

Bimetallic Overload Relays

Product Overview/Product Selection

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Bulletin 193-K — Miniature Bimetallic Overload Relays

- Standard motor protection for AC and DC motors
- Overload protection Trip Class 10A
- Auxiliary switch (1 N.O. and 1 N.C.)
- Phase loss sensitivity
- Manual/Auto reset button
- Test release
- Stop button
- Trip indicator

Bulletin 193-K bimetallic overload relays are designed for use with Bulletin 100-K contactors and Bulletin 104-K reversing contactors. These class 10A ambient temperature-compensated thermal overload relays include a differential mechanism for sensitivity to phase-loss conditions.

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Standards Compliance

IEC/EN 60947-1,-4-1,-5-1
 UL 508
 CSA 22.2. No. 14

Certifications

CE Marked
 cULus Listed (File No. E33916,
 Guide NKCR, NKCR7)

Miniature Bimetallic Overload Relays

Mounts to Contactor	Setting Range [A] *❄	Max. Current Rating of Backup Fuse [A]				Cat. No.
		IEC Coordination		UL 508		
		Type 1	Type 2	UL Class K5/RK5, 600V, 5 kA	UL Class CC, J, 600V, 50 kA	
100-K05...100-K12	0.10...0.16	35	1	1	1	193-KA16
	0.16...0.25	35	1	1	1	193-KA25
	0.25...0.40	35	2	1	1	193-KA40
	0.35...0.50	35	2	2	2	193-KA50
	0.45...0.63	35	2	2	2	193-KA63
	0.55...0.80	35	4	3	3	193-KA80
	0.75...1.0	35	4	3	3	193-KB10
	0.9...1.3	35	6	4	4	193-KB13
	1.1...1.6	35	6	5	5	193-KB16
	1.4...2.0	35	10	8	8	193-KB20
	1.8...2.5	35	20	10	10	193-KB25
	2.3...3.2	35	20	12	12	193-KB32
	2.9...4.0	35	20	15	15	193-KB40
	3.5...4.8	35	20	15	15	193-KB48
	4.5...6.3	35	20	20	20	193-KB63
100-K09...100-K12	5.5...7.5	35	20	25	25	193-KB75
	7.2...10.0	35	20	35	30	193-KC10
100-K12	9.0...12.5	35	20	50	30	193-KC12

* To select the setting range for use in Y-Δ Starters, multiply the rated operating current of the motor by a factor of 0.58.

** For motors with Service Factor of 1.15 or greater, use motor nameplate full load current. For motors with service factor of 1.0, use 90% of the motor nameplate full load current.

Accessories

	Description	Cat. No.
	Remote Reset Solenoid For remote reset of 193-K and 193-T1 overload relays	193-T1R®
	Reset Adapter Expands the reset target area when using an external reset	193-RA3
	External Reset Button For enclosed, through-the-door reset applications. Metal construction IP66, non-illuminated with rod (length: 142 mm, adjustable range 141...159 mm). Refer to the 800F catalog pages for additional types.	Reset Button 800FM-R611
		Rod 800F-ATR08

⊗ Coil Voltage Codes for Remote Reset Solenoid

[V]	24	48	110	120	125	220...240
50 Hz	—	—	D	—	—	—
60 Hz	—	—	—	D	—	—
50/60 Hz	KJ	KY	—	—	—	KF
DC	ZJ	ZY	ZD	—	ZS	—



Main Circuits

		193-K
Rated Isolation Voltage U_i		690V
Rated Impulse Strength U_{imp}		6 kV
Rated Operating Voltage U_e	IEC/UL	690V AC / 600V AC
Wiring cross section Terminal type		
Terminal screws		M3.5
 Fine stranded with ferrule	[mm²]	2 x (1.5...4)
 Solid or coarse stranded	[mm²] [AWG]	2 x (1.5...4) 2 x (16...12)
Recommended torque	[N•m] [lb•in]	1.2 10.6
Pozidriv screwdriver	Size	2
Slotted screwdriver	[mm]	1 x 6

General Data

	193-K
Standards	IEC/EN 60947-1, -4-1, -5-1, UL 508, CSA 22.2. No. 14
Certifications	CE, cULus
Approximate Weights (unpackaged)	0.115 kg (0.25 lb)

Control Circuits

		193-K
Rated Isolation Voltage U_i		690V AC
Rated Impulse Strength U_{imp}		4 kV AC
Rated Operating Voltage U_e	IEC/UL	690V AC/600V AC
Rating Designation		A600/Q300
Rated Operating Current I_e		N.O./N.C.
AC-15	24V	[A] 4
	240V	[A] 2
	400V	[A] 1.6
	690V	[A] 0.15
DC-13	24V	[A] 2
	110V	[A] 0.4
	220V	[A] 0.25
	440V	[A] 0.08
Thermal Current I_{the}	[A]	5
Short-circuit withstand, fuse gG	[A]	6
Contact Reliability		15V, 2 mA
Wiring cross section Terminal type		
Terminal screw		M 3.5
 Fine stranded with ferrule	[mm²]	2 x (1...4)
 Solid or coarse stranded	[mm²] [AWG]	2 x (1...4) 2 x (18...12)
Recommended torque	[N•m] [lb•in]	1.2 10.6
Pozidriv screwdriver	Size	2
Slotted screwdriver	[mm]	1 x 6

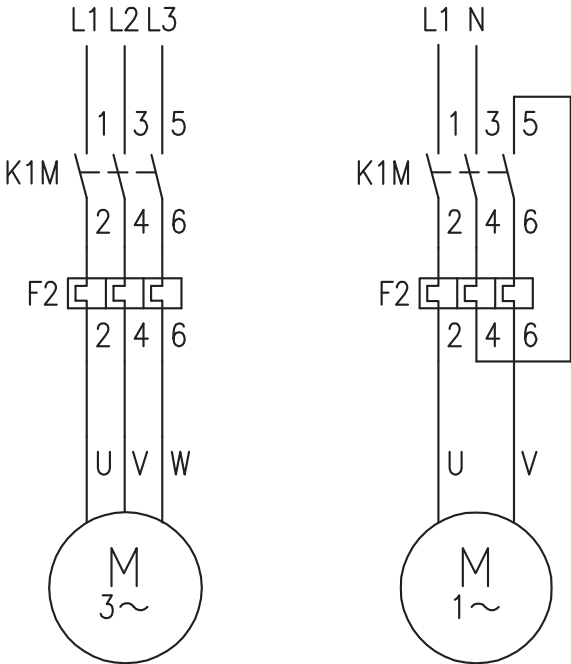
Environmental Ratings

		193-K
Ambient Temperature	Storage Operating	-55...+80 °C (-67...+176 °F) -20...+60 °C (-4...+140 °F)
Humidity	Operating Damp Heat	5...95% Non-condensing per IEC/EN 60068-2-3 and IEC/EN 60068-2-30
Vibration (per IEC/EN 60068-2-6)		3 G
Shock (per IEC/EN 60068-2-27)		30 G
Max. Altitude		2000 m
Pollution Environment		Pollution Degree 3
Degree of Protection		IP2X
Protection		
Type of Relay		Ambient compensated, time delay, phase loss sensitive
Nature of Relay		Bimetallic overload relay
Trip Rating		120% FLA
Trip Class		IEC: 10A, UL 10
Reset Mode		Automatic or manual
Power dissipation	up to 0.4 A	7 W
	0.5...12.5 A	6 W

General Data

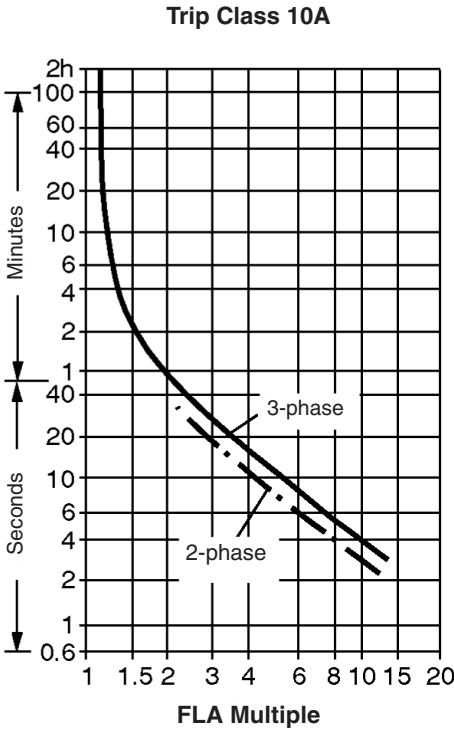
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Thermal Overload Relays
Circuit Diagrams



Trip Characteristics

These trip characteristics refer to IEC 60947 and are average values from cold start at an ambient temperature of 20 °C. Trip time is pictured as a function of operating current. With the device at normal operating temperature, the trip time decreases to approximately 25% of the shown value.



Bulletin 100-K, 193-K Approximate Dimensions

Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.

