MOD

Molded Case Circuit Breakers

MOD series molded case circuit breakers are used for switching and protecting low-voltage installations in large residential properties and business as well as industrial buildings. They ensure reliable protection against overload and short circuits and they can be used as a main disconnection switch, too.

Benefits

- Rated currents range from 40 to 1250 A
- Three- or four-pole versions
- High short-circuit breaking capacity (up to 85 kA)
- Easy adjustable overload and short-circuit release
- Micro-processor release (e-version)
- Compact mechanical design
- They can be installed vertically or horizontaly
- Many additional accessories

Types

MOD 1	three-pole, four-pole
MOD 2	three-pole, four-pole
MOD 3	three-pole, four-pole
MOD 4	three-pole, four-pole
MOD 5	three-pole, four-pole
MOD 6	three-pole, four-pole

Standards

- IEC 60947-2
- IEC 60947-5-1

MOD 1 - Three-pole, adjustable type

Type	Rated Current I_n (A)	Number of Poles	Ordering No.	Weight (kg)	Packaging (pcs)
Standard rated short capability					
MOD1 3NL 32A	32	3	786.103.961	1.1	1
MOD1 3NL 40A	40	3	786.103.960	1.1	1
MOD1 3NL 50A	50	3	786.103.970	1.1	1
MOD1 3NL 63A	63	3	786.103.980	1.1	1
MOD1 3NL 80A	80	3	786.103.990	1.1	1
MOD1 3NM 80A	80	3	786.103.992	1.3	1
MOD1 3NL 100A	100	3	786.104.000	1.1	1

MOD 1 - Four-pole, adjustable type

Standard rated short capability					
MOD1 4NL 63A	63	4	786.104.910	1.4	1
MOD1 4NL 80A	80	4	786.104.920	1.4	1
MOD1 4NL 100A	100	4	786.104.930	1.4	1

MOD 2 - Three-pole, adjustable type

Standard rated short capability					
MOD2 3NL 125A	125	3	786.104.100	1.8	1
MOD2 3NM 125A	125	3	786.103.930	2.1	1
MOD2 3NL 160A	160	3	786.104.200	1.8	1
MOD2 3NM 160A	160	3	786.103.798	2.1	1
MOD2 3NL 200A	200	3	786.104.300	1.8	1
MOD2 3NM 200A	200	3	786.103.790	2.1	1
MOD2 3NL 250A	250	3	786.103.792	1.8	1
MOD2 3NM 250A	250	3	786.103.791	2.1	1

MOD 2 - Four-pole, adjustable type

Standard rated short capability					
MOD2 4NL 125A	125	4	786.104.940	2.3	1
MOD2 4NL 200A	200	4	786.104.950	2.3	1
MOD2 4NL 250A	250	4	786.104.960	2.3	1

MOD 3 - Three-pole, adjustable type

Middle rated short capability					
MOD3 3NM 250A	250	3	786.103.940	5.1	1
MOD3 3NM 315A	315	3	786.104.400	5.1	1
MOD3 3NM 400A	400	3	786.104.500	5.1	1

MOD 3 - Four-pole, adjustable type

Middle rated short capability					
MOD3 4NM 315A	315	3	786.103.537	5.1	1
MOD3 4NM 400A	400	3	786.103.631	5.1	1

MOD 3 - Three-pole, electronic type

Middle rated short capability					
MOD3 3EM 250A	250	3	786.104.180	5.5	1
MOD3 3EM 400A	400	3	786.103.799	5.5	1

MOD 4 - Three-pole, adjustable type

Type	Rated Current I_n (A)	Number of Poles	Ordering No.	Weight (kg)	Packaging (pcs)
Middle rated short capability					
MOD4 3NM 500A	500	3	786.104.600	6.9	1
MOD4 3NM 630A	630	3	786.104.700	6.9	1

MOD 4 - Four-pole, adjustable type

Middle rated short capability					
MOD4 4NM 500A	500	3	786.103.536	6.9	1
MOD4 4NM 630A	630	3	786.103.646	6.9	1

MOD 4 - Three-pole, electronic type

Middle rated short capability					
MOD4 3EM 630A	630	3	786.103.781	6.9	1
MOD4 3EM 800A	800	3	786.104.190	6.9	1

MOD 5 - Three-pole, adjustable type

Middle rated short capability					
MOD5 3NM 800A	800	3	786.104.800	8.0	1
High rated short capability					
MOD5 3NH 800A	800	3	786.103.810	8.0	1

MOD 5 - Three-pole, electronic type

Middle rated short capability					
MOD5 3EM 1000A	1000	3	786.103.782	15.8	1
MOD5 3EM 1250A	1250	3	786.103.783	15.8	1

Technical characterictics for thermal-adjustable type

Technical data		Symbol	Unit	MOD 1		MOD 2		MOD 3		MOD 4		MOD 5	
Frame				up to 100 A		up to 250 A		up to 400 A		500, 630 A		800 A	
Standard				IEC 60947-2, IEC 60947-5-1									
Approvals				KEMA*, CE									
Rated current (at 40 °C)		I_n	A	40, 50, 63, 80, 100		125, 160, 200, 250		250, 315, 400		630		800	
Number of poles				3 and 4									
Rated operational voltage		U_e	V	380 / 415									
Rated insulation voltage		U_i	V	690		690		690		1000		1000	
Rated impulse withstand voltage		U_{imp}	kV	8									
Pollution degree				III									
Rated frequency		f	Hz	50/60									
Altitude			m	<2000									
Breaking capacity level *				L	M	L	M	M	H	M	H	M	H
Rated ultimate short-circuit breaking capacity	400 V	I_{cu}	kA	36	50	36	50	85	100	85	100	85	100
Rated ultimate short-circuit breaking capacity	400 V	I_{cs}	kA	25	36	25	36	60	75	60	75	60	75
Temperature range			°C	-25 ... +55									
Storage temperature range			°C	-40 ... +70									
Mechanical durability			op. c.	10.000		10.000		10.000		10.000		2.500	
Electrical durability			op. c.	5.000		5.000		4.000		4.000		500	
Instantaneous tripping 0.8-1.0 x In	F			fixed									
	N	I_{cs}	kA	adjustable from 0.8 - 1 x I_n									
Screws				M8		M8		M10		M12			
Head				M8		M8		M10		M12			
Width of copper connection			mm	16		22		24		35			

*Selected models only: MOD1 3NM, MOD2 3NM, MOD1 3NL, MOD2 3NL, MOD1 4NM, MOD2 4NM, MOD1 4NL, MOD2 4NL

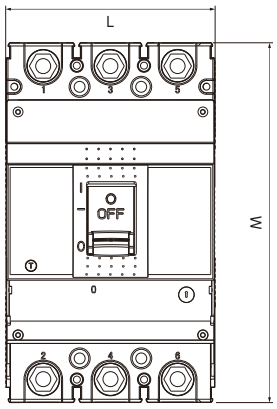
Technical characterictics for electronic type

Technical data		Symbol	Unit	MOD 3		MOD 4		MOD 5
Frame				250, 400 A		630, 800 A		1000, 1250 A
Standard				IEC 60947-2, IEC 60947-5-1				
Approvals				CE				
Rated current (at 40 °C)		I_n	A	250, 400		630, 800		1000, 1250
Number of poles				3 and 4				
Rated operational voltage		U_e	V	380 / 415				
Rated insulation voltage		U_i	V	1000				
Rated impulse withstand voltage		U_{imp}	kV	8				
Pollution degree				III				
Rated frequency		f	Hz	50 / 60				
Altitude			m	< 2000				
Breaking capacity level *				M	H	M	H	M
Rated ultimate short-circuit breaking capacity	400 V	I_{cu}	kA	85	100	85	100	70
Rated ultimate short-circuit breaking capacity	400 V	I_{cs}	kA	60	75	60	75	50
Temperature range			°C	-25 ... +55				
Storage temperature range			°C	-40 ... +70				
Mechanical durability			op. c.	8.500		4.000		2.500
Electrical durability			op. c.	3.000		1.000		500

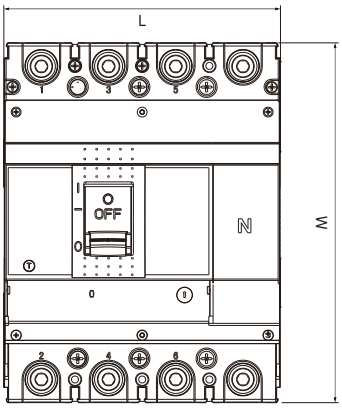
Dimensions

(mm)

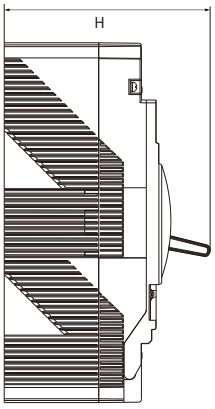
Type		MOD 1	MOD 2	MOD 3	MOD 4	MOD 5
L × W × H	3P	92 × 155 × 92	106 × 155 × 99	150 × 257 × 148	150 × 257 × 148	210 × 280 × 155
	4P	122 × 155 × 92	142 × 165 × 99	198 × 257 × 148	198 × 257 × 148	280 × 280 × 155



3P



4P



Accessory installation manuals for 3-pole MCCB

PS11
(Auxiliary contact)

AL11
(Alarm switch)

SHT
(Shunt trip)

QT38
(Under-voltage release)

Item	Accessories	125 A 3P	160 Aw 3P	250 A 3P	400 A 3P	630 A 3P	800 A 3P
	AL11						
	SHT						
	PS11						
	QT38						
	AL11 + PS11						
	TWO PS11						
	SHT, PS11						
	SHT, AL11						
	SHT, AL11 + PS11						
	SHT, TWO PS11						
	SHT, QT38		-	-			
	QT38, SHT						
	QT38, PS11						
	QT38, AL11						
	QT38, AL11 + PS11						
	QT38, TWO PS11						
Valid for all 3-pole versions of Iskra MOD	PS11, AL11						
	PS11, SHT						
	PS11, AL11 + PS11						
L R	PS11, TWO PS11						
	PS11, QT38		-	-			
	AL11, PS11						
	AL11, SHT						
	AL11, AL11 + PS11						
	AL11, TWO PS11						
	AL11, QT38		-	-			
	AL11 + PS11, PS11						
	AL11 + PS11, AL11						
	AL11 + PS11, SHT						
	AL11 + PS11, TWO PS11						
	AL11 + PS11, QT38		-	-			
	TWO PS11, PS11						
	TWO PS11, AL11						
	TWO PS11, SHT						
	TWO PS11, AL11 + PS11						
	TWO PS11, QT38		-	-			

Accessory installation manuals for 4-pole MCCB

PS11
(Auxiliary contact)

AL11
(Alarm switch)

SHT
(Shunt trip)

QT38
(Under-voltage release)

Item	Accessories	125 A 4P	160 Aw 4P	250 A 4P	400 A 4P	630 A 4P	800 A 4P
	AL11						
	SHT						
	PS11						
	QT38						
	AL11 + PS11						
	TWO PS11						
	SHT, PS11						
	SHT, AL11						
	SHT, AL11 + PS11						
	SHT, TWO PS11						
	SHT, QT38		-	-			
	QT38, SHT						
	QT38, PS11						
	QT38, AL11						
	QT38, AL11 + PS11						
	QT38, TWO PS11						
	PS11, AL11						
	PS11, SHT						
	PS11, AL11 + PS11						
	PS11, TWO PS11						
	PS11, QT38		-	-			
	AL11, PS11						
	AL11, SHT						
	AL11, AL11 + PS11						
	AL11, TWO PS11						
	AL11, QT38						
	AL11 + PS11, PS11						
	AL11 + PS11, AL11						
	AL11 + PS11, SHT						
	AL11 + PS11, TWO PS11						
	AL11 + PS11, QT38		-	-			
	TWO PS11, PS11						
	TWO PS11, AL11						
	TWO PS11, SHT						
	TWO PS11, AL11 + PS11						
	TWO PS11, QT38						

Valid for all 4-pole versions of Iskra MOD

Note:
R2 can be istalled with PS11, TWO PS11

Molded Case Circuit Breakers - Accessories

Motor operated mechanism

Type	Rated Voltage U_n (V)	Ordering No.	Weight (kg)	Packaging (pcs)
MOD1 3N ACM 230VAC	230	786.103.789	1.2	1
MOD2 3N ACM 230VAC	230	786.103.795	1.2	1
MOD3 3N ACM 230VAC	230	786.103.793	3.4	1
MOD4 3N ACM 230VAC	230	786.1037.96	3.4	1
MOD5 3N ACM 230VAC	230	786.103.794	3.8	1

Extended rotary handle

MOD1 3N ERH		786.103.784	0.3	1
MOD2 3N ERH		786.103.785	0.3	1
MOD3 3N ERH		786.103.786	0.3	1
MOD4 3N ERH		786.103.787	0.3	1
MOD5 3N ERH		786.103.788	0.3	1

Shunt trip

MOD1 A230 SHT	230	786.104.900	0.032	1
MOD2 A230 SHT	230	786.104.110	0.108	1
MOD3 A230 SHT	230	786.104.120	0.175	1
MOD4 A230 SHT	230	786.103.900	0.250	1
MOD5 A230 SHT	230	786.103.910	0.250	1

Under-voltage release

MOD1 U230VAC QT38	230	786.104.130	0.075	1
MOD2 U230VAC QT38	230	786.104.140	0.172	1
MOD3 U230VAC QT38	230	786.104.150	0.250	1
MOD4 U230VAC QT38	230	786.103.840	0.250	1
MOD5 U230VAC QT38	230	786.103.850	0.250	1

Alarm switch

MOD1 AL11	786.103.820	0.06	1
MOD2 AL11	786.103.860	0.06	1
MOD3 AL11	786.103.870	0.06	1
MOD4 AL11	786.103.880	0.06	1
MOD5 AL11	786.103.890	0.06	1

Auxiliary contact

MOD1 PS11	786.104.160	0.06	1
MOD2 PS11	786.103.950	0.06	1
MOD3 PS11	786.104.170	0.12	1
MOD4 PS11	786.103.920	0.12	1
MOD5 PS11	786.103.830	0.12	1

4P Straight bar

4P 160BAR	786.103.881	0.102
4P 250BAR	786.103.882	0.203
4P 400BAR	786.103.883	0.370
4P 630BAR	786.103.884	0.491
4P 800BAR	786.103.885	0.491

ACM Motor operated mechanism

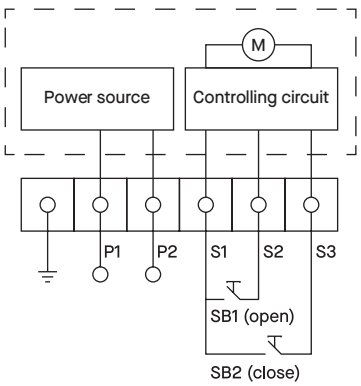
- Remote operation of MCCBs
- Motor mounts directly on MCCB with screws (included) without removal of midcover
- Manual operation possible
- Clear ON/OFF/TRIP indication
- Trip function

- Rated voltages: AC: 230 V, 400 V
  DC: 24 V, 100 V, 220 V

Technical details

Type		MOD 1	MOD 2	MOD 3	MOD 4	MOD 5
Rated operational voltage				220 - 240 VAC		
Operation current		0.17	0.23	0.33	0.47	0.44
Starting current - Peak value	A	1.05	1.5	2.09	2.15	2.32
Operation method				direct drive		
Operation time (s)	ON	0.31	0.36	0.63	0.56	0.62
	OFF	0.27	0.25	0.51	0.45	0.51
	Reset	0.27	0.25	0.51	0.45	0.51

Wiring diagram



Instructions

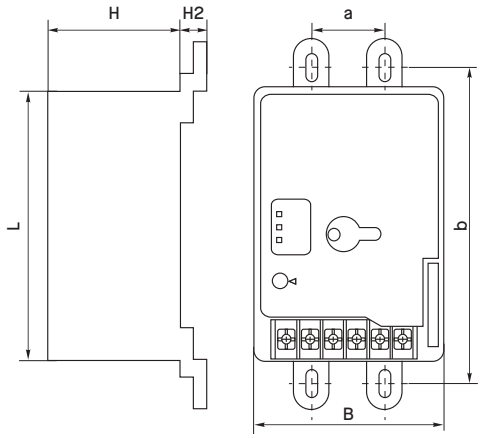
P1-P2: DC IN;
SB1,SB2: operating button (equipped by user)

Notes

In the dotted box is the circuit breaker inner wiring diagram.

Dimensions

Type	Shape size			Installation size		
	L	B	H	H1	a	b
MOD1-100	116	90	77	12.5	30	129
MOD2-250	116	90	77	15	35	126
MOD3-400	176	130	115	27	44	215
MOD4-630	176	130	115	31	70	243
MOD5-800	176	130	115	31	70	243

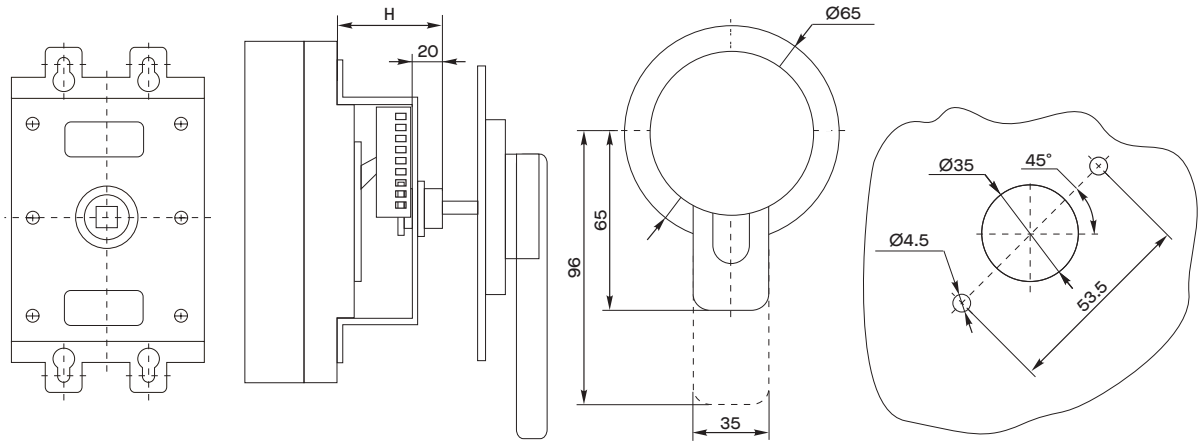


ERH Extended rotary handle

- Rotary handle mounts directly on MCCB with screws (indluded) without removal of midcover
- Clear ON/OFF/TRIP indication
- Direct access to push to trip button with rotary handle mounted

Dimensions

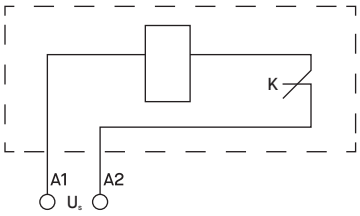
Type		MOD1-100	MOD2-250	MOD3-400	MOD4-630	MOD5-800
Installation size H (mm)	3P	49	55	74	66	66



SHT Shunt trip

- Rated supply voltages U_s: AC: 230 V, 400 V
  DC: 24 V, 100 V, 220 V
- Operation voltages: 0.7 - 1.1 U_s

Wiring diagram



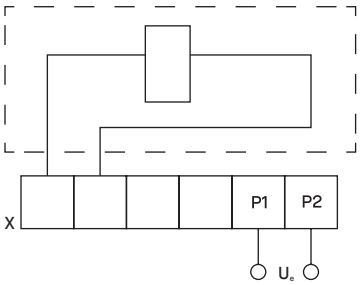
Notes

K-the microswitch in series with coil in the shunt release is the normally closed contact, when circuit breaker opening,the contact disconnect automatically,switch on when closing; in the dotted box is the circuit breaker inner wiring diagram.

QT38 Under-voltage release

- Rated supply voltages U_s: AC: 230 V, 400 V
- Operation voltages:
  When the voltage is 35% - 70% of rated operational voltage, make the circuit breaker tripped stably; When 85% - 110%, guarantee the circuit breaker switched on, when lower than 35% should prevent switch on.

Wiring diagram



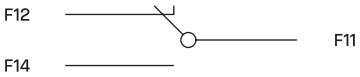
Notes

X-terminal blocks, in the dotted box is the circuit breaker inner wiring diagram.

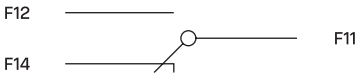
PS11 Auxiliary contact

- Conventional thermal current I_{th}: 3 A / 230 V
- Rated operational current I_e: $I_e \leq 225$ A: 0.26 A
  $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under “OFF” position

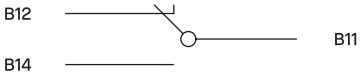


The state of circuit breaker under “ON” position

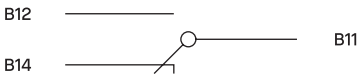
AL11 Alarm switch

- Conventional thermal current I_{th}: 3 A / 230 V
- Rated operational current I_e: $I_e \leq 225$ A: 0.26 A
  $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under “OFF” ”ON” position

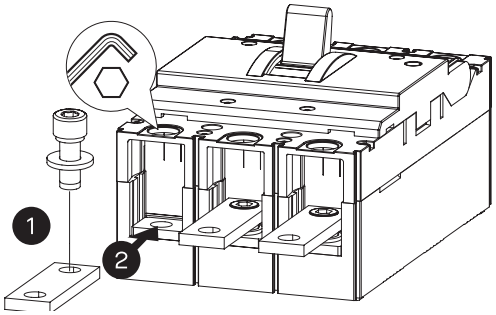


The state of circuit breaker under trip free position (alarm)

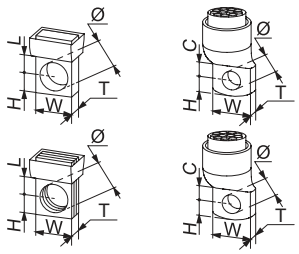
4P Straight bar

Type	Ordering No.	Weight (kg)
4P 160BAR	786.103.881	0.102
4P 250BAR	786.103.882	0.203
4P 400BAR	786.103.883	0.370
4P 630BAR	786.103.884	0.491
4P 800BAR	786.103.885	0.491

Mounting



	Wmax (mm)	T (mm)	Lx (mm)	Cmin (mm)	Ø (mm)	H (mm)	Screw (mm)	Torque (Nm)
100	16	4.5	9.5	/	8.1	7	6	6
160	16	4.5	10.5	/	8.1	7	6	6
250	20	5	10.5	/	9	8.75	6	6
400	28	8.5	20	/	12.5	17	10	10
630	28	10.5	20	/	12.5	17	10	10



Dimensions

(mm)

	100	160	250	400	630
D1	41	50	60	70	70
D2	15	15	20	28	28
D3	7.3	8	9	11	11
D4	26	32.5	42	43	43
D5	8.5	8.5	9	10.8	10.8
D6	8.5	8.5	9	14.5	14.5
D7	4	4	5	6	8