Specifications

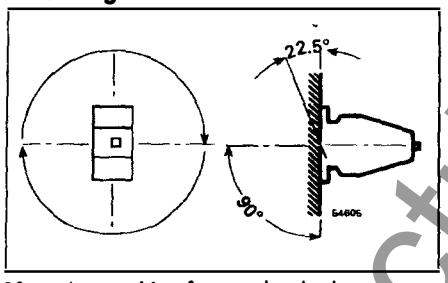
The 3UA overload relays meet or exceed the requirements of NEMA, EEMAC, UL, CSA, IEC, VDE and other international standards. Information on approvals is given in Section 0. Suitable for use in any climate.

Design principle

Overload relay functions

- NEMA Class 10 tripping characteristics
- Phase loss and unbalanced load protection
- Ambient temperature compensation (−25°C to +55°C)
- RESET button with trip-free feature
- Manual/automatic RESET (blue) ①
- Circuit test button (red)
- Trip indication (green)
- 1NO, isolated alarm circuit contact
- SIGUT® or FAST installation system (Fast Accessible Safe Terminations) including screwdriver guide holes, wire funnels, wire stops, and captive hardware supplied with terminals open.
- Marking tag
- Overlapping setting ranges
- Field adjustable

Mounting



Mounting position for overload relays installed onto PANELS.

Tripping characteristics

The current-time curves show the relationship between the tripping time from cold and multiples of the set current I_E. When the relay is at operating temperature and carrying 1.0 × I_E, the tripping times are reduced to approximately 25%. Tripping curve 3 is applicable to 3-pole balanced loads and curve 2, to phase loss conditions. For unbalanced loads the tripping curves lie between curves 2 and 3.

For normal operation, all 3 bimetallic strips of the overload relay must be heated. The 3UA overload relays may be used to protect single phase or DC loads, providing all three bimetals are wired into the circuit.

Adjustment

Marking on the dial denotes **Full Load Amps.**

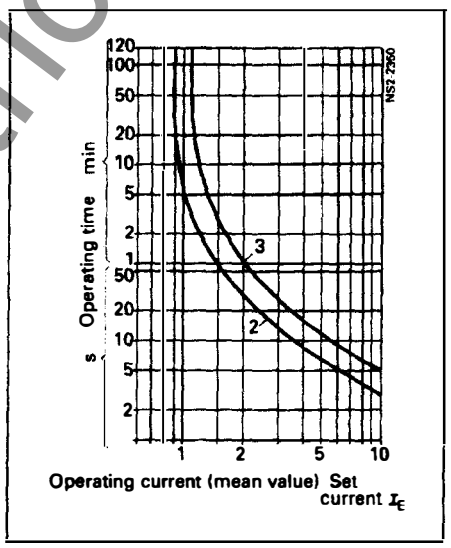
Tripping current is **125%** of dial setting.

Motors with a marked **Service Factor not less than 1.15** or motors with a marked temperature rise not over 40°C:

Set dial to full load current marked on motor nameplate.

All other motors noted for continuous duty including motors with a marked **Service Factor of 1.0:**

Multiply Motor Full Load current by 0.92 and set Overload Relay dial to that value. This will provide protection of 115% of Motor Full Load Current.



Tripping characteristics

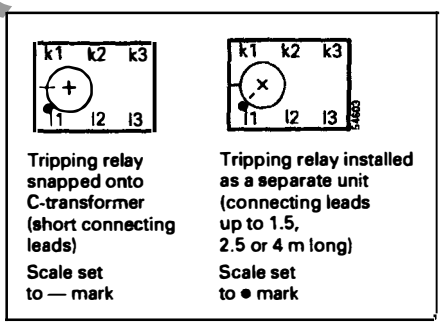
Overload Relays With Current Transformers

3UX1 423 tripping relays are used with the 3UA66 and 3UA68 overload relays.

They can either be snapped onto the current transformer or be installed separately.

When the tripping relay is mounted separately from the current transformer the wire connections installed at the factory must be replaced by longer copper wire connections. The maximum length when using 12 AWG is 400 cm (157.5 in.), 14 AWG is 250 cm (98.5 in.), 16 AWG is 150 cm (58.5 in.).

The set current (rated current of load) must also be set on the scale against the reference mark ● on the housing.



Tripping relay snapped onto C-transformer (short connecting leads)
Scale set to — mark

Tripping relay installed as a separate unit (connecting leads up to 1.5, 2.5 or 4 m long)
Scale set to ● mark

Housing reference mark

① Manual or automatic reset available only on 3UA5 and 3UA6 series overload relays.

WARNING

DISCONNECT EQUIPMENT FROM POWER SUPPLY BEFORE ATTEMPTING INSPECTION OR MAINTENANCE.

FOR STARTERS THAT DID NOT HAVE MOTOR DATA, OVERLOAD RELAYS WERE SELECTED BASED ON AVERAGE FLA LISTED IN TABLE 430–150 OF CURRENT N.E.C. HANDBOOK. CUSTOMER TO VERIFY F.L.A. AND SERVICE FACTOR ON MOTOR NAME–PLATE BEFORE STARTING.

SPECIAL APPLICATION INSTRUCTIONS
3UA SERIES OVERLOAD RELAYS

Equipment supplied with overload relays having catalog numbers beginning with 3UA are calibrated to trip at 125% of dial setting. When supplied in motor control centers, these relays are also identifiable by codes 3Bxx, 3Cxx or 3Axx where xx is a variable which identifies the current range.

Adjustment of these overload relays must be performed in accordance with the following instructions which take precedence over any other setting instructions which may accompany this equipment. If current transformers are supplied, divide the motor full load current by the current transformer ratio and use that value as the full load current when following the adjustment instructions below.

ADJUSTMENT

Marking on the adjustment dial denotes full load amps. Tripping current is 125% of dial setting.

Motors with a marked service factor not less than 1.15, or motors with a marked temperature rise not over 40 degrees C:

Set dial to full load current marked on the motor nameplate.

All other motors rated for continuous duty including motors with a marked service factor of 1.0:

Multiply full load current marked on the motor nameplate by 0.92 and set overload relay dial to that value.

In case of overload relay tripping during motor starting or at maximum running conditions, the overload relay setting can be increased to the following maximum values in accordance with NEC Article 430–34:

Set dial to 1.12 times marked full load current for motors with a marked service factor not less than 1.15 or a marked temperature rise not over 40 degrees C:

Set dial to 1.04 times marked full load current for all other motors including motors with a marked service factor of 1.0.

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10	7-06-93	KLF	ADDED NOTES
09	7-06-93	KLF	ADDED NOTES
08	3-18-93	KLF	ADDED SEALS OVERLOAD RELAYS, ILL.
07	2-5-91	KLF	SEE PAGE 2 OF 2 MOTOR CONTROLLER ORD
06	1-18-90	KLF	
05	1-31-89	KT	ADDED 3BB– W.O.H.
04	8-17-88	RJ	
03	10-16-87	RJ	
02	2-23-87	PMA	SEE PG. 1 OF 2
01	2/11/87		

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Electrical Apparatus Division

DWG NAME: 3UA OVERLOAD CURRENT RANGE AND SETTING INSTRUCTIONS

DRAWN: JK
CHECKED:
APPROVED:

A | BULLETIN 04/94 | DWG NO. 25–135–447–421 | ISSUE 10

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MOTOR CONTROL CENTER OVERLOAD RELAY CODE	DIAL CURRENT RANGE	SIEMENS CATALOG NUMBER
3B0A OR 3C0A OR 3A0A	0.1- 0.16	3UA59 OR 3UA52 OR 3UA55 00 0A
3B0E OR 3C0E OR 3A0E	0.25 - 0.4	3UA59 OR 3UA52 OR 3UA55 00 0E
3B0G OR 3C0G OR 3A0G	0.4 - 0.63	3UA59 OR 3UA52 OR 3UA55 00 0G
3B0J OR 3C0J OR 3A0J	0.63 - 1	3UA59 OR 3UA52 OR 3UA55 00 0J
3B0K OR 3C0K OR 3A0K	0.8 - 1.25	3UA59 OR 3UA52 OR 3UA55 00 0K
3B1A OR 3C1A OR 3A1A	1 - 1.6	3UA59 OR 3UA52 OR 3UA55 00 1A
3B1B OR 3C1B OR 3A1B	1.25 - 2.0	3UA59 OR 3UA52 OR 3UA55 00 1B
3B1C OR 3C1C OR 3A1C	1.6 - 2.5	3UA59 OR 3UA52 OR 3UA55 00 1C
3B1D OR 3C1D OR 3A1D	2 - 3.2	3UA59 OR 3UA52 OR 3UA55 00 1D
3B1E OR 3C1E OR 3A1E	2.5 - 4	3UA59 OR 3UA52 OR 3UA55 00 1E
3B1F OR 3C1F OR 3A1F	3.2 - 5	3UA59 OR 3UA52 OR 3UA55 00 1F
3B1G OR 3C1G OR 3A1G	4 - 6.3	3UA59 OR 3UA54 OR 3UA55 00 1G
3B1H OR 3C1H OR 3A1H	5 - 8	3UA59 OR 3UA52 OR 3UA55 00 1H
3B1J OR 3C1J OR 3A1J	6.3 - 10	3UA59 OR 3UA52 OR 3UA55 00 1J
3B1K OR 3C1K OR 3A1K	8 - 12.5	3UA59 OR 3UA52 OR 3UA55 00 1K
3B2A OR 3C2A OR 3A2A	10 - 16	3UA59 OR 3UA54 OR 3UA55 00 2A
3B2B OR 3C2B OR 3A2B	12.5 - 20	3UA59 OR 3UA54 OR 3UA55 00 2B
3B2C OR 3C2C OR 3A2C	16 - 25	3UA59 OR 3UA54 OR 3UA55 00 2C
3B2D OR 3C2D OR 3A2D	20 - 32	3UA59 OR 3UA54 OR 3UA55 00 2D
3C2K OR 3A2Q	25 - 36	3UA54 OR 3UA55 00 2Q
3C2L	16 - 25	3UA58 00 2C
3C2M	20 - 32	3UA58 00 2D
3B2E OR 3C2E	25 - 40	3UA59 OR 3UA58 00 2E
3B2M	32 - 45	3UA59 OR 3UA58 00 2M
3C2F	32 - 50	3UA58 00 2F
3B2T OR 3C2T	40 - 57	3UA59 OR 3UA58 00 2T
3B2P OR 3C2P	50 - 63	3UA59 OR 3UA58 00 2P
3C2V	57 - 70	3UA58 00 2V
3C2H	55 - 80	3UA62 00 2H
3B2U OR 3C2U	63 - 80	3UA58 00 2U
3C2W	63 - 90	3UA62 00 2W
3C2X	80 - 110	3UA62 00 2X
3C3H	90 - 120	3UA62 00 3H
3C3J	110 - 135	3UA62 00 3J
3C3K	120 - 150	3UA62 00 3K
SIZE 5 WITH 300/5 CT:		
3B1D	120 - 192	3UA59 00 1D
3B1E	150 - 240	3UA59 00 1E
3B1F	192 - 300	3UA59 00 1F
SIZE 6 WITH 600/5 CT:		
3B1D	240 - 384	3UA59 00 1D
3B1E	300 - 480	3UA59 00 1E
3B1F	384 - 600	3UA59 00 1F
SIZE 7 WITH 1000/5 CT:		
3B1D	400 - 640	3UA59 00 10
3B1E	500 - 800	3UA59 00 1E
3B1F	640 - 1000	3UA59 00 1F

3B-BASE MOUNTED TYPE OVERLOAD RELAY. (3UA59)
3C OR 3A-CLOSE COUPLED TYPE OVERLOAD RELAY. (3UA52,3UA54,3UA55,3UA58 & 3UA62).

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10	04/21/94	REVISED D.C.R. FOR SIZE 5,6 AND 7. MLS
09	07/06/93	Revised Notes. ILP
08	03/19/93	ADDED 3UA55 OVERLOAD RELAYS RLL
02	2-5-91	CLOSE WAS CLOSED. HV
01	8-17-88	SEE PAGE 1 OF 1.

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