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Special Features and Accessories

Eaton's molded case circuit breakers are designed to provide circuit protection for low voltage distribution systems. They are described by NEMA as, "... a device for closing and interrupting a circuit between separable contacts under both normal and abnormal conditions," and furthermore as, "... a breaker assembled as an integral unit in a supporting and enclosing housing of insulating material." The National Electrical Code (NEC) describes them as, "A device designed to open and close a circuit by non-automatic means, and to open the circuit automatically on a predetermined overload of current, without injury to itself when properly applied within its rating."

So designed, Eaton circuit breakers protect conductors against overloads and conductors and connected apparatus, such as motors and motor starters, against short circuits.

In low voltage distribution systems, there are many varied applications of molded case circuit breakers. Eaton offers the most comprehensive family of molded case circuit breakers in the industry.

This section of circuit breakers includes:

- Thermal-magnetic trip breakers
- Electronic rms trip breakers
- Molded case switches
- Motor circuit protectors
- Current limiting breakers
- Special application breakers

Modified Breakers

Eaton breakers can be ordered with internal accessories installed. These modified breakers will be subject to an addition charge.

Special Calibration

Special non-UL listed calibrations are available for certain ambient temperatures other than 40 °C and for frequencies other than 50/60 Hz or DC. Reduced interrupting ratings will apply for 400 Hz applications.

- Add suffix H01 to breaker catalog number for 400 Hz rating

50 °C Calibration

Note: Breakers equipped with electronic trip units can operate reliably in ambient temperatures of 50 °C. Add suffix "V3" to NG MCCBs to remove standard 40 °C labeling.

Add suffix "V" to catalog number for complete thermal magnetic breaker when ordering listed ampere ratings for breakers to be used in 50 °C ambients. 50 °C ambient MCCBs are not UL listed.

Contact Eaton for availability.

Calibrations and Treatment

Description	Frame EG	JG	LG	NG	RG
Special calibration	■	■	■	■	■
Moisture-fungus treatment	■	■	■	■	■

N-Frame and HMCP (N) Shunt Trip

Voltage Rating (AC Frequency = 50/60 Hz)	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Same Side Suffix Number	Rear ② Suffix Number	Opposite Side Suffix Number	Terminal Block Same Side Suffix Number	Field Mounted Field Installation Kits ① Pigtail Leads Catalog Number	Terminal Block Catalog Number
Left-Pole Mounting AC/DC Ratings ②						
9–24 Vac or Vdc	**S01**	**S02**	**S03**	**S04**	**SNT5LP03K**	**SNT5LT03K**
48–60 Vac	**S05**	**S06**	**S07**	**S08**	**SNT5LP05K**	**SNT5LT05K**
110–240 Vac ③	**S09**	**S10**	**S11**	**S12**	**SNT5LP11K**	**SNT5LT11K**
110–125 Vdc	**S41**	**S42**	**S43**	**S44**	**SNT5LP26K**	**SNT5LT26K**
380–440 Vac or 220–250 Vdc	**S13**	**S14**	**S15**	**S16**	**SNT5LP14K**	**SNT5LT14K**
480–600 Vac	**S17**	**S18**	**S19**	**S20**	**SNT5LP18K**	**SNT5LT18K**
48–60 Vdc	**S21**	**S22**	**S23**	**S24**	**SNT5LP23K**	**SNT5LT23K**

R-Frame Shunt Trip (RH Only)

Voltage Rating (AC Frequency = 50/60 Hz)	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Suffix Number ④	Field Mounted Field Installation Kits ① Pigtail Leads Catalog Number ④
24 Vac or Vdc	**S21**	**SNT6P03K**
48–60 Vac	**S25**	**SNT6P05K**
110–240 Vac	**S29**	**SNT6P11K**
380–440 Vac or 220–250 Vdc	**S33**	**SNT6P14K**
480–600 Vac	**S37**	**SNT6P18K**
48–60 Vdc	**S88**	**SNT6P23K**
110–125 Vdc	**S45**	**SNT6P26K**

Notes

① Listed with Underwriters Laboratories for field installation under E64983.
② Standard mounting location—leads exit rear of breaker.
③ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.
④ A maximum of two shunt trip plug-in modules may be installed in a circuit breaker.

N-Frame and HMCP (N) Shunt Trip Electrical Rating Data ①②③

	Application Ratings			Electrical Operating Ratings					
Catalog Number	**Voltage (V)**	**Frequency (Hz)**	**Supply Voltage (V)**	**Minimum Operating Voltage (V)**	**I_p (A)**	**I_{rms} at 0.25 (A)**	**I_{rms} at 0.33s (A)**	**VA**	**One Minute Dielectric Withstand Voltage (V)**
SNT5LP03K or SNT5LT03K	9–24	50/60	9	6.3	7.2		5.1	46	1048
			12		11.6		8.2	98	
			24		28		19.8	475	
	9–24	DC	9	7.2		8.8		79	
			12			12.1		145	
			24			25.4		610	
SNT5LP05K SNT5LT05K	48–60	50/60	48	34	2.4		1.7	82	1120
			60		3		2.1	126	
SNT5LP11K or SNT5LT11K	110–240	50/60	110	77	0.86		0.61	67	1480
			120		0.98		0.69	83	
			127		1.1		0.75	95	
			208		2.3		1.6	333	
			220		2.4		1.7	374	
			240		2.6		1.8	432	
SNT5LP14K or SNT5LT14K	380–440	50/60	380	266	0.28		0.2	76	1880
			400		0.31		0.22	88	
			415		0.33		0.23	95	
			440		0.35		0.25	110	
	220–250	DC	220	154		0.21		46	
			250			0.22		55	
SNT5LP18K or SNT5LT18K	480–600	50/60	480	336	0.06		0.04	19	2200
			525		0.08		0.06	32	
			550		0.08		0.06	33	
			600		0.1		0.07	42	
SNT5LP23K SNT5LT23K	48–60	DC	48	34		1.4		67	1120
			60			1.7		102	
SNT5LP26K or SNT5LT26K	110–125	DC	110	77		1.1		121	1250
			120			1.2		144	
			125			1.2		150	

Notes

① Approximate unlatching time: 6 milliseconds.
② Approximate total circuit breaker contact opening time: 18 milliseconds.
③ Endurance: 3000 electrical operations plus 1000 mechanical operations.

Accessories Selection Guide and Ordering Information

Enclosures

Type 1 General Purpose

- Surface or flush mounting
- 15–1200 ampere range
- 600 Vac, 500 Vdc

Type 1 enclosed breakers are designed for use in commercial buildings, apartment buildings and other areas where a general purpose enclosure is applicable. The breaker is front operable and is capable of being padlocked in either the ON or OFF position. Ratings through 1200 amperes are listed with Underwriters Laboratories as approved for service entrance application. Both surface and flush mounted enclosures are available.

Type 3R Rainproof Surface Mounting

- Interchangeable hubs (through 400 amperes)
- 15–1200 ampere range
- 600 Vac, 500 Vdc

This general purpose outdoor service center employs a circuit breaker inside a weatherproof sheet steel breaker enclosure to serve as a main disconnect and protective device for feeder circuits. Ratings through 1200 amperes are listed by Underwriters Laboratories as suitable for service entrance application.

Type 12 Dustproof Surface Mounting

- No knockouts or other openings
- 15–1200 ampere range
- 600 Vac, 500 Vdc

The Type 12 enclosure is designed in line with specifications for special industry applications where unusually severe conditions involving oil, coolant, dust and other foreign materials exist in the operating atmosphere. The handle padlocks in the OFF position and the cover is interlocked with the handle mechanism to prevent opening the cover with the circuit breaker in the ON position. Ratings through 1200 amperes are listed by Underwriters Laboratories as suitable for service entrance application.

Enclosure Selection Data

Breaker Frame Amperes	Enclosure Type Class	Catalog Number
FG 15–225	Type 1	**SFDN225**
	Type 3R	**RFDN225**
	Type 12	**JFDN225**
JG 175–250	Type 1	**SJDN250**
	Type 3R	**RJDN250**
	Type 12	**JJDN250**
KG 300–400	Type 1	**SKDN400**
	Type 3R	**RKDN400**
	Type 12	**JKDN400**
LG 450–600	Type 1	**SLDN600**
	Type 3R	**RLDN600**
	Type 12	**JLDN600**
NG 700–1200	Type 1	**SNDN1200**
	Type 3R	**RNDN1200**
	Type 12	**JNDN1200**

Options and Accessories

Standard Terminals

Breaker Frame	Max. Amp Rating	AWG Wire Range	Metric Wire Range mm^2	Catalog Number
FG	100	14–1/0	2.5–50	**3T100FB** ①
FG	150	4–4/0	25–95	**3TA225FD** ①
JG	250	4–350 kcmil	25–185	**TA250KB**
KG	350	250–500 kcmil	120–240	**TA350K**
KG	400	3/0–250 kcmil (2)	95–120	**3TA400K** ①
LG	600	250–500 kcmil (2)	120–240	**3TA603LDK**
NG	700	1–500 kcmil (2)	50–300	**TA700NB1**
NG	1000	3/0–400 kcmil (3)	95–185	**TA1000NB1**
NG	1200	4/0–500 kcmil (4)	120–300	**TA1200NB1**

Neutral Kits, Insulated and Groundable

Max. Enclosure Rating (Amperes)	Main Lug Number Size Cu/Al	Ground Lug Size Cu/Al	Catalog Number
100	(1) 14–1/0	(1) 14–1/0	**INK100**
250	(1) 6–350 kcmil	(1) 4–300 kcmil	**INK250**
400	(1) 4–750 kcmil or (2) 1/0–250 kcmil	(1) 4–300 kcmil	**INK400**
600	(2) 250–500 kcmil	(1) 4–300 kcmil	**INK600**
1200	(3) 1/0 to 750 kcmil or (4) 1/0 to 750 kcmil	(1) 6–250 kcmil	**INK1200**

Internal Accessories

Auxiliary Switch ②

		1A-1B		2A-2B
Breaker Frame	Factory Mounted	Field Kit Catalog Number	Factory Mounted	Field Kit Catalog Number
FG ③	A06	**A1X1PK**	A13	**A2X1RPK**
JG	A06	**A1X2PK**	A13	**A2X2PK**
KG	A06	**A1X3PK**	A13	**A2X3PK**
LG	A06	**A1X4PK**	A13	**A2X4PK**
NG	A06	**A1X5PK**	A13	**A2X5PK**

Shunt Trip ②

Breaker Frame	Rating	Factory Mounted	Field Kit Catalog Number
FG ③	12–24 Vdc	S02	**SNT1LP03K**
JG	12–24 Vdc	S42	**SNT2P04K**
KG	12–24 Vdc	S42	**SNT3P04K**
LG	12–24 Vdc	S02	**SNT4LP03K**
NG	12–24 Vdc	S02	**SNT5LP03K**

Notes

① Package of three terminals.
② Other accessories are available. Same as standard frame breakers.
③ Field installation on the FG Frame is not UL listed.