Bulletin 817

- **Accurate Temperature Monitoring for Critical Applications**
- **Automatic, Manual and Remote Reset**
- **Status Indicating LEDs**
- **DIN Rail or Panel Mounting**
- **Guarded Terminals IP20**
- **1 N.O. and 1 N.C. Output Contacts as Standard**
- **No Set-Up or Adjustments Required for Installation**

TABLE OF CONTENTS

Description

Bulletin 817 Thermistor Protection relays, used in conjunction with PTC thermistor sensors, provide accurate temperature monitoring in critical applications and severe environments such as widely varying temperatures and impeded ventilation and cooling.

Conformity to Standards:

IEC 255-8, IEC 292-1
IEC 255-4, IEC 69
SEV, SEN 36 1503
CSA C22.2 No. 14
UL 508

Approvals:

SEV
NEMKO
PTB
FI
CSA Certified
UL Recognized

Your order must include:

- Cat. No. of the relay selected with Voltage Suffix Code.

Bulletin 817 Thermistor Protection Relay

Accurate Temperature Monitoring

Direct temperature sensing at critical locations with thermistor sensors and evaluation by the Bulletin 817 Thermistor Protection Relay offer excellent protection for squirrel-cage motors and other temperature-critical objects.

The Right Device for Every Application

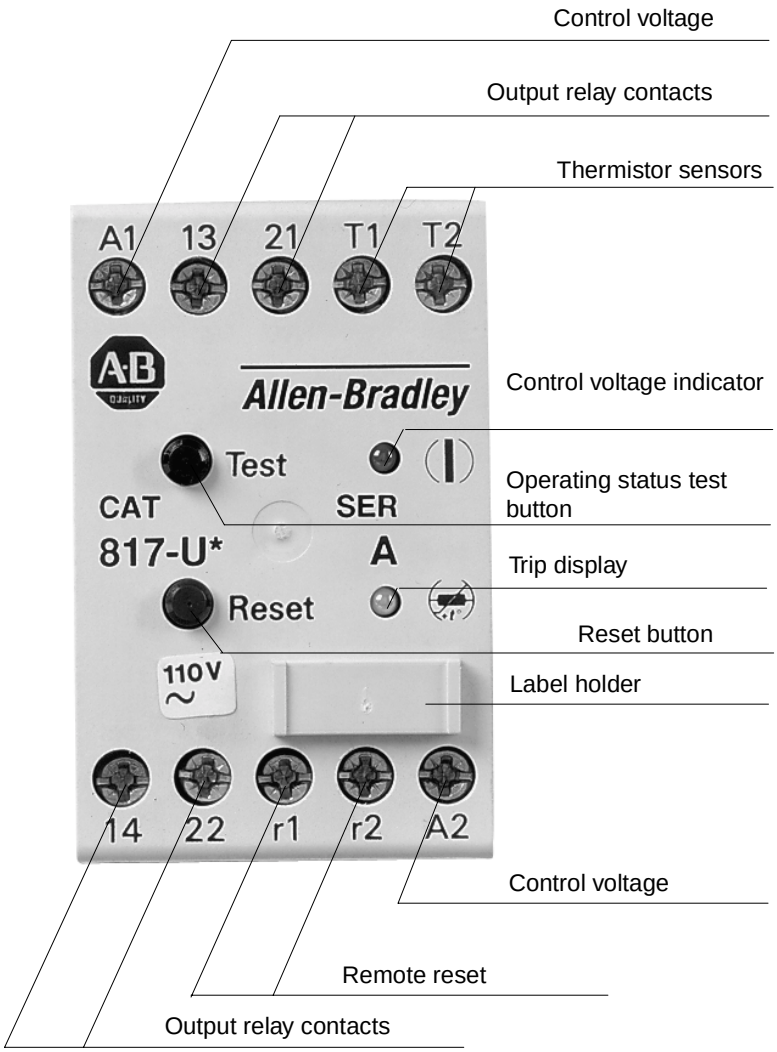
Bulletin 817 Thermistor Protection Relays are employed in every application where accurate temperature monitoring is of crucial importance:

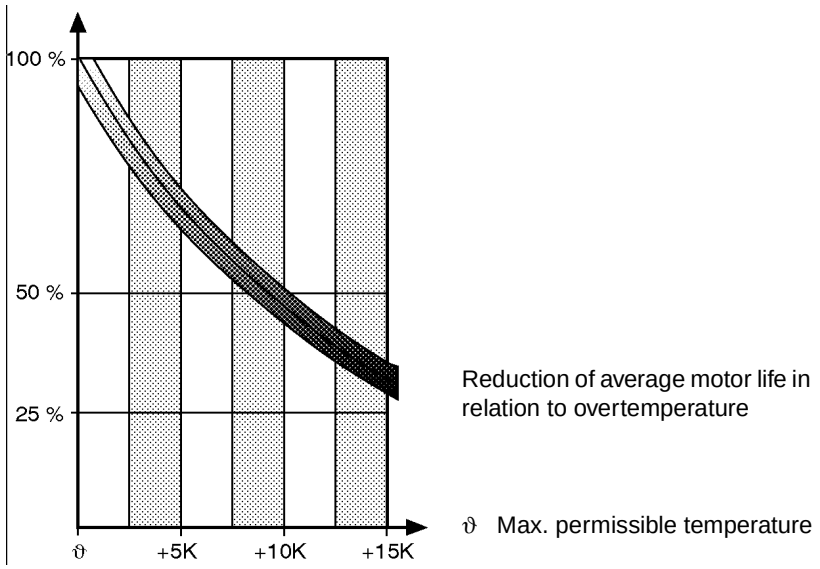
- Motors and transformers
- Bearings and machines
- Heating systems
- Gases and liquids

Bulletin 817 devices fully take into account external influences such as raised ambient temperature, ventilation system failure, and obstructed cooling. Three models with different configurations permit optimal selection for each application.

Temperature Monitoring is not a Luxury

With motors, it is especially important to observe the maximum permissible temperature prescribed by the manufacturer. A continuous exceedance of maximum temperature by only 10° can halve the life span of the motor. This is why thermistor sensors in the windings are standard on most variable-speed drives or high-performance motors. The Bulletin 817 Thermistor Protection Relay responds precisely to an overtemperature signalled by the sensors and acts quickly to prevent motor damage.

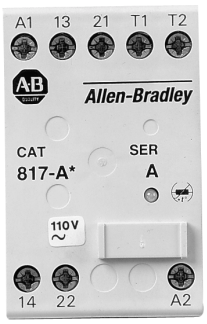




Model	Cat. No. 817-A⊗	Cat. No. 817-M⊗	Cat. No. 817-U⊗
Overtemperature protection	★	★	★
Short-circuit and open-circuit protection for sensor measuring circuit	★	★	★
Trip indication (red LED)	★	★	★
Automatic reset	★	★	★
Manual reset	—	★	★
Remote reset (external button)	—	★	★
Storage of status in event of power failure	—	★	★
For more than 3 hours at +25°C (77°F)	—	★	★
Unlimited (not temperature-dependent)	—	—	★
“Test” button	—	—	★
Power-on indication (green LED)	—	—	★

⊗ = Cat. No. is incomplete. Refer to Product Selection below.
★ = Standard feature

Product Selection



Cat. No. 817-A⊗

Cat. No. 817-M⊗

Cat. No. 817-U⊗

Description	Cat. No.
Thermistor Protection relay	817-A⊗
Thermistor Protection relay plus manual/remote reset	817-M⊗
Thermistor Protection Relay plus manual/remote reset test function and power indication LED	817-U⊗

⊗ Voltage Suffix Code

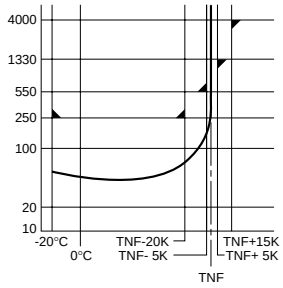
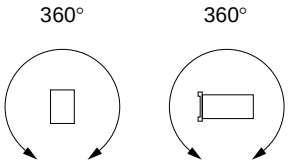
Cat. no. as listed is incomplete. Select a Voltage Suffix Code from the table below to complete the cat. no. Example: **Cat. No. 817-A⊗** for 24V, 50 Hz becomes **Cat. No. 817-AKD**.

Voltage	24V	110V	120V	220V	240V
50 Hz	KD	D	KP	A	AJ
60 Hz	KD	D	KP	A	AJ
DC	Z24	—	—	—	—

Specifications — Page 5-8
Approximate Dimensions — Page 5-10

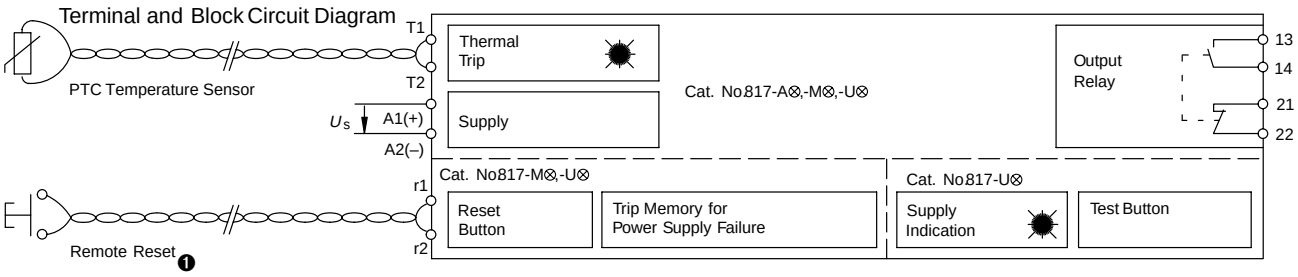
Electrical							
Rated Voltage	According to IEC 255-8	440V			According to AS, BS, VDE 0660	250V	
	According to SEV	380V			According to CSA, UL ❶	240V	
Test Voltage Between separated circuits	Alternating current according to IEC 292-1				2.5 kV, 50/60 Hz, 1 min.		
	Surge voltage according to IEC 255-4 and SEN 36 1503				5 kV, 1.2/50 µs		
	Interference voltage according to ANSI ❷ C 37.90 a-1974, IEC 255-6, and SEN 36 1503				2.5 kV, 1 MHz, 2 s		
Supply	Rated supply voltage U_S		AC		110, 120, 220, 240V 50/60 Hz		
			AC		Special U_S 24V 50/60 Hz		
			DC		24V		
	Permissible Fluctuations		AC		0.8…1.1 U_S 50/60 Hz		
			DC		0.9…1.2 U_S		
	Power consumption		AC		2.5VA (2.2W) DC 2.2W		
Output Relay Contact Data	Contacts (electrically isolated)				1 make and 1 break		
Operating voltage ❸		[V]	24		110/120	220/240	
Continuous thermal current		[A]	4		4	4	
Rated operational current with AC	AC-15	[A]	3		3	3	
Rated operational current with DC without protection circuit, L/R = 300 ms	DC-13	[A]	2		0.3	0.02	
Max. perm. switching current (cos φ = 0.3)	AC-15	[A]	30		30	30	
Rated current of back-up fuse:	Max. fast-acting 16A; slow-blow 10A						
Mechanical							
Vibration Resistance	According to IEC 68 (10…150 Hz)				3 G		
Impact Resistance	According to IEC 68-2-27 or DIN 40 046/7				30 G, shock duration 18 ms, semi-sinusoidal in the 3 directions x, y, and z		
Measuring Line	mm²	0.5	0.75	1		1.5	2.5
Minimum cross-section	AWG	20	18	16		14	14
Maximum length ❹	m	200	300	400		600	1000
	(ft)	(656.2)	(984.25)	(1312.3)		(1968.5)	(3208.8)
Reset	Cat. No. 817-A⊗	Automatic					
	Cat. No. 817-M⊗	Manual or automatic ❺					
	Cat. No. 817-U⊗	Manual or automatic ❺					
Remote Reset with **Cat. No. 817-M⊗, 817-U⊗**	External contact at r1-r2				Potential-free make contact		
	Max. line length for remote reset				Up to 300 m (984.25 ft) shielded		
					Up to 1000 m (3280.8 ft) shielded		

❶ Rated insulation voltage: 300V.
❷ American National Standards Institute.
❸ According to CSA, UL: pilot duty 240V (B 300).
❹ Bulletin 817 to motor; installation: up to 200m not shielded.
❺ For automatic reset: connect r1-r2.

Environmental			
	Max. cold resistance of PTC sensor chain		1500 Ω
	Max. number of series connected PTC sensors according to IEC 34-11-2		6
	Response level ϑ A = –25…+60°C (13°F…140°F)		3300 Ω ± 300 Ω
	Reset level ϑ A = –25…+60°C (13°F…140°F)		1800 Ω ± 300 Ω
	Response level with short circuit in sensor circuit ϑ A = –25…+60°C (13°F…140°F)		≤ 15 Ω
	Measuring voltage according to IEC 34-11-2		DC < 2.5V
	Ambient Temperature	Normal operation	–25…+60°C (–13…140°F)
		Storage (in dry rooms)	–40…+60°C (–40…140°F)
	Climatic Classification	According to IEC 68-2-3 humid heat	40°C (104°F), 92% rel. humidity, 56 days
	PTC sensor characteristic According to IEC-34-11-2		TNF: Rated response temperature
Trip memory In event of power supply failure (zero-voltage safe-guard)	**Storage Time**	Cat. No. 817-M⊗	At 25°C (77°F) > 3 h
			At 40°C (104°F) > 1 h
			At 60°C (140°F) > 15 min.
		Cat. No. 817-U⊗	Unlimited (not temperature-dependent)
Construction			
Terminals	Open Terminals		Captive
	Connection wire cross-sections		2 x 2.5 mm² (0.0039 in²) single wire or 2 x 1.5 mm² (0.0023 in²) with end ferrule
Protection class according to IEC 529	Device (less terminals) IP30		Terminals (according to VBG 4) IP20
Installation	Bulletin 817 Thermistor Protection relay is designed for surface mounting with screw fixing according to hole plan EN 50 002 or for snap-on fixing to a top hat rail EN 50 022'-35 x 7.5. Arrangement, assignment and marking of terminals in accordance with EN 50 005. The mounting position of the Bulletin 817 does not influence its function.		

Typical Wiring Diagram

Terminal and Block Circuit Diagram of Bulletin 817



❶ For automatic reset available in Cat. No. 817-M⊗ and Cat. No. 817-U⊗, connect r1-r2.

Application Example

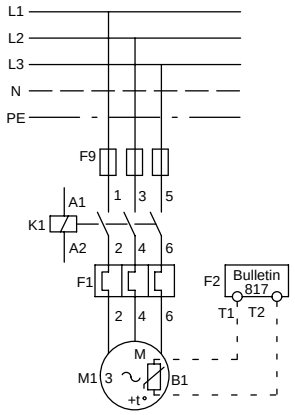
Starter (Bulletin 100 and Bulletin 193) with additional Bulletin 817.

Legend

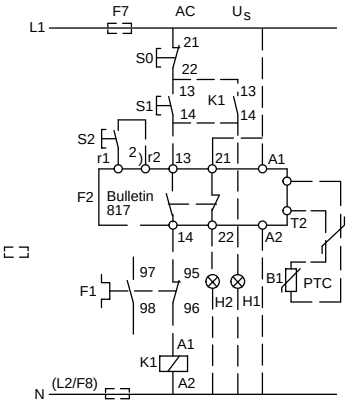
K1	Bulletin 100 contactor
F1	Bulletin 193 thermal overload relay
F2	Bulletin 817 Thermistor Protection relay
S1	ON button
S0	OFF button
S2	Remote button reset
U_S	Supply voltage
H1	Signal Lamp — Contactor ON
H2	Signal Lamp — Bulletin 817 tripped
B1	Thermistor in protected object

The contacts 13…14 and 21…22 of the output relay are drawn in their power-off position A1…A2.

Circuit Diagram
Main Circuit



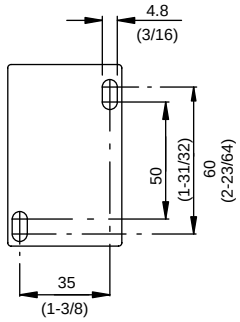
Control Circuit
Impulse Contact Control



Approximate Dimensions

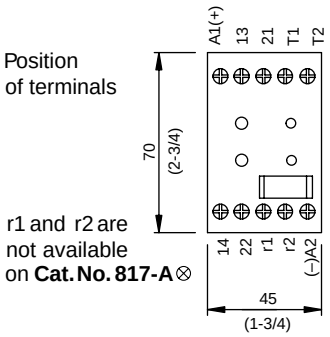
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

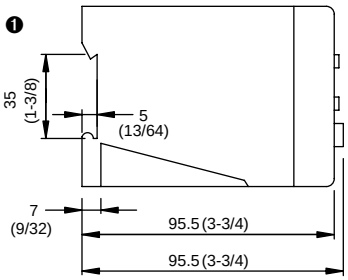
Hole plan



Position of terminals

r1 and r2 are not available on **Cat. No. 817-A** ⊗





❶ For Top Hat Rail 35 mm to EN 50 022, Cat. No. 199-DR1.