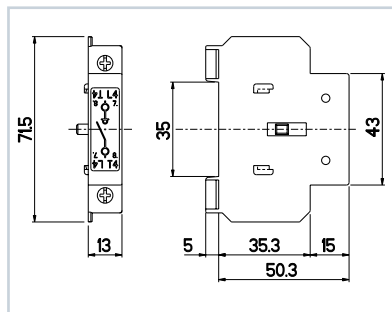


Nominal current	3-pole with direct handle			3-pole without handle			4th pole		
	Product code	EAN 13 code	Weight kg	Product code	EAN 13 code	Weight kg	Product code	EAN 13 code	Weight kg
16 A	KS3.16	6418677171345	0.133	KS31.16	6418677171284	0.129	KS1.16	6418677171253	0.046
20 A	KS3.20	6418677171352	0.133	KS31.20	6418677171291	0.129	KS1.20	6418677171260	0.046
25 A	KS3.25	6418677170003	0.133	KS31.25	6418677171307	0.129	KS1.25	6418677170065	0.046
32 A	KS3.32	6418677171420	0.133	KS31.32	6418677171314	0.129	KS1.32	6418677171277	0.046
40 A	KS3.40	6418677170010	0.133	KS31.40	6418677171321	0.129	KS1.40	6418677170072	0.046
63 A	KS3.63	6418677170027	0.133	KS31.63	6418677171338	0.129	KS1.63	6418677170089	0.046

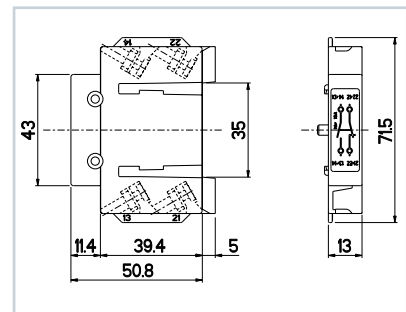
Standard package 50 pcs.



Switch (height from upper level of DIN rail: 65 mm without handle; 71 mm with direct handle).



4th pole and additional poles.



Standard auxiliary contacts.

Additional poles

Product code	Description	EAN 13 code	Weight kg
KS1N	Switched neutral pole	6438100094300	0.046
KSN1	Fixed neutral pole	6418677170126	0.042
KSP1	Fixed PE pole	6418677170140	0.042
KSA1	Standard auxiliary contact	6418677170164	0.051

Standard package 50 pcs.



Fixed PE pole, fixed neutral pole, 4th pole and standard auxiliary contact.

Panel and DIN Rail Mounted Switches

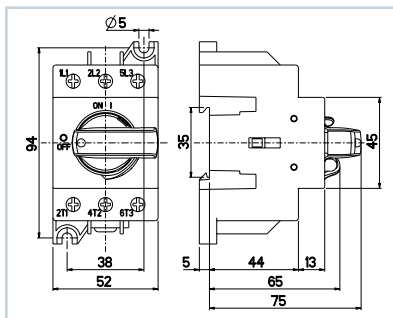
Medium Frame Size (Three Modules Wide)

63 A ... 125 A

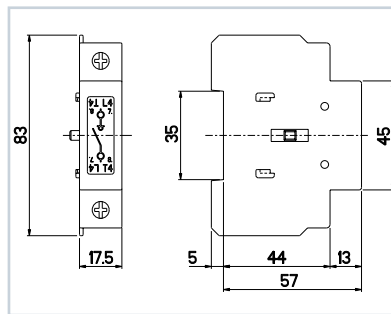


Nominal current	3-pole with direct handle			3-pole without handle			4th pole		
	Product code	EAN 13 code	Weight kg	Product code	EAN 13 code	Weight kg	Product code	EAN 13 code	Weight kg
63 A	KSM3.63	6418677169748	0.266	KSM31.63	6418677169700	0.260	KSM1.63	6418677169786	0.095
80 A	KSM3.80	6418677169755	0.266	KSM31.80	6418677169717	0.260	KSM1.80	6418677169793	0.095
100 A	KSM3.100	6418677169762	0.266	KSM31.100	6418677169724	0.260	KSM1.100	6418677169809	0.095
125 A	KSM3.125	6418677169779	0.266	KSM31.125	6418677169731	0.260	KSM1.125	6418677169816	0.095

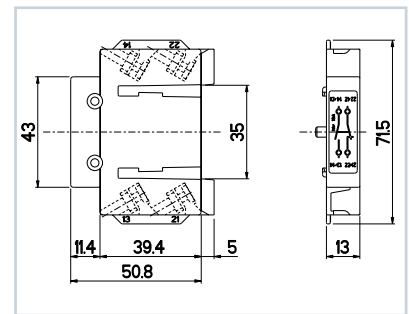
Standard package 50 pcs.



Switch (height from upper level of DIN rail: 65 mm without handle; 71 mm with direct handle).



4th pole and additional poles.



Standard auxiliary contacts.

Additional poles

Product code	Description	EAN 13 code	Weight kg
KSM1N	Switched neutral pole	6438100094324	0.095
KSMN1	Fixed neutral pole	6418677169823	0.087
KSMP1	Fixed PE pole	6418677169830	0.087
KSA1	Standard auxiliary contact	6418677170164	0.051

Standard package 50 pcs.



Fixed PE pole, fixed neutral pole, 4th pole and standard auxiliary contact.

Panel and DIN Rail Mounted Switches

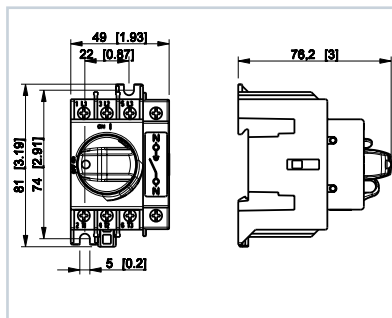
With a Factory-mounted Switched Neutral Pole
40 A ... 100 A



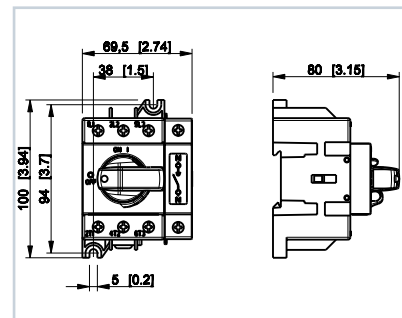
Nominal current	3-pole with switched N-pole			Consists of:			
	Product code	EAN 13 code	Weight kg	3-pole switch		Neutral pole	
				Product code	EAN 13 code	Product code	EAN 13 code
40 A	KS3.40N	6438100099343	0.177	KS3.40	6418677170010	KS1N	6438100094300
63 A	KS3.63N	6438100099350	0.177	KS3.63	6418677170027	KS1N	6438100094300
80 A	KSM3.80N	6438100099381	0.362	KSM3.80	6418677169755	KSM1N	6438100094324
100 A	KSM3.100N	6438100099398	0.362	KSM3.100	6418677169762	KSM1N	6438100094324

Standard package 50 pcs.

Our offering also includes four 3-pole switches with a direct handle and a factory-mounted switched neutral pole. These switches were included in our product range because many engineering designers require factory-mounted solutions in order to reduce the number of errors in field-mounting. These products also hasten the assembly of applications, since there is one step less in the customer's process.



KS3.40N and KS3.63N.



KSM3.80N and KSM3.100N.



Accessories

Panel and DIN Rail Mounted



Padlockable pistol grip handles are available in black (KSH75) and red/ yellow (KSH75RY).

Product code	Description	EAN 13 code	Weight kg	Standard package pcs
External handles				
KSH29	External handle, not padlockable, IP54, black, 0/1	6418677170188	0.033	100
KSH48	External handle, padlockable, IP65, R/Y, 0 OFF / 1 ON	6418677170195	0.043	100
KSH48.2	External handle, padlockable, IP65, black, 0 OFF / 1 ON, no interlock	6418677169953	0.043	100
KSH48.01	External handle, padlockable, IP65, black, 0 OFF / 1 ON	6418677170201	0.043	100
KSH75	Pistol grip handle, padlockable, IP65, black, 0 OFF / 1 ON	6418677169885	0.070	50
KSH75RY	Pistol grip handle, padlockable, IP65, R/Y, 0 OFF / 1 ON	6418677169892	0.070	50
Extension shafts				
KS23.055	55 mm	6418677170232	0.014	100
KS23.070	70 mm	6418677170249	0.017	100
KS23.090	90 mm	6418677170256	0.021	100
KS23.150	150 mm	6418677170263	0.032	100
KS23.200	200 mm	6418677170270	0.042	100
KS23.300	300 mm	6418677170287	0.061	100



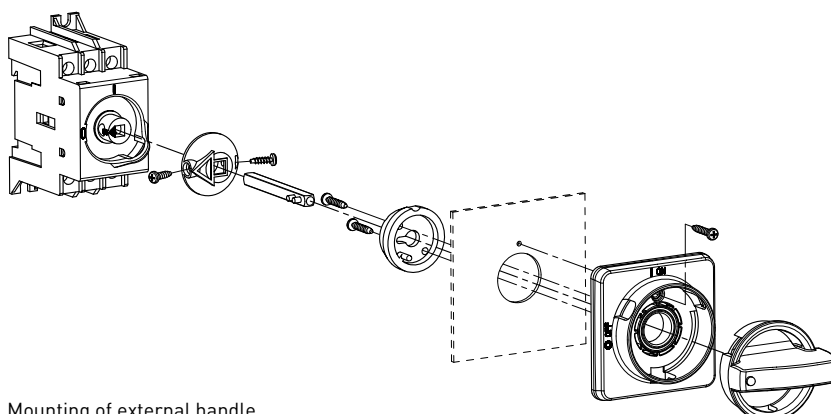
Padlockable external handle KSH48.



KSH29 is a small external handle, not padlockable.



Extension shafts are delivered with shaft retaining collars.



Mounting of external handle.

Change-over mechanism
KK102.712 is a kit including
shafts and black handle. Also
available with red/yellow handle,
product code KK102.7RY12.



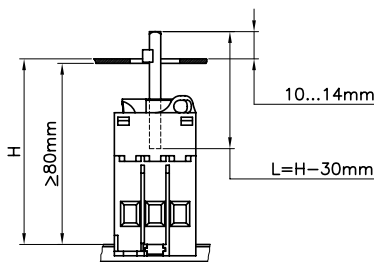
Product code	Description	EAN 13 code	Weight kg	Standard package pcs
Direct handles				
PMR241B	Small direct handle for KS switch	6418677171437	0.005	100
PMR250B	Larger direct handle for KS switch	6418677169908	0.006	100
PMR301B	Direct handle for KSM switch	6418677169915	0.006	100
Terminal shrouds				
PMR121	For KS1 poles	6418677171598	0.004	100
PMR123	For KS3 and KS31 switch	6418677171604	0.008	100
PMR111	For KSM1 pole	6418677171611	0.006	100
PMR113	For KSM3 and KSM31 switch	6418677171628	0.013	100
Parallel mechanism				
KK66	For mounting two KS or KSM switches to work simultaneously	6418677171642	0.078	1
Change-over mechanism				
KK102.712	Kit incl. shafts and black handle	6418677169922	0.234	20
KK102.7RY12	Kit incl. shafts and R/Y handle	6418677169939	0.234	20



Direct handles; PMR241B and PMR250B for small frame sized switches and PMR301B for medium frame sized switches, colour blue.



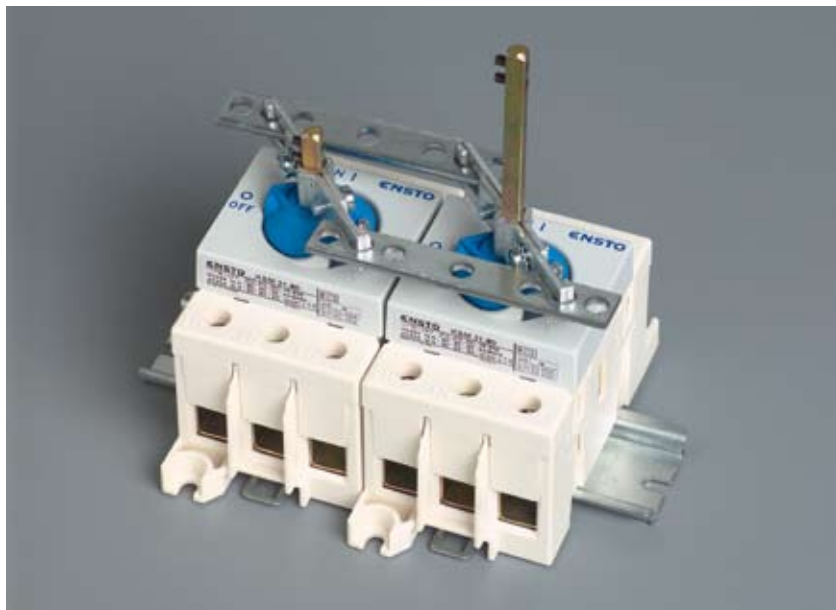
The wide range of accessories includes terminal shrouds.



How to measure and cut the shaft:

1. Measure the depth from the front of the cover to the upper part of the DIN rail.
2. Calculate the length of the shaft:
 $L = H - 30$
3. Cut the shaft.

The dimensions are according to the picture when handle KSH48 is used. With pistol grip handle KSH75, the dimensions are in accordance with the installation instructions provided with the product.



The range includes parallel mechanism, KK66, for mounting two small or medium frame sized switches to work simultaneously.

Direct Door Mounted Switches

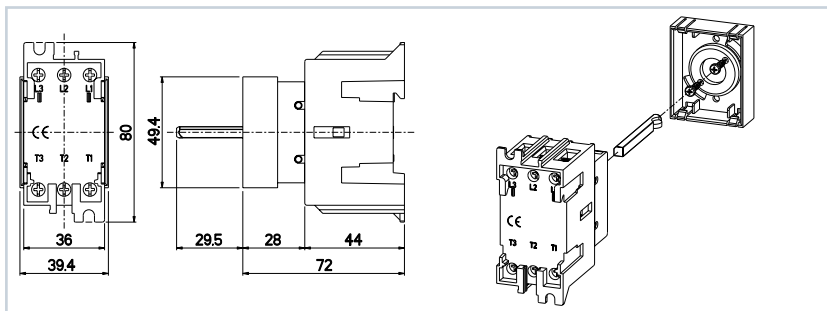
Small Frame Size (Two Modules Wide)

16 A ... 63 A

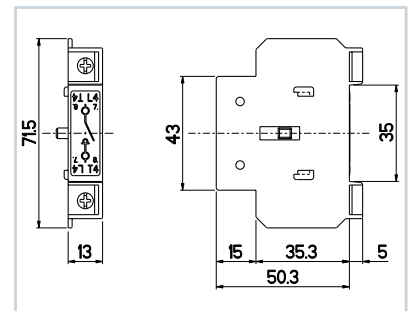


Nominal current	3-pole without handle			4th pole		
	Product code	EAN 13 code	Weight kg	Product code	EAN 13 code	Weight kg
16 A	KS13.16	6418677171161	0.149	KS11.16	6418677171130	0.045
20 A	KS13.20	6418677171178	0.149	KS11.20	6418677171147	0.045
25 A	KS13.25	6418677170034	0.149	KS11.25	6418677170096	0.045
32 A	KS13.32	6418677171246	0.149	KS11.32	6418677171154	0.045
40 A	KS13.40	6418677170041	0.149	KS11.40	6418677170102	0.045
63 A	KS13.63	6418677170058	0.149	KS11.63	6418677170119	0.045

Standard package 50 pcs.



Dimensional drawing of the switch.

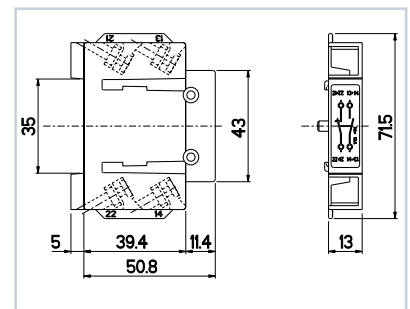


4th pole and additional poles.

Additional poles

Product code	Description	EAN 13 code	Weight kg
KS11N	Switched neutral pole	6438100094317	0.046
KSN11	Fixed neutral pole	6418677170133	0.042
KSP11	Fixed PE pole	6418677170157	0.042
KSA11	Standard auxiliary contact	6418677170171	0.051

Standard package 50 pcs.



Standard auxiliary contact.

Accessories

Direct Door Mounted

Padlockable external handle KSH48.01.



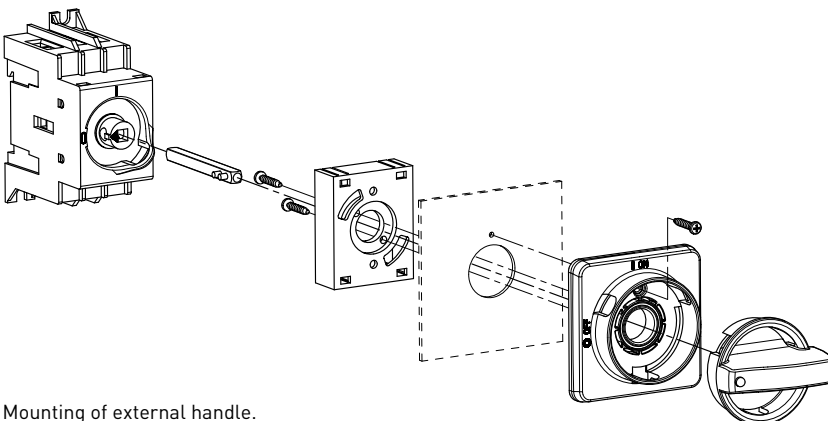
Product code	Description	EAN 13 code	Weight kg	Standard package pcs
Handles				
KSH48	External handle, padlockable, IP65, R/Y, 0 OFF / 1 ON	6418677170195	0.043	100
KSH48.01	External handle, padlockable, IP65, black, 0 OFF / 1 ON	6418677170201	0.043	100
Terminal shrouds				
PMR121	For KS11 poles	6418677171598	0.004	100
PMR123	For KS13 switch	6418677171604	0.008	100



External handles KSH48 are available in black and R/Y.



Terminal shrouds are available as accessories; PMR121 is for KS11 poles, PMR 123 for KS13 switch.



Mounting of external handle.

3-pole	KS 3.16 KS 31.16	KS 3.20 KS 31.20	KS 3.25 KS 31.25	KS 3.32 KS 31.32	KS 3.40 KS 31.40	KS 3.40N KS 31.40	KS 3.63 KS 31.63	KS 3.63N KS 31.63	KS 3.80 KS 31.80	KS 3.80N KS 31.80	KS 3.100 KS 31.100	KS 3.100N KS 31.100	KS 3.125 KS 31.125
4th pole	KS 1.16 KS 11.16	KS 1.20 KS 11.20	KS 1.25 KS 11.25	KS 1.32 KS 11.32	KS 1.40 KS 11.40	KS 1.40N KS 11.40	KS 1.63 KS 11.63	KS 1.63N KS 11.63	KS 1.80 KS 11.80	KS 1.80N KS 11.80	KS 1.100 KS 11.100	KS 1.100N KS 11.100	KS 1.125 KS 11.125
Conventional free air thermal current I_{th}	A	20	25	32	40	40	63	63	80	80	100	100	125
Rated insulation voltage U_i	V	800	800	800	800	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp}	kV	8	8	8	8	8	8	8	8	8	8	8	8
Rated operational current I_e	A	16	25	32	40	40	63	63	80	80	100	100	125
AC 21 A	A	16	25	32	40	40	63	63	80	80	100	100	125
AC 22 A	A	16	25	32	40	40	63	63	80	80	100	100	125
AC 23 A	A	16	25	32	40	40	63	63	80	80	100	100	125
Rated operational power P_e	kW	7.5	11	15	18.5	18.5	30	30	45	45	45	45	45
AC 23 A	kW	7.5	11	15	18.5	18.5	30	30	45	45	45	45	45
[for standard motor]	kW	11	22	22	22	22	22	22	45	45	45	45	45
Short-circuit characteristics [415 VAC]													
Rated short-time withstand current, $1s, I_{cw}$	A_{rms}	1260	1260	1260	1260	1260	1260	1260	1500	1500	1500	1500	1500
Rated conditional short-circuit current	kA_{rms}	50	50	50	50	50	20/50	20/50	25	25	25	25	11
Max. fuse (gG)	A	16	20	25	32	40	63/40	63/40	80	80	100	100	125
Max. cut-off current	kA_{peak}	6	6	6	6	6	6/6	6/6	9	9	9	9	9
Max. Joule integral	kA^2s	6.8	6.8	6.8	6.8	6.8	15/6.8	15/6.8	49.8	49.8	49.8	49.8	83
Making and breaking characteristics													
Making capacity	A	160	250	320	320	400	630	630	800	800	800	800	800
415V AC 23 A	A	160	250	320	320	400	630	630	800	800	800	800	800
Breaking capacity	A	128	200	256	256	320	504	504	640	640	640	640	640
415V AC 23 A	A	128	200	256	256	320	504	504	640	640	640	640	640
Endurance (number of operations)													
Mechanical		100 000	100 000	100 000	100 000	100 000	100 000	100 000	30 000	30 000	30 000	30 000	30 000
Electrical		3 000	3 000	3 000	3 000	3 000	3 000	3 000	1 500	1 500	1 500	1 500	1 500
Terminals (Cu)	mm ²	1.5-16	1.5-16	1.5-16	1.5-16	1.5-16	1.5-16	1.5-16	10-50	10-50	10-50	10-50	10-50
Tightening torque	Nm	2	2	2	2	2	2	2	4	4	4	4	4



**ENCLOSURES AND
COMPONENTS**

ENSTO CONTROL OY
ENSIO MIETTISEN KATU 2, P.O.BOX 77
FI-06101 PORVOO, FINLAND
TEL. +358 204 76 21
FAX +358 204 76 2516
ENCLOSURE.SOLUTIONS@ENSTO.COM
WWW.ENSTO.COM