

Explosion protected distributions



GHG 6277 E-Series MCCB 63 - 250 A

Ex-d built-in components for Zone 1 and 2 (IEC)



EATON

Powering Business Worldwide

New MCCB type GHG 6277

from 63 A up to 250 A- 3-pole & 4-pole MCCB for Ex-Zone 1 and 2

New Molded Case Circuit Breaker (MCCB) for more reliability

Eaton's Crouse-Hinds GHG 6277 tamper-proof encapsulated breakers provide maximum safety for your facility and feature the proven reliability of Eaton MCCBs.

Application:

Provide overcurrent and short circuit protection for low voltage power, lighting, and heat tracing applications in hazardous locations, such as refineries, chemical and petrochemical plants, mining, food processing, corrosive, and industrial processing facilities.

Encapsulated MCCBs are available certified to IEC standards, making them a global solution ideal for use as power circuit breakers and distribution board mains.

Cost savings

With the introduction of Eaton's Crouse-Hinds Ex-d MCCBs up to 250 A it becomes easier and cost-effective to realise a power distribution board for hazardous environment.

Conventionally an Ex-d enclosure with a minimum volume of 20 litres (e.g. GHG 64 -size 4 or 5) has to be selected to built in an industrial MCCB and add Ex-d cable bushings for wiring. To actuate the MCCB an Ex-d handle must be installed too.

Using the new GHG6277 series in a standard Ex e enclosure (GHG 619) with an external operating handle, the Ex d aluminum enclosure can be eliminated from the panel.

By combining with other GHG62 encapsulated components (MCBs, RCDs, & contactors) among with the GHG 758 Ex e busbar system, Eaton's Crouse-Hinds division can offer complete distribution panels for motor or power circuits, all without a need for expensive Ex-d enclosures.

This concept saves money and time for installation and maintenance.



Features

- Protection against electrical overload. Provides upstream protection for elevated electrical currents occurring outside of normal operation
- Protection against electrical faults. Immediately interrupts damaging high currents which occur during a line fault or short circuit
- Function as a switch-disconnector. Rated with AC3 switching capacity for making & breaking of electrical loads

Test button

push-to-trip mechanism for manual trip and testing of the breaker operation

Adjustable settings

allows to adjust/set the trip setting down to the next available amperage (i.e. 160 A down to 125 A). (IEC version only)

Wire connecting terminals

Allows for single conductor up to 185 mm²

Engineered air gap

Aids in temperature reduction and improves air flow

Heat dissipation ribs

Enlarged surface area for better cooling of the integrated components

IP20

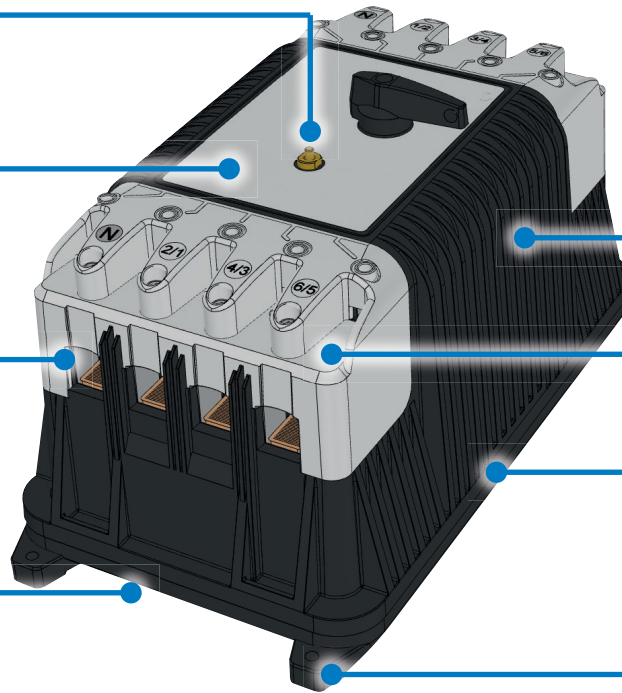
touch safe (IP20) operating controls

Tamper-proof friction welded design

Maximum security to eliminate risk of flame path damage and prevent safety critical changes to the MCCB during maintenance

Mounting feet

Easy access for mounting/removing breakers



Type key for MCCB

GHG6277 X YY R0 A B C

Type	Configuration X	Accessories YY	Version	# of poles	Short Circuit Capacity	Rated Current IEC
GHG6277 encapsulated MCCB	0 = MCCB only 1 = MCCB + 1NO 2 = MCCB + 1NC 3 = MCCB + trip indicator 1NO 4 = MCCB + 1NO/1NC + trip indicator 1NC 5 = MCCB + 2NO 6 = MCCB + 2NC 7 = MCCB + 2NO + trip indicator 1NO 8 = MCCB + 2NC + trip indicator 1NO 9 = MCCB + 1NO + 1NC + trip indicator 1NO	00 = MCCB only 01 = shunt trip 24V AC/DC + early make 1NO 02 = shunt trip 110V-130V AC/DC + early make 1NO 03 = shunt trip 208V-250V AC/DC + early make 1NO 04 = shunt trip 380V-440VAC/DC + early make 1NO 05 = uv release 24V 50/60Hz + early make 1NO 06 = uv release 110V-130V 50/60Hz + early make 1NO 07 = uv release 208V-240V 50/60Hz + early make 1NO 08 = uv release 380V-440V 50/60Hz + early make 1NO 09 = uv release 480V-525V 50/60Hz + early make 1NO 10 = shunt trip 24V AC/DC 11 = shunt trip 110V-130V AC/DC 12 = shunt trip 208V-250V AC/DC 13 = shunt trip 380V-440VAC/DC 14 = uv release 24V 50/60Hz 15 = uv release 110V-130V 50/60Hz 16 = uv release 208V-240V 50/60Hz 17 = uv release 380V-440V 50/60Hz 18 = uv release 480V-525V 50/60Hz 19 = early make aux switch 2NO 20 = uv release 24V DC	R0 = E-series (standard) R1 = A-series (@ 10 kA only)	1 = 3pole IEC 2 = 4pole IEC	3 = IEC 10 kA @ 440 V 4 = IEC 25 kA @ 440 V	1 = 50 A 2 = 63 A 3 = 80 A 4 = 100 A 5 = 125 A 6 = 160 A 7 = 200 A 9 = 250 A Operational currents 20 A to 40 A on request

GHG 6277 Molded Case Circuit Breaker (MCCB) E-series



GHG 6277

Technical data E-series IEC

		MCCB 63 A up to 250 A
Marking accd. to 2014/34/EU		⊕ II 2 G Ex de IIB/IIC Gb
EC-Type Examination Certificate		BVS 09 ATEX E 145 U
Marking accd. to IECEx		Ex de IIB/IIC Gb
IECEX Certificate of Conformity		IECEX BVS 10.0002 U
Functional temperature		-20 °C up to +70 °C
Application temperature ¹⁾		-20 °C up to +55 °C (IIC / IIB based on GHG 619)
Limits of service temperature		-20 °C up to +110 °C (IIC / IIB)
Storage temperature		-20 °C up to +55 °C in original packing
Built-in position		Vertical and rotated 90 deg in all directions
Release system		thermomagnetic release
Safe Isolation to EN 61140	between aux contacts and main contacts	500 VAC
	between aux contacts	300 VAC
Rated impulse withstand voltage	main contacts	8000 V
	auxiliary contacts	6000 V
Rated operating voltage U_e		440 V
Rated switching capacity I_{cu}	400/415/440V (50/60Hz) kA/cos φ	10 kA/0.25 or 25 kA I_{cu} : 500VDC 10kA
Rated current I_n	main contact	63 A, 80 A, 100 A, 125 A, 160 A, 200 A or 250 A
	aux. contact	max. 5 A
Adjustable setting range I_r		0.8 to 1.0 x rated current I_n
Short current protection		$I_j = 10 \times I_n$
Utilization category to IEC/EN 60947-2		A
Making/breaking capacity at rated current up to 400 V		AC1 & AC3
Connecting terminals main contact		1 x 4.0 mm ² up to 1 x 185 mm ²
Rated voltage aux. contact		max. 500 V AC
Rated current aux contact	AC15 le (up to 230 V) / DC13 le (up to 24 V)	4 A / 3 A
	AC15 le (up to 400 V) / DC13 le (up to 60 V)	2 A / 1.2 A
	AC15 le (up to 500 V) / DC13 le (up to 110 V)	1 A / 0.8 A
	DC13 le (up to 220 V)	0.3 A
Connecting terminals aux./signal contact		1.0 mm ² up to 4.0 mm ² fine stranded
Total opening delay on short circuit		< 10 ms
Weight		10.5 kg - 4-pole / 10 kg - 3 pole
Enclosure material		Polyamide
Component degree of protection accd. EN 60529		IP20

¹⁾ The limits of the operating temperature range and the max. permissible temperature rise of the components (functional temperature) have to be taken into account (see also page 2.6.11 of Master catalogue).



GHG 6277

Order Code Molded Case Circuit Breaker (MCCB) E-series 10/25 kA IEC Version:

GHG 6277 W XX RO Y 3 Z

Configuration (W)	Accessories (XX)	Version (0)	# of poles (Y)	short-circuit current (3)	Rated Current (Z)
MCCB only	shunt trip 24V AC/DC + early make 1NO	E-series (standard)	3 pole 1	IEC 10 kA @ 440 V	63 A
MCCB + 1NO	shunt trip 110V-130V AC/DC + early make 1NO	A-series (@ 10 kA only)	4 pole 2	IEC 25 kA @ 440 V 10kA @ 500V DC	80 A
MCCB + 1NC	shunt trip 208V-250V AC/DC + early make 1NO				100 A
MCCB + trip indicator 1NO	shunt trip 380V-440VAC/DC + early make 1NO				125 A
MCCB + 1NO/1NC + trip indicator 1NC	uv release 24V 50/60Hz + early make 1NO				160 A
MCCB + 2NO	uv release 110V-130V 50/60Hz + early make 1NO				200 A
MCCB + 2NC	uv release 208V-240V 50/60Hz + early make 1NO				250 A
MCCB + 2NO + trip indicator 1NO	uv release 380V-440V 50/60Hz + early make 1NO				
MCCB + 2NC + trip indicator 1NO	uv release 480V-525V 50/60Hz + early make 1NO				
MCCB + 1NO + 1NC + trip indicator 1NO	shunt trip 24V AC/DC				
	shunt trip 110V-130V AC/DC				
	shunt trip 208V-250V AC/DC				
	shunt trip 380V-440VAC/DC				
	uv release 24V 50/60Hz				
	uv release 110V-130V 50/60Hz				
	uv release 208V-240V 50/60Hz				
	uv release 380V-440V 50/60Hz				
	uv release 480V-525V 50/60Hz				
	early make aux. switch 2NO				
	uv release 24V DC				

Power Loss at In (IEC-E-series)

In [A]	P [W]
63 A	20.2
80 A	20.5
100 A	25.7
125 A	27.6
160 A	38.4
200 A	48.0
250 A	58.1

If used in 3-phase systems

Power Loss at In (IEC-A-series)

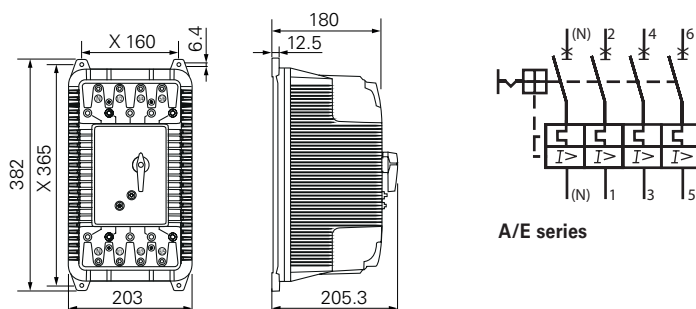
In [A]	P [W]
63 A	12.9
80 A	14.4
100 A	16.8
125 A	19.8
160 A	23.7
200 A	39.6
250 A	53.4

If used in 3-phase systems

Example: MCCB + 2NO, shunt trip 208V-250V AC/DC + early make 1NO, 4 poles, rated current 100 A

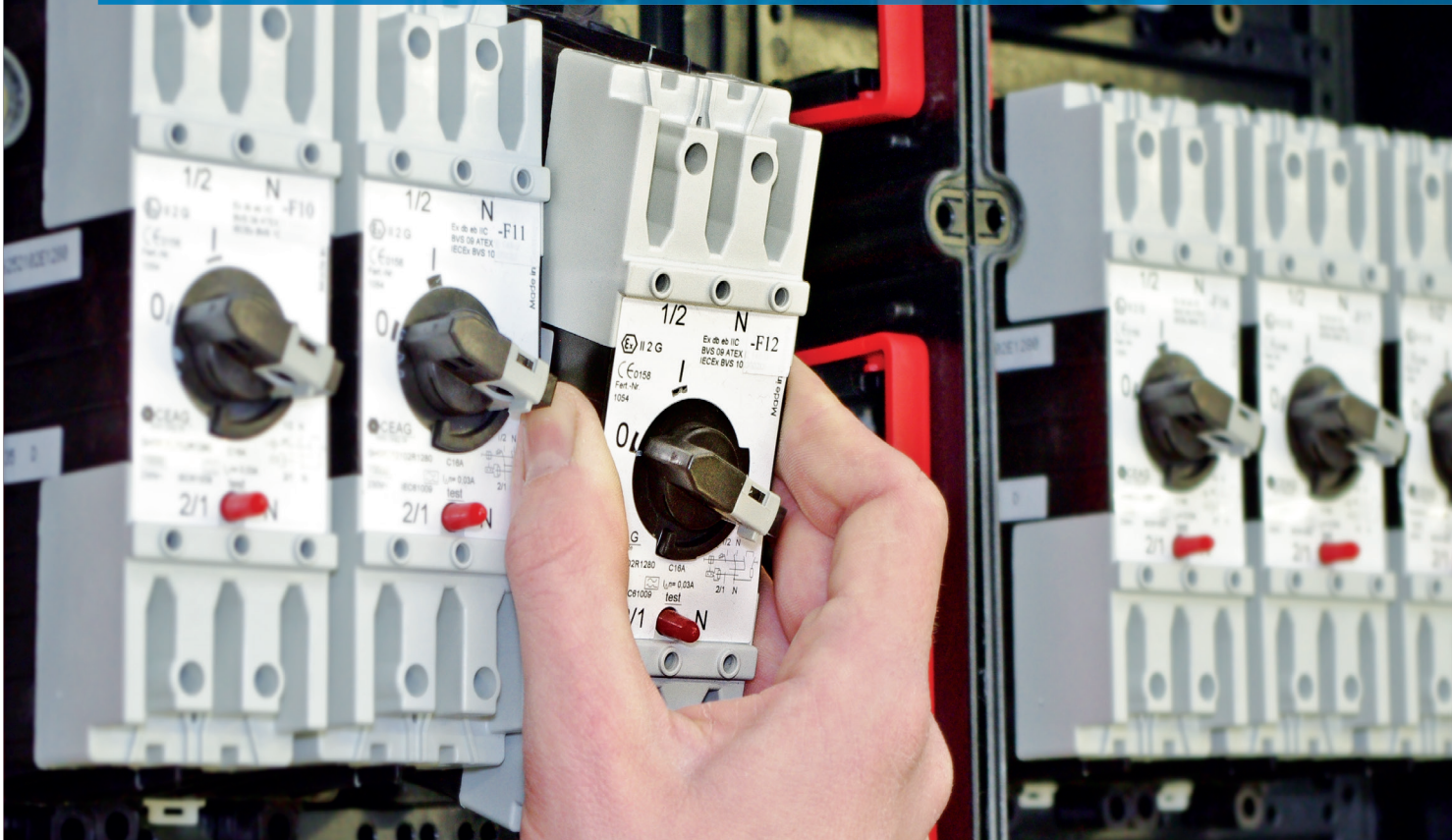
GHG 6277 5 03 R0 2 3 4

Dimension drawing /connection diagram



A/E series

Explosion protected distributions



GHG 6277 E-Series MCCB 50A - 225 A

Ex-d built-in components for NEC application



EATON

Powering Business Worldwide

New MCCB type GHG 6277

from 50 A up to 225 A- 3-pole & 4-pole MCCB for NEC Application

New Molded Case Circuit Breaker (MCCB) for more reliability

Eaton's Crouse-Hinds GHG 6277 tamper-proof encapsulated breakers provide maximum safety for your facility and feature the proven reliability of Eaton MCCBs.

Application:

Provide overcurrent and short circuit protection for low voltage power, lighting, and heat tracing applications in hazardous locations, such as refineries, chemical and petrochemical plants, mining, food processing, corrosive, and industrial processing facilities.

Encapsulated MCCBs are available certified to NEC standards, making them a global solution ideal for use as power circuit breakers and distribution board mains.

Cost savings

With the introduction of Eaton's Crouse-Hinds Ex-d MCCBs up to 225 A it becomes easier and cost-effective to realise a power distribution board for hazardous environment.

Conventionally an Ex-d enclosure with a minimum volume of 20 litres (e.g. GHG 64 -size 4 or 5) has to be selected to built in an industrial MCCB and add Ex-d cable bushings for wiring. To actuate the MCCB an Ex-d handle must be installed too.

Using the new GHG6277 series in a standard Ex e enclosure (GHG 619) with an external operating handle, the Ex d aluminum enclosure can be eliminated from the panel.

By combining with "SynergEx series lighting and heat tracing panelboard" or other GHG62 encapsulated components (MCBs, RCDs, & contactors) along with the GHG 758 Ex e busbar system, Eaton's Crouse-Hinds division can offer complete distribution panels for motor or power circuits, all without a need for expensive Ex-d enclosures.

This concept saves money and time for installation and maintenance.



Features

- Protection against electrical overload. Provides upstream protection for elevated electrical currents occurring outside of normal operation
- Protection against electrical faults. Immediately interrupts damaging high currents which occur during a line fault or short circuit
- Function as a switch-disconnector. Rated with AC3 switching capacity for making & breaking of electrical loads

Test button

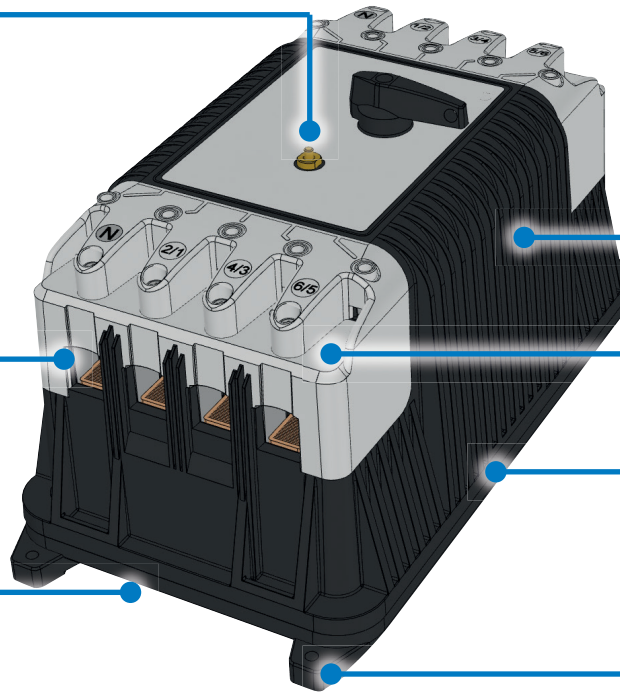
push-to-trip mechanism for manual trip and testing of the breaker operation

Wire connecting terminals

Allows for single conductor up to 185 mm²

Engineered air gap

Aids in temperature reduction and improves air flow



Heat dissipation ribs

Enlarged surface area for better cooling of the integrated components

IP20

touch safe (IP20) operating controls

Tamper-proof friction welded design

Maximum security to eliminate risk of flame path damage and prevent safety critical changes to the MCCB during maintenance

Mounting feet

Easy access for mounting/removing breakers

Type key for MCCB

GHG6277 X YY R0 A B C

Type	Configuration X	Accessories YY	Version	# of poles	Short Circuit Capacity	Rated Current NEC
GHG6277 encapsulated MCCB	0 = MCCB only 1 = MCCB + 1NO 2 = MCCB + 1NC 3 = MCCB + trip indicator 1NO 4 = MCCB + 1NO/1NC + trip indicator 1NC 5 = MCCB + 2NO 6 = MCCB + 2NC 7 = MCCB + 2NO + trip indicator 1NO 8 = MCCB + 2NC + trip indicator 1NO 9 = MCCB + 1NO + 1NC + trip indicator 1NO	00 = MCCB only 01 = shunt trip 24V AC/DC + early make 1NO 02 = shunt trip 110V-130V AC + early make 1NO 03 = shunt trip 208V-250V AC + early make 1NO 04 = shunt trip 380V-440V AC + early make 1NO 05 = uv release 24V 50/60Hz + early make 1NO 06 = uv release 110V-130V 50/60Hz + early make 1NO 07 = uv release 208V-240V 50/60Hz + early make 1NO 09 = uv release 480V-525V 50/60Hz + early make 1NO 10 = shunt trip 24V AC 11 = shunt trip 110V-130V AC 12 = shunt trip 208V-250V AC 13 = shunt trip 380V-440V AC 14 = uv release 24V 50/60Hz 15 = uv release 110V-130V 50/60Hz 16 = uv release 208V-240V 50/60Hz 18 = uv release 480V-525V 50/60Hz 19 = early make aux switch 2NO 20 = uv release 24V DC	R0 = E-series version (standard)	3 = 3pole NEC 4 = 4pole NEC	1 = 10 kA NEC @ 480/277 V 2 = 25 kA NEC @ 480/277 V *)	1 = 50 A 2 = 60 A 3 = 80 A 4 = 100 A 5 = 125 A 6 = 150 A 7 = 200 A *) 8 = 225 A *) 9 = 175 A *) Operational currents 20 A to 40 A on request

*) 3-pole only

NOTE: all combinations of „Configuration“ and „Accessories“ are possible

GHG 6277 Molded Case Circuit Breaker (MCCB) E-series



GHG 6277

Technical data E-series NEC

		MCCB 50 A up to 225 A
Standard Approval		UL489, CSA 22.2 No. 5.1 & IEC/EN 60947
Marking accd. to CAN/CSA C22.2 No. 60079 & UL 60079		Class I, Division 2, Groups A, B, C and D Class I, Zone 1, AEx de IIB/IIC Gb
Functional temperature		-20 °C up to +70 °C
Application temperature ¹⁾		-20 °C up to +55 °C (IIC / IIB based on GHG 619)
Limits of service temperature		-20 °C up to +110 °C (IIC / IIB)
Storage temperature		-20 °C up to +55 °C in original packing
Built-in position		Vertical and rotated 90 deg in all directions
Release system		thermomagnetic release
Safe Isolation	between aux contacts and main contacts	500 VAC
	between aux contacts	300 VAC
Rated impulse withstand voltage	main contacts	8000 V
	auxiliary contacts	6000 V
Rated operating voltage U_e		480 V
Rated switching capacity (UL/CSA)	SCCR 240 V (60 Hz)	10 kA or 25 kA*
	SCCR 480 V/ 277 V (60 Hz)	10 kA or 25 kA*
Rated current	main contact	50 A, 60 A, 80 A, 100 A, 125 A, 150 A, 175* A, 200 A* or 225 A*
Short current protection		$I_j = 10 \times I_n$
Utilization category to IEC/EN 60947-2		A
Making/breaking capacity at rated current up to 400 V		AC1 & AC3
Connecting terminals main contact		1 x 4.0 mm ² up to 1 x 185 mm ²
Rated voltage aux. contact		max. 500 V AC
Rated current aux contact	AC15 Ie (up to 230 V)	4 A
	AC15 Ie (up to 400 V)	2 A
	AC15 Ie (up to 500 V)	1 A
Connecting terminals aux./signal contact		1.0 mm ² up to 4.0 mm ² fine stranded
Total opening delay on short circuit		< 10 ms
Weight		10.5 kg - 4-pole / 10 kg - 3 pole
Enclosure material		Polyamide
Component degree of protection accd. EN 60529		IP20

¹⁾ The limits of the operating temperature range and the max. permissible temperature rise of the components (functional temperature) have to be taken into account (see also page 2.6.11 of Master catalogue).

* Available M 3-pole only



GHG 6277

Order Code Molded Case Circuit Breaker (MCCB) E-series 10/25 kA NEC Version:

GHG 6277 W XX R0 Y 1 Z

Configuration	(W)
MCCB only	0
MCCB + 1NO	1
MCCB + 1NC	2
MCCB + trip indicator 1NO	3
MCCB + 1NO/1NC + trip indicator 1NC	4
MCCB + 2NO	5
MCCB + 2NC	6
MCCB + 2NO + trip indicator 1NO	7
MCCB + 2NC + trip indicator 1NO	8
MCCB + 1NO + 1NC + trip indicator 1NO	9

Accessories	(XX)
shunt trip 24 V AC/DC + early make 1NO	01
shunt trip 110 V-130 V AC + early make 1 NO	02
shunt trip 208 V-250 V AC + early make 1 NO	03
uv release 24 V 50/60 Hz + early make 1NO	05
uv release 110 V-130 V 50/60 Hz + early make 1 NO	06
uv release 208 V-240 V 50/60 Hz + early make 1 NO	07
uv release 480 V-525 V 50/60 Hz + early make 1 NO	09
shunt trip 24 V AC	10
shunt trip 110 V-130 V AC	11
shunt trip 208 V-250 V AC	12
uv release 24 V 50/60 Hz	14
uv release 110 V-130 V 50/60 Hz	15
uv release 208 V-240 V 50/60 Hz	16
uv release 480 V-525 V 50/60 Hz	18
early make aux. switch 2 NO	19
uv release 24V DC	20

# of Poles	(Y)
3 pole	3
4 pole	4

Short Circuit Capacity	
10 kA NEC @ 480/277 V	1
25 kA NEC @ 480/277 V *)	2

Rated Current (Z)	
50 A	1
60 A	2
80 A	3
100 A	4
125 A	5
150 A	6
200 A	7 *)
225 A	8 *)
175 A	9 *)

*) 3 pole only

Power Loss at In (NEC-E-series)

In [A]	3p & 4p	
	P [W]	
50 A	17	
60 A	18.4	
80 A	20.5	
100 A	25.7	
125 A	27.6	
150 A	33.6	
175 A	36.8	
200 A	48	
225 A	47.1	

Example: MCCB + 2NO, shunt trip 208V-250V AC/DC + early make 1NO, 4 poles, rated current 100 A
GHG 6277 5 03 R0 4 1 4

If used in 3 phase current system

Dimension drawing /connection diagram

