Product Details and Certifications

Cross Reference RA Part Number: 193-T1DC47P A

Product: 193-T1DC47P

Description: T1 MCS Overload Relay, IEC, Bimetallic, 35.0-47.0A

Representative Photo Only (actual product may vary based on configuration sections)

OVERLOAD DATA

Bulletin Number	193-IEC Overload Relay Accessories
Overload Relay Type	Bimetallic
Full Load Current Range (A)	35.0-47.0A

CONTACTOR DATA

Phases	3 Phase
Separate Mounting	Yes

CERTIFICATIONS AND APPROVALS

UL
IEC
CSA
CE
For UL Certifications Directory: http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm

Overload Relays

						
Bulletin	**193-ED**	**193-EE**	**193-EC1**	**193-EC2/EC3**	**193-EC5**	**193-EC4**
Type	E1 Plus Electronic Overload Relay	E1 Plus Electronic Overload Relay	E3 Electronic Overload Relay	E3 Plus Electronic Overload Relay		E3 Plus Current Monitoring Relay
Rated Current (Range)	0.1…45 A	0.1…800 A	0.4…5000 A			
NEMA Operating Voltage, Nominal	—	600V	600V			
IEC Operating Voltage, Nominal	690V	690/1000V	690/1000V			
Overload Type	Electronic Overload	Electronic Overload	Microprocessor-Based			
Trip Class (Fixed)	10	—	—			
Trip Class (Adjustable)	—	10, 15, 20, 30	5…30			—
Ambient Temperature Compensated	✓	✓	✓			—
Reset Type	Manual Only	Automatic and Manual	Automatic and Manual			
Adjustment Range	5:1	5:1	5:1			
Phase Loss	3 s	3 s	Adjustable Delay			—
Ground (Earth) Fault	—	Optional	—	Sensitive	Sensitive	Sensitive
Overcurrent (Jam) Detection	—	Optional	✓	✓	✓	—
Stall Detection	—	—	✓	✓	✓	—
Underload Detection	—	—	✓	✓	✓	—
Current Imbalance	—	—	✓	✓	✓	—
PTC Thermistor Monitoring	—	Optional	—	✓	—	—
Warning Settings	—	—	✓	✓	✓	✓
N.C. Trip Contact	✓	✓	✓	✓	✓	✓
N.O. Alarm Contact	✓	✓	—	—	—	—
No. of Outputs	—	—	1	2	2	2
No. of Inputs	—	—	2	4	6	4
ODVA (DeviceNet) Conformance	—	Optional	✓	✓	✓	✓
Variable Frequency Drive (VFD) Compatible	—	—	✓	✓	✓	✓
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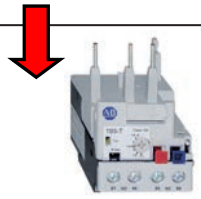
Overload Relays & Modular Protection System

			
Bulletin	**193-K**	**193-T1**	**825-P**
Type	Bimetallic Overload Relay		Modular Protection System
Rated Current (Range)	0.1…12.5 A	0.1…90 A	0.5…5000 A
Operating Voltage, Nominal	600V		120…240V AC/DC, 24…48V DC
Overload Type	Bimetallic		Microprocessor based
Trip Class (Fixed)	10	10	—
Ambient Temperature Compensated	✓	✓	✓
Reset Type	Automatic and Manual	Automatic and Manual	Automatic and Manual
Adjustment Range	1.5:1	1.5:1	—
Phase Loss	Normal Sensing	Normal Sensing	Adjustable delay
N.C. Trip Contact	✓	✓	✓
N.O. Alarm Contact	✓	✓	✓
Variable Frequency Drive (VFD) Compatible	✓	✓	✓
Product Selection	**Page 2-246**	**Page 2-249**	**Page 2-260**

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Thermal Overload Relays

For Use With∗	Setting Range [A]❄‡	Max. Back-up fuse [A] gL/gG 50 kA, 690V AC IEC/EN 60947-4-1 Coordination Type 1	Max. Back-up fuse [A] gL/gG 50 kA, 690V AC IEC/EN 60947-4-1 Coordination Type 2	Max. Back-up fuse [A] UL Class K5 5 kA, 600V AC UL 508	Cat. No.
100-C09…100-C23	0.1…0.16	50	—	1	193-T1AA16
	0.16…0.25	50	—	1	193-T1AA25
	0.25…0.40	50	2	1	193-T1AA40
	0.35…0.50	50	2	2	193-T1AA50
	0.45…0.63	50	2	2	193-T1AA63
	0.55…0.80	50	4	3	**193-T1AA80**
	0.75…1.0	50	4	3	193-T1AB10
	0.90…1.3	50	6	4	**193-T1AB13**
	1.1…1.6	50	6	5	**193-T1AB16**
	1.4…2.0	50	10	8	**193-T1AB20**
	1.8…2.5	50	16	10	**193-T1AB25**
	2.3…3.2	50	16	12	**193-T1AB32**
	2.9…4.0	50	16	15	**193-T1AB40**
	3.5…4.8	50	16	15	**193-T1AB48**
	4.5…6.3	50	20	20	**193-T1AB63**
	5.5…7.5	50	25	25	**193-T1AB75**
	7.2…10	50	25	35	**193-T1AC10**
	9.0…12.5	50	35	50	**193-T1AC12**
100-C12…100-C23	11.3…16	50	35	60	**193-T1AC16**
100-C16…100-C23	15…20	80	40	80	**193-T1AC20**
	17.5…21.5	80	50	80	**193-T1AC21**
100-C23	21…25	80	50	100	**193-T1AC25**
100-C30…100-C37	15…20	80	40	80	**193-T1BC20**
	17.5…21.5	80	50	80	**193-T1BC21**
	21…25	80	50	100	**193-T1BC25**
	24.5…30	100	63	100	**193-T1BC30**
	29…36	125	63	125	**193-T1BC36**
100-C37	33…38	125	63	150	**193-T1BC38**
100-C43	17…25	100	50	100	**193-T1CC25**
	24.5…36	125	80	125	193-T1CC36
	35…47	160	100	175	**193-T1CC47**
100-C60…100-C97	35…47	160	100	175	**193-T1DC47**
	45…60	200	125	250§	**193-T1DC60**
100-C72…100-C97	58…75	200	125	300§	**193-T1DC75**
100-C85…100-C97	72…90	250	160	350§	**193-T1DC90**
Separate mounting required (Panel-mounted device)	35…47	160	100	175	193-T1DC47P
	45…60	200	125	250§	**193-T1DC60P**
	58…75	200	125	300§	193-T1DC75P
	72…90	250	160	350§	193-T1DC90P

∗ Bulletin 193-T1 overload relays shall not be used with 100-C09…100-C43 conventional DC coil-controlled contactors. Use electronic controlled DC coil versions.

❄ 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.

§ Max. Back-up fuse [A], UL Class K5, 10 kA, 600V AC

Marking System

Uniform labeling materials for contactors, motor starting equipment, timing relays, and circuit breakers

	Description	Pkg. Quantity*	Cat. No.
	**Label Sheet** 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS
	**Marking Tag Sheet** 160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover	10	100-FMP
	Transparent Cover To be used with marking tag sheets	100	100-FMC

* Must be ordered in multiples of package quantities.

Thermal Overload Relays

Main Circuits

Cat. No.			193-T1...
Rated isolation voltage U_i			690V AC
Rated impulse withstand voltage U_{imp} (between main poles and between main poles and auxiliary circuits)			6kV AC
Rated impulse withstand voltage U_{imp} (between auxiliary circuits)			4kV AC
Rated operating voltage U_e		IEC	690V AC
			440V DC
		UL, CSA	600V AC
Rated frequencies		[Hz]	50/60
Operational frequencies			DC...400 Hz
Power dissipation	193-T1A, 193-T1B	up to 0.4 A	7 W
		0.5...36 A	6 W
		38 A	12 W
	193-T1C	25...47 A	12 W
	193-T1D	47...90 A	18 W

Control Circuits

Cat. No.			193-T1...
Rated operating current I_e			
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_{th}			5
Short-circuit withstand, Fuse	IEC, gL/gG	[A]	6
Short-circuit withstand, circuit breaker ≤ 1 kA prospective short-circuit-current		[A]	4
Min. contact load for reliable operation			15V, 2 mA
UL Rating			A600/Q300

Terminations

Cat. Nos.			Main Circuits						Control Circuits	Remote Reset
			193-T1A...	193-T1BC20... T1BC25	193-T1BC30... T1BC38	193-T1C...	193-T1D...	193-T1APM	193-T1... all	193-T1R...
Wiring cross section Terminal type										
Terminal screws			M4	M4	M4	M5	M6	M4	M3.5	M3.5
	Fine stranded with ferrule	1 conductor [mm²] 2 conductors [mm²]	1.5...4 1.5...4	1.5...4 1.5...4	2.5...10 -	2.5...16 -	10...35 -	1.5...10 -	1...4 1...4	1...2.5 -
	Solid or coarse stranded	1 conductor [mm²] 2 conductors [mm²]	1.5...6 1.5...6	1.5...6 1.5...6	2.5...16 -	2.5...25 -	10...35 -	1.5...16 -	1...4 1...4	1...2.5 -
		1 conductor [AWG] 2 conductors [AWG]	No. 16...10 No. 16...10	No. 14...10 No. 14...10	No. 10...6 -	No. 10...6 -	No. 8...1 -	No. 16...6 -	No. 18...12 No. 18...12	No. 16...12 -
Recommended torque		[N•m]	1.5 ... 2.2	1.5 ... 2.2	2.5 ... 3.5	2.5 ... 3.5	4.5 ... 6	1.8...2.8	1.2	1.2
		[lb•in]	13 ... 20	13 ... 20	22 ... 31	22 ... 31	40 ... 53	16...25	10.6	10.6
Pozidrive screwdriver No.		Size	2	2	2	2	-	2	2	2
Slotted screwdriver		[mm]	0.8 x 5.5	0.8 x 5.5	0.8 x 5.5	0.8 x 5.5	-	0.8 x 5.5	0.8 x 5.5	0.8 x 5.5
Hexagon socket screw		Size	-	-	-	-	4	-	-	-

Specifications

193-T1R Remote Reset

Operating Limits		
Maximum Command Impulse		5s
AC 50/60 Hz	Pick-up [x U_s]	0.8....1.1
	Drop-out [x U_s]	
DC	Pick-up [x U_s]	0.7....1.25
	Drop-out [x U_s]	
Coil Consumtion		
AC 50/60 Hz	Pick-up [VA/W]	
	Hold-in [VA/W]	
DC	Pick-up [W]	17 (24, 110, 125V) 25 (48V)
	Hold-in [W]	17 (24, 110, 125V) 25 (48V)

General

Cat. No.			193-T1...	
Type of Overload Relay			Bimetallic, Ambient Compensated, Phase Loss Sensitive	
Trip Rating (ultimate tripping current)			120% FLA	
Phase loss sensitivity: Trip rating at phase loss			115% FLA	
Trip Class			193-T1A/-T1B	193-T1C/-T1D
		IEC/EN 60947-4-1	10A	10
		UL	10	
Reset Mode			Automatic or Manual	
Test release			Manual release of auxiliary contacts	
Trip indication			By means of a flag visible through an opening in the relay front	
Compensation temperature range			-20...+60 °C (-4...+140 °F)	
Climatic Conditions	Release Tolerance at -20 °C		1.05...1.4 x I_n	
	Storage Temperature Range		-55...+80 °C (-67...+176 °F)	
	Operating Temperature Range		-20...+60 °C (-4...+140 °F)	
	Air moisture (Storage/Operating)		5...95% rel.humidity, non-condensing	
Vibration	(per IEC/EN 60068-2-6), service		3g	
	IEC/EN 61373 (vibration railways)		category 1, class B	
	IEC/EN 60092-504 (vibration ships), service		0.7 g, all axes, 2...200 Hz	
Shock	(per IEC/EN 68000-2-27), transport		30 g	
	IEC/EN 60068-2-27 (Shock half-sinus), service		11 ms > 5 g all axes	
	IEC/EN 61373 (shock railways)		category 1, class B, 5g 30 ms	
Max. Altitude			2000 m	
Pollution Degree			3	
Degree of Protection, with wires connected			IP2X	
Approximate Weight (unpackaged)	193-T1A, 193-T1B	0.16...25 A	0.115 kg	
	193-T1B	30...38 A	0.155 kg	
	193-T1C	25...47 A	0.330 kg	
	193-T1D	47...90 A	0.360 kg	
	193-T1....P	47...90 A	0.415 kg	
Standards			IEC/EN 60497-1, -4-1, -5-1, UL508, CSA C22.2 No.14	
Certifications			CE, cULus	