

Molded Case Circuit Breaker Product Family



Product Overview

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.

Contents

Description

Page

Standards and Certifications	V4-T2-255
Quick Reference	V4-T2-256
G-Frame (15–100 Amperes)	V4-T2-259
F-Frame (10–225 Amperes)	V4-T2-273
J-Frame (70–250 Amperes)	V4-T2-291
K-Frame (70–400 Amperes)	V4-T2-299
L-Frame (125–600 Amperes)	V4-T2-323
M-Frame (300–800 Amperes)	V4-T2-349
N-Frame (400–1200 Amperes)	V4-T2-360
R-Frame (800–2500 Amperes)	V4-T2-375
Motor Circuit Protectors (MCP)	V4-T2-394
Motor Protection Circuit Breakers (MPCB)	V4-T2-405
Type ELC Current Limiter Attachment (Size 0–4)	V4-T2-407
Current Limiting Circuit Breaker Module	V4-T2-408
Internal Accessories	V4-T2-411
External Accessories	V4-T2-444

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50 °C Calibration

Add suffix **V** to catalog Number for complete breaker, listed above, when ordering listed ampere ratings for breakers to be used in 50 °C ambients. (No UL label.)

Moisture-Fungus Treatment

All circuit breaker cases are molded from glass-polyester which does not support the growth of fungus. Any parts which are susceptible to the growth of fungus will require special treatment.

Freeze-Tested Circuit Breakers

The circuit breakers may be ordered with freeze testing. This option uses special lubrication and mechanical operation is verified at –40 °C.

Marine Applications

E- to R-Framed circuit breakers can be supplied to meet the following marine specifications:

- U.S. Coast Guard CFR 46; ABS—American Bureau of Shipping; IEEE 45; DNV; Lloyds; and ABS/NVR

These specifications generally require molded case circuit breakers to be supplied with 50 °C ambient, and plug-in adapter kits. When plug-in adapter kits are used, no terminals need be supplied (switchboard applications).

Circuit breakers can also be supplied to meet UL 489 Supplement SA (Marine use) and UL 489 Supplement SB (Naval Use).

UL 489 Supplement SA applies to vessels over 65 feet (19.8 m) in length. Requirements include 40 °C ambient calibration, special labeling, and no use of aluminum conductors or terminals. (No 50 °C.)

- Suffix H08

Or you can choose to add 50 °C ambient but then there is no "UL" mark.

- Suffix VH08

UL 489 Supplement SB requires partial 50 °C ambient calibration, vibration testing, special nameplating and no use of aluminum conductors or terminals. Eaton chooses to always fully calibrate to 50 °C ambient. ("Naval" labeled per UL, and UL now allows 50 °C label here.)

- Suffix VH09

Certified Test Reports

Eaton breakers can be ordered with certified test reports at the time of order entry. Test report documents the thermal and magnetic or electronic tripping characteristics of the individual breaker. Breaker and test report must be ordered together. Add suffix 12 to breaker catalog number and enter separate line item on order for certified test report.

Standards and Certifications

Molded case circuit breakers are designed to conform with the following standards:

- Underwriters Laboratories Inc., Standard UL 489, molded case circuit breakers and circuit breaker enclosures
- National Electrical Manufacturers Association (NEMA) Standards Publication No. AB1-1993, molded case circuit breakers
- Australian Standard AS 2184, molded case circuit breakers
- British Standards Institution Standard BS 4752: Part 1, switchgear and control gear Part 1: circuit breakers
- Canadian Standards Association (CSA) Standard C22.2 No. 5, service entrance and branch circuit breakers
- International Electrotechnical Commission Recommendations IEC 60947-2, circuit breakers
- Japanese T-Mark Standard molded case circuit breakers
- South African Bureau of Standards, Standard SABS 156, Standard Specification for molded case circuit breakers
- Swiss Electro-Technical Association Standard SEV 157-1, safety regulations for circuit breakers
- Union Technique de l'Electricite Standard NF C 63-120, low voltage switchgear and control gear circuit breaker requirements
- Verband Deutscher Elektrotechniker (Association of German Electrical Engineers) Standard VDE 0660, low voltage switchgear and control gear, circuit breakers

Conformance with these standards satisfies most local and international codes, assuming user acceptability and simplified application.

Molded case circuit breakers equal or exceed Federal Specification Classification W-C-375b requirements for the particular class associated with the circuit breaker frame being considered.

Open breakers do not have service entrance ratings. Service entrance rating is part of the enclosure.



J-Frame

Circuit Breaker Type	Continuous Ampere Rating at 40 °C	No. of Poles	Volts		Type of Trip ①	Federal Specification W-C-375b	UL Listed Interrupting Ratings (rms Symmetrical Amperes)								Page Number
			AC	DC			AC (kA)				DC (kA) ②				
							120	120/240	240	277	480	600	125	250	
JDB	70–250	2, 3	600	250	N.I.T.U.	22a	—	—	65	—	35	18	—	10	V4-T2-294
JD	70–250	2, 3, 4	600	250	I.T.U.	22a	—	—	65	—	35	18	—	10	V4-T2-293
HJD	70–250	2, 3, 4	600	250	I.T.U.	22a	—	—	100	—	65	25	—	22	V4-T2-293
JDC ③	70–250	2, 3, 4	600	250	I.T.U.	22a	—	—	200	—	100	35	—	22	V4-T2-293

K-Frame

Circuit Breaker Type	Continuous Ampere Rating at 40 °C	No. of Poles	Volts		Type of Trip ①	Federal Specification W-C-375b	UL Listed Interrupting Ratings (rms Symmetrical Amperes)								Page Number
			AC	DC			AC (kA)				DC (kA) ②				
							120	120/240	240	277	480	600	125	250	
DK	250–400	2, 3	240	250	N.I.T.U.	14b	—	—	65	—	—	—	—	10	V4-T2-305
KDB	100–400	2, 3	600	250	N.I.T.U.	23a	—	—	65	—	35	25	—	10	V4-T2-305
KD	100–400	2, 3, 4	600	250	I.T.U.	23a	—	—	65	—	35	25	—	10	V4-T2-302, V4-T2-303, V4-T2-307, V4-T2-310
CKD	100–400	2, 3, 4	600	250	I.T.U.	23a	—	—	65	—	35	25	—	—	V4-T2-304, V4-T2-313, V4-T2-315
HKD	100–400	2, 3, 4	600	250	I.T.U.	23a	—	—	100	—	65	35	—	22	V4-T2-302, V4-T2-303, V4-T2-307, V4-T2-310
CHKD	100–400	2, 3, 4	600	250	I.T.U.	23a	—	—	100	—	65	35	—	—	V4-T2-304, V4-T2-313, V4-T2-315
KDC ③	100–400	2, 3, 4	600	250	I.T.U.	23a	—	—	200	—	100	65	—	22	V4-T2-302, V4-T2-303, V4-T2-307, V4-T2-310

L-Frame

Circuit Breaker Type	Continuous Ampere Rating at 40 °C	No. of Poles	Volts		Type of Trip ①	Federal Specification W-C-375b	UL Listed Interrupting Ratings (rms Symmetrical Amperes)								Page Number
			AC	DC			AC (kA)				DC (kA) ②				
							120	120/240	240	277	480	600	125	250	
LDB	300–600	2, 3	600	250	N.I.T.U.	23a	—	—	65	—	35	25	—	22	V4-T2-328
LD	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	65	—	35	25	—	22	V4-T2-326, V4-T2-327, V4-T2-332
CLD	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	65	—	35	25	—	—	V4-T2-328, V4-T2-338
HLD	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	100	—	65	35	—	25	V4-T2-326, V4-T2-327, V4-T2-332
CHLD	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	100	—	65	35	—	—	V4-T2-328, V4-T2-338
LDC ③	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	200	—	100	50	—	30	V4-T2-326, V4-T2-327, V4-T2-334
CLDC ③	300–600	2, 3, 4	600	250	I.T.U.	23a	—	—	200	—	100	50	—	30	V4-T2-328, V4-T2-340

M-Frame

Circuit Breaker Type	Continuous Ampere Rating at 40 °C	No. of Poles	Volts		Type of Trip ①	Federal Specification W-C-375b	UL Listed Interrupting Ratings (rms Symmetrical Amperes)								Page Number
			AC	DC			AC (kA)				DC (kA) ②				
							120	120/240	240	277	480	600	125	250	
MDL	300–800	2, 3	600	250	I.T.U.	23a	—	—	65	—	50	25	—	22	V4-T2-351, V4-T2-353
CMDL	300–800	2, 3	600	250	I.T.U.	23a	—	—	65	—	50	25	—	—	V4-T2-353
HMDL	300–800	2, 3	600	250	I.T.U.	23a	—	—	100	—	65	35	—	25	V4-T2-351, V4-T2-353
CHMDL	300–800	2, 3	600	250	I.T.U.	23a	—	—	100	—	65	35	—	—	V4-T2-353

Notes

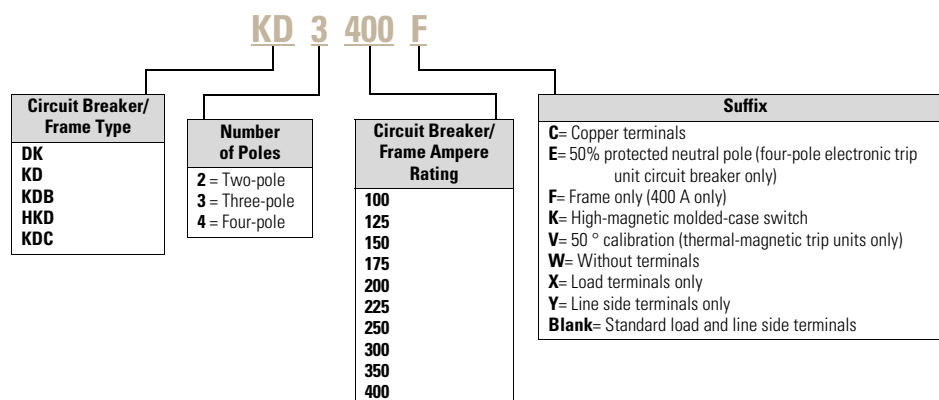
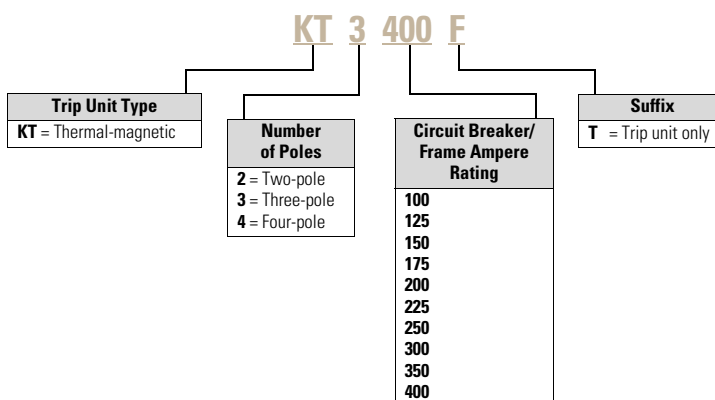
① N.I.T.U. is non-interchangeable trip unit and I.T.U. is interchangeable trip unit.

② Two-pole circuit breaker, or two poles of three-pole circuit breaker at 250 Vdc.

③ Current limiting.

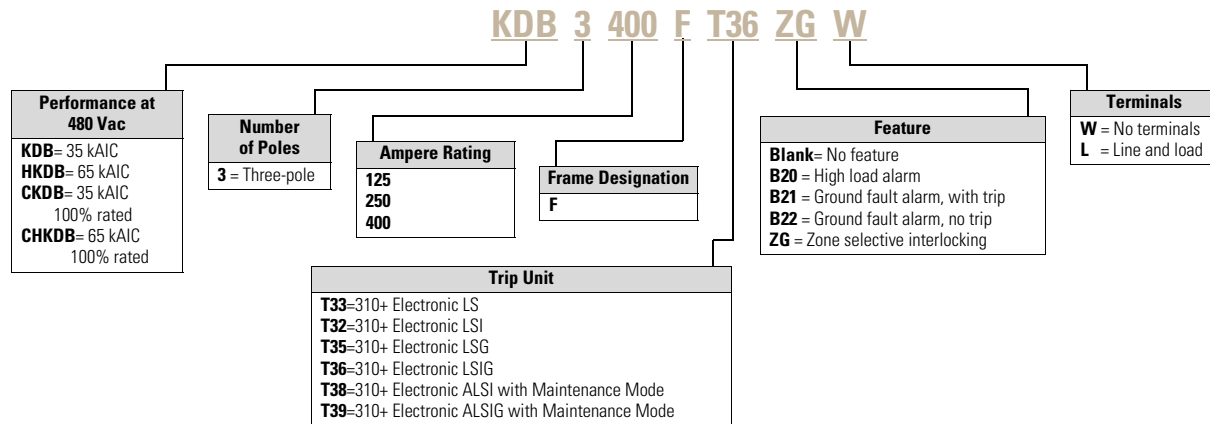
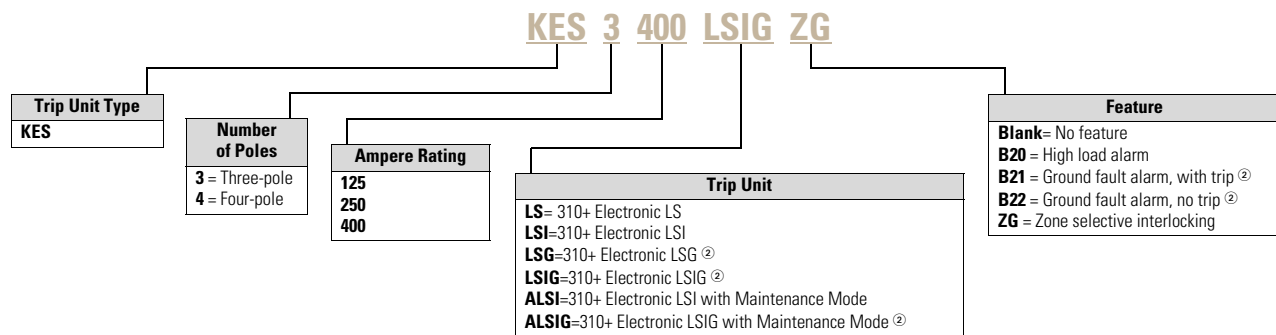
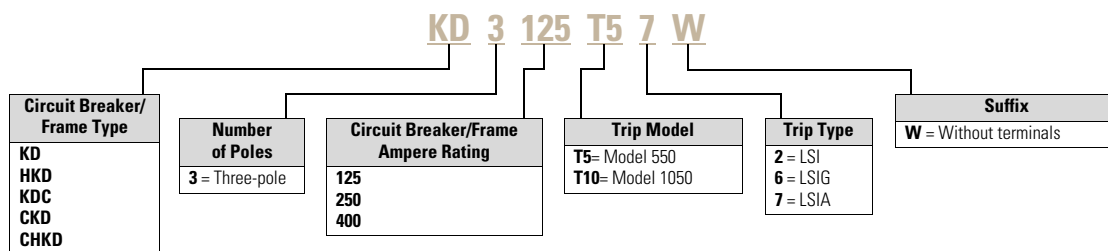
Catalog Number Selection

This information is presented only as an aid to understanding catalog numbers. It is not to be used to build catalog numbers for circuit breakers or trip units.

K-Frame with Thermal-Magnetic Trip Unit Technology**Thermal-Magnetic Breakers and Frames ①****Thermal-Magnetic Trip Unit ①****Notes**

① Frames are the same for thermal-magnetic or 310+ electronic trip units, e.g., **KD3400F** or **HKD3400F**.

Ampere rating available with electronic trip unit only.

K-Frame with 310+ Electronic Trip Unit Technology^①**310+ Circuit Breakers**^②**310+ Electronic Trip Units**^③**K-Frame with OPTIM Trip Unit Technology****OPTIM Circuit Breakers****Notes**

- ① Cannot combine 'B2X' suffixes with 'B2X' suffixes.
 ② Not available in four-pole configurations.
 ③ Frames are the same for thermal-magnetic or 310+ electronic trip units, e.g., **KD3400F**, **HKD3400F**, etc.

Product Selection

2

Types KD, HKD and KDC Thermal-Magnetic Circuit Breakers with Interchangeable Trip Units

Maximum Continuous Ampere Rating at 40 °C	Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals ^① Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals ^① Catalog Number	Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac Factory Assembled Circuit Consisting of Frame, Trip Unit and Terminals ^① Catalog Number	Thermal-Magnetic Trip Unit Only ^① For Use with Standard or High or Ultra High Interrupting Frames Catalog Number	Standard Terminals Only See Page V4-T2-317 for Optional Terminals Catalog Number
Two-Pole					
100	KD2100	HKD2100	KDC2100	KT2100T	TA300K ^②
125	KD2125	HKD2125	KDC2125	KT2125T	TA300K ^②
150	KD2150	HKD2150	KDC2150	KT2150T	TA300K ^②
175	KD2175	HKD2175	KDC2175	KT2175T	TA300K ^②
200	KD2200	HKD2200	KDC2200	KT2200T	TA300K ^②
225	KD2225	HKD2225	KDC2225	KT2225T	TA300K ^②
250	KD2250	HKD2250	KDC2250	KT2250T	TA350K ^②
300	KD2300	HKD2300	KDC2300	KT2300T	TA350K ^②
350	KD2350	HKD2350	KDC2350	KT2350T	TA350K ^②
400	KD2400	HKD2400	KDC2400	KT2400T	2TA400K ^③
Three-Pole					
100	KD3100	HKD3100	KDC3100	KT3100T	TA300K ^②
125	KD3125	HKD3125	KDC3125	KT3125T	TA300K ^②
150	KD3150	HKD3150	KDC3150	KT3150T	TA300K ^②
175	KD3175	HKD3175	KDC3175	KT3175T	TA300K ^②
200	KD3200	HKD3200	KDC3200	KT3200T	TA300K ^②
225	KD3225	HKD3225	KDC3225	KT3225T	TA300K ^②
250	KD3250	HKD3250	KDC3250	KT3250T	TA350K ^②
300	KD3300	HKD3300	KDC3300	KT3300T	TA350K ^②
350	KD3350	HKD3350	KDC3350	KT3350T	TA350K ^②
400	KD3400	HKD3400	KDC3400	KT3400T	3TA400K ^③
Four-Pole					
100	KD4100	HKD4100	KDC4100	KT3100T	TA300K ^②
125	KD4125	HKD4125	KDC4125	KT3125T	TA300K ^②
175	KD4175	HKD4175	KDC4175	KT3175T	TA300K ^②
200	KD4200	HKD4200	KDC4200	KT3200T	TA300K ^②
225	KD4225	HKD4225	KDC4225	KT3225T	TA300K ^②
250	KD4250	HKD4250	KDC4250	KT3250T	TA350K ^②
300	KD4300	HKD4300	KDC4300	KT3300T	TA350K ^②
350	KD4350	HKD4350	KDC4350	KT3350T	TA350K ^②
400	KD4400	HKD4400	KDC4400	KT3400T	4TA400K ^③

Notes

- ^① Magnetic trip adjustable 5–10 times continuous ampere rating.
- ^② Individually packed.
- ^③ 2TA400K, 3TA400K and 4TA400K terminal kits contain one terminal for each pole and one terminal cover.

Types KD, HKD and KDC Thermal-Magnetic Circuit Breakers—Frame Only

Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac Catalog Number	Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac Catalog Number
Two-Pole		
KD2400F	HKD2400F	KDC2400F
Three-Pole		
KD3400F	HKD3400F	KDC3400F
Four-Pole		
KD4400F	HKD4400F	KDC4400F

Types KD, HKD and KDC Electronic Circuit Breakers with Interchangeable 310+ Trip Units

Order as individual components: breaker frame, trip unit and terminals. See 310+ adjustability specifications on **Page V4-T2-320**.

Types KD, HKD and KDC Electronic Circuit Breakers with Interchangeable 310+ Trip Units—Three-Pole

Max. Cont. Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip RMS 310+ Trip Unit Only ^①				Neutral CT for LSG and LSIG ^{②③} Catalog Number	Terminal Information
	Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac	Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac	Standard LS	Options LSI	LSG	LSIG		
				Adjustable Short Time Pickup with I ² t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I ² t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Delay and Ground Fault Protection		
125	KD3400F	HKD3400F	KDC3400F	KES3125LS	KES3125LSI	KES3125LSG	KES3125LSIG	LGFC125	See Page V4-T2-317
250	KD3400F	HKD3400F	KDC3400F	KES3250LS	KES3250LSI	KES3250LSG	KES3250LSIG	LGFC250	
400	KD3400F	HKD3400F	KDC3400F	KES3400LS	KES3400LSI	KES3400LSG	KES3400LSIG	LGFC400	

Types KD, HKD and KDC Electronic Circuit Breakers with Interchangeable 310+ Trip Units—Four-Pole ^{④⑤}

Max. Cont. Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip RMS 310+ Trip Unit Only ^①				Neutral CT for LSG and LSIG ^{②③} Catalog Number	Terminal Information
	Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac Catalog Number	High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac	Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac	Standard LS	Options LSI	LSG	LSIG		
				Adjustable Short Time Pickup with I ² t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I ² t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Delay and Ground Fault Protection		
125	KD4400F	HKD4400F	KDC4400F	KES4125LS	KES4125LSI	—	—	—	See Page V4-T2-317
250	KD4400F	HKD4400F	KDC4400F	KES4250LS	KES4250LSI	—	—	—	
400	KD4400F	HKD4400F	KDC4400F	KES4400LS	KES4400LSI	—	—	—	

Notes

① For AC use only.

② Required for four-wire systems if neutral protection is desired.

③ Included with LSG and LSIG trip units.

④ Trip unit includes protected neutral pole. Use corresponding three-pole trip unit if protected neutral pole is not required.

⑤ Fully rated neutral pole protection is standard. For 50% rated protection on neutral pole, add Suffix E to four-pole trip unit catalog number.

Type KDB with Digitrip 310+ Non-Interchangeable Trip Unit Suitable for Reverse FeedSee 310+ adjustability specifications on **Page V4-T2-320**.

2

Factory Assembled Circuit Breaker Consisting of Frame and Trip Unit Less Terminals ^①							
Maximum Continuous Ampere Rating at 40 °C	Number of Poles	Standard LS	Optional LSI	LSG	LSIG	Neutral CT for LSG and LSIG ^{②③}	Terminal Information
		Adjustable Short Time Pickup with I ² t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I ² t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Ground Fault Protection		
		Catalog Number				Catalog Number	
125	3	KDB3125FT33W	KDB3125FT32W	KDB3125FT35W	KDB3125FT36W	LGFC125	See Page V4-T2-318
250	3	KDB3250FT33W	KDB3250FT32W	KDB3250FT35W	KDB3250FT36W	LGFC250	
400	3	KDB3400FT33W	KDB3400FT32W	KDB3400FT35W	KDB3400FT36W	LGFC400	

Type HKDB with Digitrip 310+ Non-Interchangeable Trip Unit Suitable for Reverse FeedSee 310+ adjustability specifications on **Page V4-T2-320**.

Factory Assembled Circuit Breaker Consisting of Frame and Trip Unit Less Terminals ^①							
Maximum Continuous Ampere Rating at 40 °C	Number of Poles	Standard LS	Optional LSI	LSG	LSIG	Neutral CT for LSG and LSIG ^{②③}	Terminal Information
		Adjustable Short Time Pickup with I ² t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay	Adjustable Short Time Pickup with I ² t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Ground Fault Protection		
		Catalog Number				Catalog Number	
125	3	HKDB3125FT33W	HKDB3125FT32W	HKDB3125FT35W	HKDB3125FT36W	LGFC125	See Page V4-T2-318
250	3	HKDB3250FT33W	HKDB3250FT32W	HKDB3250FT35W	HKDB3250FT36W	LGFC250	
400	3	HKDB3400FT33W	HKDB3400FT32W	HKDB3400FT35W	HKDB3400FT36W	LGFC400	

100% Rated Types CKD and CHKD Electronic Circuit Breakers

The NEC allows the breaker to be rated at 100% of its frame size in an assembly, provided that 90 °C wire is applied at the 75 °C ampacity. All 100% rated circuit breakers have electronic trip units.

100% Rated Types CKD and CHKD Electronic Circuit Breakers—Three-PoleSee 310+ adjustability specifications on **Page V4-T2-320**.

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only		Digitrip RMS 310+ Trip Unit Only		Adjustable Short Time Pickup with I ² t Short Delay and Ground Fault Protection	Independently Adjustable Short Time Pickup and Delay and Ground Fault Protection	Neutral CT for LSG and LSIG ^{②③}	Terminal Information
	Standard Interrupting Capacity	High Interrupting Capacity	Standard	Options				
			Adjustable Short Time Pickup with I ² t Short Delay Ramp	Independently Adjustable Short Time Pickup and Delay				
			Catalog Number				Catalog Number	
125	CKD3400F	CHKD3400F	KES3125LS	KES3125LSI	KES3125LSG	KES3125LSIG	LGFC125	See Page V4-T2-317
250	CKD3400F	CHKD3400F	KES3250LS	KES3250LSI	KES3250LSG	KES3250LSIG	LGFC250	
400	CKD3400F	CHKD3400F	KES3400LS	KES3400LSI	KES3400LSG	KES3400LSIG	LGFC400	

Notes

- ① For AC use only.
- ② Required for four-wire systems if neutral protection is desired.
- ③ Included with LSG and LSIG trip units.

Types DK and KDB Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units

Suitable for reverse feed application.

Types DK and KDB Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units

Maximum Continuous Ampere Rating at 40 °C	240 Vac Rated, 250 Vdc			600 Vac Rated, 250 Vdc	
	Complete Circuit Breaker Without Line and Load Terminals Catalog Number	With Line Terminals Only Catalog Number	With Standard Line and Load Terminals Only Catalog Number	Complete Circuit Breaker Without Line and Load Terminals Catalog Number	With Standard Line and Load Terminals Catalog Number
Two-Pole					
100	—	—	—	KDB2100W	KDB2100
125	—	—	—	KDB2125W	KDB2125
150	—	—	—	KDB2150W	KDB2150
175	—	—	—	KDB2175W	KDB2175
200	—	—	—	KDB2200W	KDB2200
225	—	—	—	KDB2225W	KDB2225
250	DK2250W	DK2250Y	DK2250	KDB2250W	KDB2250
300	DK2300W	DK2300Y	DK2300	KDB2300W	KDB2300
350	DK2350W	DK2350Y	DK2350	KDB2350W	KDB2350
400	DK2400W	DK2400Y	DK2400	KDB2400W	KDB2400
Three-Pole					
100	—	—	—	KDB3100W	KDB3100
125	—	—	—	KDB3125W	KDB3125
150	—	—	—	KDB3150W	KDB3150
175	—	—	—	KDB3175W	KDB3175
200	—	—	—	KDB3200W	KDB3200
225	—	—	—	KDB3225W	KDB3225
250	DK3250W	DK3250Y	DK3250	KDB3250W	KDB3250
300	DK3300W	DK3300Y	DK3300	KDB3300W	KDB3300
350	DK3350W	DK3350Y	DK3350	KDB3350W	KDB3350
400	DK3400W	DK3400Y	DK3400	KDB3400W	KDB3400

Molded Case Switches

Eaton's molded case switches are used as compact switches in applications requiring high current switching capabilities. Molded case switches are constructed of circuit breaker

components and are of the high instantaneous automatic type. Molded case switches are listed in accordance with Underwriters Laboratories Standard UL 489.

Molded Case Switches

	240 Vac Maximum, 250 Vdc	600 Vac Maximum, 250 Vdc	600 Vac Maximum, 250 Vdc
Maximum Continuous Ampere Rating at 40 °C	Complete Circuit Breaker with Standard Line and Load Terminals Catalog Number	Complete Circuit Breaker with Standard Line and Load Terminals Catalog Number	Complete Circuit Breaker with Standard Line and Load Terminals. Suitable for Reverse Feed Use Catalog Number
Two-Pole			
400	DK2400K	KD2400K	KDB2400K
	—	HKD2400K	HKDB2400K
Three-Pole			
400	DK3400K	KD3400K	KDB3400K
	—	HKD3400K	HKDB3400K
Four-Pole			
400	—	KD4400K	KDB4400K
	—	HKD4400K	HKDB4400K

Note

Molded case switches may open above 4000 amperes.

Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug

Order as individual components: breaker frame (which includes trip unit), rating plug, terminals.

Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
	LSI Catalog Number	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac					
125	KD3125T52W	KD3125T56W	KD3125T57W	70	ORPK125A70
				90	ORPK125A90
				100	ORPK125A100
				110	ORPK125A110
				125	ORPK125A125
250	KD3250T52W	KD3250T56W	KD3250T57W	125	ORPK025A125
				150	ORPK025A150
				175	ORPK025A175
				200	ORPK025A200
				225	ORPK025A225
400	KD3400T52W	KD3400T56W	KD3400T57W	250	ORPK025A250
				200	ORPK40A200
				225	ORPK40A225
				250	ORPK40A250
				300	ORPK40A300
				350	ORPK40A350
				400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Zone interlocking, PowerNet, or both features can be added at the factory by adding suffixes **ZG**, **PN** or **ZGP** respectively to above catalog number.

Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
	LSI Catalog Number	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac					
125	HKD3125T52W	HKD3125T56W	HKD3125T57W	70	ORPK125A70
				90	ORPK125A90
				100	ORPK125A100
				110	ORPK125A110
				125	ORPK125A125
250	HKD3250T52W	HKD3250T56W	HKD3250T57W	125	ORPK025A125
				150	ORPK025A150
				175	ORPK025A175
				200	ORPK025A200
				225	ORPK025A225
400	HKD3400T52W	HKD3400T56W	HKD3400T57W	250	ORPK025A250
				200	ORPK40A200
				225	ORPK40A225
				250	ORPK40A250
				300	ORPK40A300
				350	ORPK40A350
				400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Zone interlocking, PowerNet, or both features can be added at the factory by adding suffixes **ZG**, **PN** or **ZGP** respectively to above catalog number.

Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
	L – Adjustable Long Delay Pickup (I _L) with Adjustable Long Delay Time (I ² t or I ⁴ t Response) ① S – Adjustable Short Delay Pickup with Adjustable Short Delay Time (I ² t or Flat Response) I – Adjustable Instantaneous Pickup G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Time (I ² t or Flat Response) A – Adjustable Ground Fault Alarm with Adjustable Ground Fault Time (I ² t or Flat Response) OPTIM 550 ②			Fixed Rating Plug Catalog Number	
	LSI Catalog Number	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	
Three-Pole Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac					
125	KDC3125T52W	KDC3125T56W	KDC3125T57W	70	ORPK125A70
				90	ORPK125A90
				100	ORPK125A100
				110	ORPK125A110
				125	ORPK125A125
250	KDC3250T52W	KDC3250T56W	KDC3250T57W	125	ORPK025A125
				150	ORPK025A150
				175	ORPK025A175
				200	ORPK025A200
				225	ORPK025A225
400	KDC3400T52W	KDC3400T56W	KDC3400T57W	250	ORPK025A250
				200	ORPK40A200
				225	ORPK40A225
				250	ORPK40A250
				300	ORPK40A300
				350	ORPK40A350
				400	ORPK40A400

Notes① Long delay I⁴t response selection limits short delay time to flat response.② Zone interlocking, PowerNet, or both features can be added at the factory by adding suffixes **ZG**, **PN** or **ZGP** respectively to above catalog number.

Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug

Order as individual components: breaker frame (which includes trip unit), rating plug, terminals.

2

Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug**Digitrip OPTIM Rating Plug Only**

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only		Digitrip OPTIM Rating Plug Only	
	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac				
125	KD3125T106W	KD3125T107W	70	ORPK125A70
			90	ORPK125A90
			100	ORPK125A100
			110	ORPK125A110
			125	ORPK125A125
250	KD3250T106W	KD3250T107W	125	ORPK025A125
			150	ORPK025A150
			175	ORPK025A175
			200	ORPK025A200
			225	ORPK025A225
			250	ORPK025A250
400	KD3400T106W	KD3400T107W	200	ORPK40A200
			225	ORPK40A22
			250	ORPK40A250
			300	ORPK40A300
			350	ORPK40A350
			400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Factory sealed.

Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only		Digitrip OPTIM Rating Plug Only	
	L – Adjustable Long Delay Pickup (I_L) with Adjustable Long Delay Time (I^2t or I^4t Response) ^① S – Adjustable Short Delay Pickup with Adjustable Short Delay Time (I^2t or Flat Response) I – Adjustable Instantaneous Pickup G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Time (I^2t or Flat Response) A – Adjustable Ground Fault Alarm with Adjustable Ground Fault Time (I^2t or Flat Response) OPTIM 1050 ^②			
	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac				
125	HKD3125T106W	HKD3125T107W	70	ORPK125A70
			90	ORPK125A90
			100	ORPK125A100
			110	ORPK125A110
			125	ORPK125A125
250	HKD3250T106W	HKD3250T107W	125	ORPK025A125
			150	ORPK025A150
			175	ORPK025A175
			200	ORPK025A200
			225	ORPK025A225
400	HKD3400T106W	HKD3400T107W	250	ORPK025A250
			200	ORPK40A200
			225	ORPK40A225
			250	ORPK40A250
			300	ORPK40A300
			350	ORPK40A350
			400	ORPK40A400

Notes

① Long delay I^4t response selection limits short delay time to flat response.

② Factory sealed.

Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

2

Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
L – Adjustable Long Delay Pickup (I _L) with Adjustable Long Delay Time (I ² t or I ⁴ t Response) ①				
S – Adjustable Short Delay Pickup with Adjustable Short Delay Time (I ² t or Flat Response)				
I – Adjustable Instantaneous Pickup				
G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Time (I ² t or Flat Response)				
A – Adjustable Ground Fault Alarm with Adjustable Ground Fault Time (I ² t or Flat Response)				
Maximum Continuous Ampere Rating at 40 °C	OPTIM 1050 ②			
	LSIG	LSIA		Fixed Rating Plug
	Catalog Number	Catalog Number	Ampere Rating	Catalog Number
Three-Pole Ultra High Interrupting Capacity Current Limiting 600 Vac Rated 100 kAIC at 480 Vac				
125	KDC3125T106W	KDC3125T107W	70	ORPK125A70
			90	ORPK125A90
			100	ORPK125A100
			110	ORPK125A110
			125	ORPK125A125
250	KDC3250T106W	KDC3250T107W	125	ORPK025A125
			150	ORPK025A150
			175	ORPK025A175
			200	ORPK025A200
			225	ORPK025A225
			250	ORPK025A250
			200	ORPK40A200
			225	ORPK40A225
			250	ORPK40A250
			300	ORPK40A300
400	KDC3400T106W	KDC3400T107W	350	ORPK40A350
			400	ORPK40A400

Notes

① Long delay I^4t response selection limits short delay time to flat response.

② Factory sealed.

100% Rated Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug

Order as individual components: breaker frame (which includes trip unit), rating plug, terminals.

100% Rated Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
	LSI Catalog Number	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac					
125	CKD3125T52W	CKD3125T56W	CKD3125T57W	70	ORPK125A70
				90	ORPK125A90
				100	ORPK125A100
				110	ORPK125A110
				125	ORPK125A125
250	CKD3250T52W	CKD3250T56W	CKD3250T57W	125	ORPK025A125
				150	ORPK025A150
				175	ORPK025A175
				200	ORPK025A200
				225	ORPK025A225
				250	ORPK025A250
400	CKD3400T52W	CKD3400T56W	CKD3400T57W	200	ORPK40A200
				225	ORPK40A225
				250	ORPK40A250
				300	ORPK40A300
				350	ORPK40A350
				400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Zone interlocking, PowerNet, or both features can be added at the factory by adding suffixes **ZG**, **PN** or **ZGP** respectively to above catalog number (refer to **Page V4-T2-431**).

100% Rated Digitrip OPTIM 550 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only			Digitrip OPTIM Rating Plug Only	
	LSI Catalog Number	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac					
125	CHKD3125T52W	CHKD3125T56W	CHKD3125T57W	70	ORPK125A70
				90	ORPK125A90
				100	ORPK125A100
				110	ORPK125A110
				125	ORPK125A125
250	CHKD3250T52W	CHKD3250T56W	CHKD3250T57W	125	ORPK025A125
				150	ORPK025A150
				175	ORPK025A175
				200	ORPK025A200
				225	ORPK025A225
				250	ORPK025A250
400	CHKD3400T52W	CHKD3400T56W	CHKD3400T57W	200	ORPK40A200
				225	ORPK40A225
				250	ORPK40A250
				300	ORPK40A300
				350	ORPK40A350
				400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Zone interlocking, PowerNet, or both features can be added at the factory by adding suffixes **ZG**, **PN** or **ZGP** respectively to above catalog number.

100% Rated Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug

Order as individual components: breaker frame (which includes trip unit), rating plug, terminals.

100% Rated Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only		Digitrip OPTIM Rating Plug Only	
	LSIG Catalog Number	LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole Standard Interrupting Capacity 600 Vac Rated 35 kAIC at 480 Vac				
125	CKD3125T106W	CKD3125T107W	70	ORPK125A70
			90	ORPK125A90
			100	ORPK125A100
			110	ORPK125A110
			125	ORPK125A125
250	CKD3250T106W	CKD3250T107W	125	ORPK025A125
			150	ORPK025A150
			175	ORPK025A175
			200	ORPK025A200
			225	ORPK025A225
			250	ORPK025A250
400	CKD3400T106W	CKD3400T107W	200	ORPK40A200
			225	ORPK40A225
			250	ORPK40A250
			300	ORPK40A300
			350	ORPK40A350
			400	ORPK40A400

Notes

① Long delay I⁴t response selection limits short delay time to flat response.

② Factory sealed.

100% Rated Digitrip OPTIM 1050 Electronic Circuit Breakers with Interchangeable Rating Plug, continued

Maximum Continuous Ampere Rating at 40 °C	Circuit Breaker Frame Only		Digitrip OPTIM Rating Plug Only	
	L – Adjustable Long Delay Pickup (I_L) with Adjustable Long Delay Time (I^2t or I^4t Response) ① S – Adjustable Short Delay Pickup with Adjustable Short Delay Time (I^2t or Flat Response) I – Adjustable Instantaneous Pickup G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Time (I^2t or Flat Response) A – Adjustable Ground Fault Alarm with Adjustable Ground Fault Time (I^2t or Flat Response) OPTIM 1050 ②		LSIG Catalog Number	
		LSIA Catalog Number	Ampere Rating	Fixed Rating Plug Catalog Number
Three-Pole High Interrupting Capacity 600 Vac Rated 65 kAIC at 480 Vac				
125	CHKD3125T106W	CHKD3125T107W	70	ORPK125A70
			90	ORPK125A90
			100	ORPK125A100
			110	ORPK125A110
			125	ORPK125A125
250	CHKD3250T106W	CHKD3250T107W	125	ORPK025A125
			150	ORPK025A150
			175	ORPK025A175
			200	ORPK025A200
			225	ORPK025A225
400	CHKD3400T106W	CHKD3400T107W	250	ORPK025A250
			200	ORPK40A200
			225	ORPK40A225
			250	ORPK40A250
			300	ORPK40A300
			350	ORPK40A350
			400	ORPK40A400

Notes

- ① Long delay I^4t response selection limits short delay time to flat response.
 ② Factory sealed.

Accessories Selection Guide and Ordering Guide

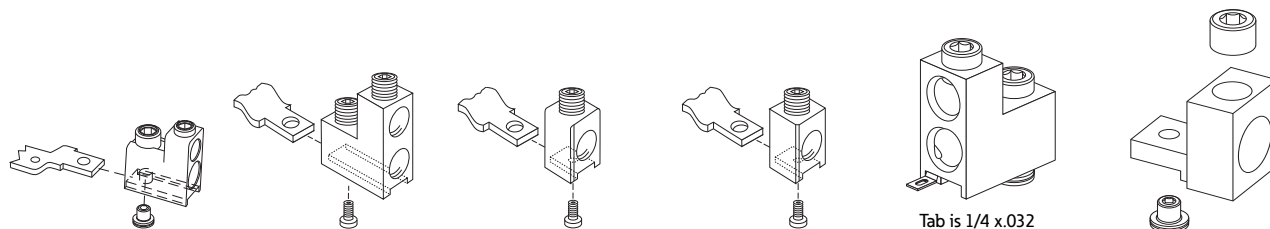
Line and Load Terminals

Eaton's line and load terminals provide wire connecting capabilities for specific ranges of continuous current ratings and wire types. All terminals comply with Underwriters Laboratories Standards

UL 486A and UL 486B and CSA Standard C22.2 No. 65, or Electrical Bulletin 1165. Unless otherwise specified, K-Frame circuit breaker line and load terminals are shipped separately for field installation.

Ordering Information

K-Frame circuit breakers use Cu/Al terminals as standard. When optional copper or Cu/Al terminals are required, order by catalog number. Specify if factory installation is required.



TA401K

TA400K, T400K

TA350K, T350K

TA300K, T300K

Tab is 1/4 x .032

T400KCW, TA400KCW,
TA401KCW

TA402K, T402K

Line and Load Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	AWG Wire Range/No. Conductors	Metric Wire Range mm ²	Terminal Catalog Number	Terminals with Control Wire Termination Catalog Number
Standard Cu/Al Pressure Terminals						
225	Aluminum	Cu/Al	3–350 (1)	35–185	TA300K ^①	—
400	Aluminum	Cu/Al	250–500 (1)	120–240	TA350K ^①	—
400	Aluminum	Cu/Al	3/0–250 (2)	95–120	2TA400K ^{②③}	2TA400KCW ^{②③}
400	Aluminum	Cu/Al	3/0–250 (2)	95–120	3TA400K ^{②④}	3TA400KCW ^{②④}
400	Aluminum	Cu/Al	3/0–250 (2)	95–120	4TA400K ^{⑤⑥}	4TA400KCW ^{⑤⑥}
Optional Copper and Cu/Al Pressure Type Terminals						
225	Copper	Cu	3–350 (1)	35–185	T300K ^①	—
400	Copper	Cu	250–500 (1)	120–240	T350K ^①	—
400	Copper	Cu	3/0–250 (2)	95–120	2T400K ^③	2T400KCW ^{②③}
					3T400K ^④	3T400KCW ^{②④}
					4T400K ^⑤	4T400KCW ^{⑤⑥}
400	Aluminum	Cu/Al	2/0–250 (2) or 2/0–500 (1)	70–120	2TA401K ^{②③}	2TA401KCW ^{②③}
				70–240	3TA401K ^{②④}	3TA401KCW ^{②④}
				70–240	4TA401K ^{⑤⑥}	4TA401KCW ^{⑤⑥}
400	Aluminum	Cu/Al	500–750 (1)	300–400	2TA402K ^{②③}	—
					3TA402K ^{②④}	—
					4TA402K ^{⑤⑥}	—
400	Copper	Cu	500–750 (1)	—	2T402K ^{②③}	—
					3T402K ^{②④}	—
					4T402K ^{⑤⑥}	—

Notes

- ① Individually packed.
- ② Terminal kits contain one terminal for each pole and one terminal cover.
- ③ Two-pole kit.
- ④ Three-pole kit.
- ⑤ Four-pole kit.
- ⑥ Terminal kits contain one terminal for each pole and three interphase barriers.

Accessories

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

KD Frame Accessories

Description	Reference Page	Two-Pole ①		Three-Pole			Four-Pole			
		Left	Right	Left	Center	Right	Left	Center	Right	Neutral
Internal Accessories (Only One Internal Accessory Per Pole)										
Alarm lockout (Make/Break)	V4-T2-414	—	■	□	—	□	■	—	—	—
Alarm lockout (2Make/2Break)	V4-T2-414	—	—	□	—	□	■	—	—	—
Auxiliary switch (1A, 1B)	V4-T2-416	—	■	■	—	■	■	—	■	—
Auxiliary switch (2A, 2B)	V4-T2-416	—	—	■	—	■	■	—	■	—
Auxiliary switch (3A, 3B)	V4-T2-416	—	—	■	—	■	■	—	■	—
Auxiliary switch and alarm switch combination	V4-T2-417	—	—	□	—	□	□	—	□	—
Shunt trip—standard ②	V4-T2-420	—	■	■	—	■	■	—	■	—
Shunt trip—low energy ②	V4-T2-423	—	—	■	—	■	■	—	—	—
Undervoltage release mechanism ②	V4-T2-428	—	■	■	—	■	■	—	—	—
PowerNet or zone interlock kit (OPTIM 550)	V4-T2-431	—	—	—	—	■	—	—	—	—
External Accessories										
End cap kit	V4-T2-448	●	●	●	●	●	●	●	●	●
Keeper nut	V4-T2-448	●	●	●	●	●	●	●	●	●
Control wire terminal kit	V4-T2-449	●	●	●	●	●	●	●	●	●
Terminal adapter	V4-T2-449	●	●	●	●	●	●	●	●	●
Multiwire connectors	V4-T2-450	●	●	●	●	●	●	●	●	●
Rear fed terminals	V4-T2-450	●	●	●	●	●	●	●	●	●
Base mounting hardware	V4-T2-451	●	●	●	●	●	●	●	●	●
Terminal shields	V4-T2-453	●	●	●	●	●	●	●	●	●
Interphase barriers	V4-T2-453	●	●	●	●	●	●	●	●	●
Non-padlockable handle block	V4-T2-454	■	—	—	■	—	—	■	—	—
Padlockable handle block	V4-T2-454	—	—	—	■	—	—	—	—	—
Padlockable handle lock hasp	V4-T2-455	—	■	□	—	□	□	—	□	—
Cylinder lock	V4-T2-455	□	□	□	—	□	—	—	—	—
Key Interlock kit	V4-T2-456	■	□	□	—	□	□	—	□	—
Sliding bar interlock—requires two breakers	V4-T2-457	—	—	●	●	●	—	—	—	—
Walking beam interlock—requires two breakers	V4-T2-457	—	—	●	●	●	●	●	●	●
Electrical (solenoid) operator	V4-T2-458	—	—	●	●	●	●	●	●	●
Plug-in adapters	V4-T2-459	●	●	●	●	●	●	●	●	●
Rear connecting studs	V4-T2-461	●	●	●	●	●	●	●	●	●
Panelboard connecting straps	V4-T2-462	●	●	●	●	●	●	●	●	●
Handle mechanisms	V4-T2-539	●	●	●	●	●	●	●	●	●
Handle extension	V4-T2-551	●	●	●	●	●	●	●	●	●
IQ Energy Sentinel	V4-T2-464	—	—	●	●	●	●	●	●	●
Solid-state (electronic) portable test kit	V4-T2-464	●	●	●	●	●	●	●	●	●
OPTIM System Components Three Poles										
Breaker interface module (BIM)	V4-T2-464	—	—	—	—	—	—	—	—	—
Digitrip OPTIMizer	V4-T2-465	—	—	—	—	—	—	—	—	—
Auxiliary power module	V4-T2-465	—	—	—	—	—	—	—	—	—
Modifications (Refer to Eaton)										
Special calibration	—	●	●	●	●	●	●	●	●	●
Moisture fungus treatment	V4-T2-254	●	●	●	●	●	●	●	●	●
Freeze-tested circuit breakers	—	●	●	●	●	●	●	●	●	●
Marine/naval application	—	●	●	●	●	●	●	●	●	●

Legend

- Applicable in indicated pole position
- May be mounted on left or right pole—not both
- Accessory available/modification available

Notes

- ① Two-pole breaker supplied in three-pole frame. Current carrying parts omitted from center pole.
- ② Shunt trip and UVR cannot be mounted in right poles on KES or OPTIM trip units. Standard internal accessories cannot be mounted in right pole on any K-Frame OPTIM trip units. Special OPTIM ground fault and zone interlock accessories are available for field installation in the right pole of K-Frame 550 OPTIM trip units. Factory installed 2a/2b and bell/aux are available for factory installation. K-Frame breakers equipped with OPTIM 1050 trip units include aux-bell alarm in the right pole.

310+ Electronic Trip Unit Accessories

Description	Catalog Number
Electronic portable test kit	MTST230V ^①
Trip unit tamper protection wire seal	5108A03H01
External neutral sensor, 400 A	LGFACT400 ^②
External neutral sensor, 250 A	LGFACT250 ^②
External neutral sensor, 125 A	LGFACT125 ^②
Breaker-mount cause-of-trip indication	TRIP-LED
Breaker-mount ammeter module	DIGIVIEW
Remote-mount ammeter module	DIGIVIEWR06 ^③

Technical Data and Specifications**NEMA/UL 489/CSA Interrupting Capacity Ratings**

Circuit Breaker Type	Number of Poles ^④	Interrupting Capacity (kA Symmetrical Amperes)				Volts DC ^{⑤⑥}
		Volts AC (50/60 Hz)				
		240	277	480	600	
DK	2, 3	65	—	—	—	10
KDB	2, 3, 4	65	—	35	25	10
KD	2, 3, 4	65	—	35	25	10
HKD, HKDB	2, 3, 4	100	—	65	35	22
KDC ^⑦	2, 3, 4	200	—	100	65	22
CKD	3	65	—	35	25	—
CHKD	3	100	—	65	35	—

IEC 157-1 (P1) Interrupting Capacity Ratings

Circuit Breaker Type	Number of Poles ^④	Interrupting Capacity (kA Symmetrical Amperes)						Volts DC ^{⑤⑥}
		Volts AC (50/60 Hz)						
		240	380	415	440	500	600	
DK	2, 3	65	—	—	—	—	—	10
KDB	2, 3, 4	65	40	40	—	—	—	10
KD	2, 3, 4	65	40	40	—	—	—	10
HKD, HKDB	2, 3, 4	100	65	65	—	—	—	22
KDC	2, 3, 4	200	100	100	—	—	—	22

UL 489 Current Limiting Data

Frame	Circuit	I _p (kA)	I ² T (10 ⁶ A ² S)
KDC	240 V/200 kA	56.00	2.30
KDC	480 V/100 kA	53.30	5.60
KDC	600 V/50 kA	43.40	5.40

Notes

- ① MTST230V applies to 100–230 Vac.
 ② Included with all LD LSG and LSIG trip units and breakers.
 ③ Includes 6 ft cable for remote mounting; NEMA 3R rated.
 ④ Two-pole breaker supplied in three-pole frame. Current carrying parts omitted from center pole.
 ⑤ Two-pole circuit breaker or two outside poles of three-pole circuit breaker.
 ⑥ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 22 kA.
 ⑦ Current limiting.

310+ Specifications

Trip Unit Type	Digitrip RMS 310+
Breaker Type	
Frame	K
Frames available	125 A, 250 A, 400 A
Continuous current range (A)	55–400 A
Ground fault pickup (A)	50–400 A
Interrupting capacities at 480 Vac (kAIC)	35, 65, 100
100% rated	Yes
Protection	
Ordering options	LS, LSI, LSG, LSIG, ALSI, ALSIG
Arcflash Reduction Maintenance System	Remote enabled on ALSI, ALSIG
Interchangeable trip unit	Yes
High load alarm, trip (suffix B20) ①	Yes
Ground fault alarm with trip (suffix B21) ①	LSG, LSIG, ALSIG
Ground fault alarm, no trip (suffix B22)	LSG, LSIG, ALSIG
Zone selective interlock (suffix ZG) ①	LSI, LSIG, ALSI, ALSIG
Cause of trip indication	Yes (via TRIP-LED or DIGIVIEW)
Thru-cover accessories	No

310+ Adjustability Specifications

310+ Settings	K-Frame			
	125 A	250 A	400 A	
I_r = continuous current or long delay pickup (amperes) (All 310+)	$I_r \setminus I_n$			
	A (=I _r)	55	100	160
	B (=I _r)	60	125	200
	C (=I _r)	70	150	225
	D (=I _r)	80	160	250
	E (=I _r)	90	175	300
	F (=I _r)	100	200	315
	G (=I _r)	110	225	350
t_r = long delay time (seconds) (All 310+)	H (=I _r =I _n)	125	250	400
	2	2	2	2
	4	4	4	4
	7	7	7	7
	10	10	10	10
	12	12	12	12
	15	15	15	15
	20	20	20	20
I_{sd} (x I_r) = short delay pickup (amperes) (All 310+)	24	24	24	24
	Position 1	2	2x	2x
	Position 2	3	3x	3x
	Position 3	4	4x	4x
	Position 4	5	5x	5x
	Position 5	6	6x	6x
	Position 6	7	7x	7x
	Position 7	8	8x	8x
t_{sd} = short delay time I ² t (milliseconds) (LS and LSG)	Position 8	10	10x	10x
	Position 9	12	12x	12x
t_{sd} = short delay time flat (milliseconds) (LSI, LSIG, ALSI, ALSIG)	Fixed	67 @10x		
	Position 1	Inst		
	Position 2	120		
I_g (x I_n) = ground fault pickup (amperes) (LSG, LSIG, ALSIG)	Position 3	300		
	Position 1	25	50	80
	Position 2	37.5	75	120
	Position 3	50	100	160
	Position 4	75	150	240
	Position 5	100	200	320
t_g = ground fault delay time (milliseconds) (LSG, LSIG, ALSIG)	Position 6	125	250	400
	Position 1	Inst		
	Position 2	120		
Independently adjustable Instantaneous (Ii) setting	Position 3	300		
	②			
Maintenance Mode pickup (2.5 x I_n) (amperes) (310+ with Maintenance Mode—ALSI and ALSIG)	Fixed	312	625	1000

Notes

① B2x suffixes cannot be combined with B2x suffixes.

② Not available for KD. Independently adjustable I_i setting available in LG, NG and RG ALSI and ALSIG trip units.

Specifications

Trip Unit Type	Digitrip OPTIM 550	Digitrip OPTIM 1050
rms sensing	Yes	Yes
Breaker Type		
Frame	K	K
Ampere range	125–400 A	125–400 A
Interrupting rating at 480 volts	35, 65, 100 (kA)	35, 65, 100 (kA)
Protection		
Ordering options	LSI, LSI(A), LSIG	LSI(A), LSIG
Fixed rated plug (I_n)	Yes	Yes
Overtemperature trip	Yes	Yes
Long Delay Protection (L)		
Adjustable rating plug (I_n)	No	No
Long delay pickup	$0.4-1.0 \times (I_n)$	$0.4-1.0 \times (I_n)$
Long delay time I^2t	2–24 seconds	2–24 seconds
Long delay time I^4t	1–5 seconds	1–5 seconds
Long delay thermal memory	Yes	Yes
High load alarm	$0.5-1.0 \times I_r$	$0.5-1.0 \times I_r$
Short Delay Protection (S)		
Short delay pickup	$150-800\% \times (I_r)$	$150-800\% \times (I_r)$
Short delay time I^2t	100–500 ms	100–500 ms
Short delay time flat	100–500 ms	100–500 ms
Short delay time zone selective interlocking	Yes ^①	Yes
Instantaneous Protection (I)		
Instantaneous pickup	$200-800\% \times (I_n)$	$200-800\% \times (I_n)$
Discriminator	Yes	Yes
Instantaneous override	Yes	Yes
Ground Fault Protection (G)		
Ground fault alarm	$20-100\% \times (I_g)$	$20-100\% \times (I_g)$
Ground fault pickup	$20-100\% \times (I_g)$	$20-100\% \times (I_g)$
Ground fault delay I^2t	100–500 ms	100–500 ms
Ground fault delay flat	100–500 ms	100–500 ms
Ground fault zone selective interlocking	Yes ^①	Yes
Ground fault thermal memory	Yes	Yes
System Diagnostics		
Status LEDs	Yes	Yes
Cause of trip LEDs	Yes	Yes
Magnitude of trip information	Yes	Yes
Remote signal contact—ground alarm	Yes ^①	Yes
Local auxiliary and bell alarm contact	Optional	Included
System Monitoring		
Digital display	Yes ^②	Yes ^②
Current	Yes	Yes
Power and energy	No	Yes
Power quality—harmonics	No	Yes
Power factor	No	Yes
Communications		
PowerNet	Yes ^③	Yes
Testing		
Testing method	OPTIMizer, BIM, PowerNet	OPTIMizer, BIM, PowerNet

Legend

BIM = Breaker Interface Module
 (A) = GF Alarm
 I_g = Sensor Rating
 I_n = Rating Plug
 I_r = Long Delay Pickup Setting

Notes

- ^① Zone interlock kit.
^② By OPTIMizer/BIM.
^③ Eaton's PowerNet kit.

2.4

Molded Case Circuit Breakers

Series C

Dimensions and Weights

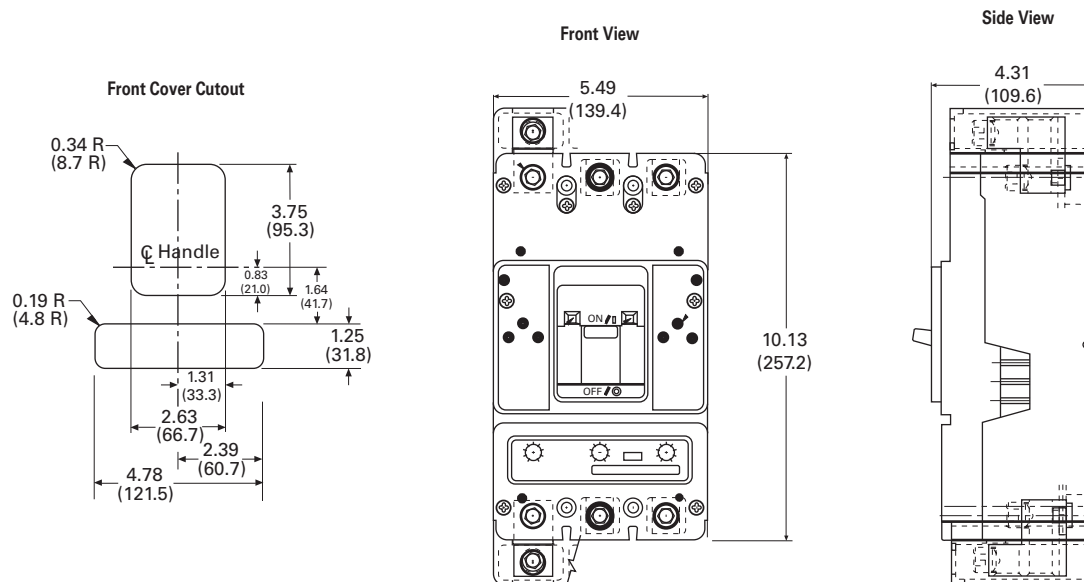
Approximate Dimensions in Inches (mm)

2

KD Frame

Number of Poles	Width	Height	Depth
2, 3	5.50 (149.7)	10.13 (257.3)	4.10 (104.1)
4	7.22 (183.4)	10.13 (257.3)	4.10 (104.1)

KD-Frame, Two- and Three-Pole



Approximate Shipping Weight, Lbs (kg)

KD Frame

Breaker Type	Complete Breaker		Frame Only		Trip Unit ①	
	Two-Pole	Three-Pole	Two-Pole	Three-Pole	Two-Pole	Three-Pole
DK	10.0 (4.5)	11.5 (5.2)	—	—	—	—
KDB	10.0 (4.5)	11.5 (5.2)	—	—	—	—
KD	10.0 (4.5)	11.5 (5.2)	7.5 (3.4)	8.5 (3.9)	1.5 (0.7)	1.5 (0.7)
HKD, HKDB	10.0 (4.5)	11.5 (5.2)	7.5 (3.4)	8.5 (3.9)	1.5 (0.7)	1.5 (0.7)
KDC	10.0 (4.5)	11.5 (5.2)	7.5 (3.4)	8.5 (3.9)	1.5 (0.7)	1.5 (0.7)

Note

① Weights shown are for thermal-magnetic trip units. Three-pole electronic trip units weigh 2.5 lbs (1.1 kg).