

Power Relays/Miniature Contactors

3TG10 contactors 4-pole, 4 kW

Overview

Version

The 3TG10 power relays/miniature contactors with 4 main contacts are available with screw terminals or 6.3 mm x 0.8 mm flat connectors. The versions with screw terminals are climate-proof and finger-safe according to EN 61140.

The 3TG10 miniature contactors are characterized by their width of only 36 mm.

Surge suppression

The 3TG10 power relays/miniature contactors have an integrated protective circuit against opening surges.

Application

Because they are hum-free they are suitable for use in household appliances and distribution boards in office and residential areas. They can also be used for applications where there is little space such as air conditioners, heating systems, pumps and fans, i. e. for simple electrical controls.

AC and DC operation

EN 60947-1, EN 60947-4-1, EN 60947-5-1

Overload and short-circuit protection

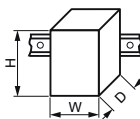
The 3UA7 overload relay can be used for overload protection. This applies to mounting onto contactors and to stand-alone installation.

Technical specifications

Type

Dimensions (W x H x D)

- With 3UA7 overload relay mounted below



3TG10	
mm	36 x 56 x 56
mm	45 x 100 x 62

General data

Endurance

- Mechanical
- Electrical
- AC-1 at I_e
- AC-3 at I_e

Operating cycles	3 million
Operating cycles	0.1 million
Operating cycles	0.4 million

Rated insulation voltage U_i (pollution degree 3)

V	400
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Rated impulse withstand voltage U_{imp}

kV	4
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Protective separation

Between the coil and the contacts acc. to EN 60947-1, Appendix N

V AC	Up to 300
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Permissible ambient temperature

- During operation¹⁾
- During storage

°C	-25 ... + 55
°C	-50 ... + 80

Degree of protection acc. to IEC 60947-1 and EN 60529

IP00, drive system IP20

Control circuit

Power consumption of the solenoid coils (when coil is cold and $1.0 \times U_s$)

- AC operation, 45 ... 450 Hz
- P.f.
- DC operation

VA	4.4
	0.9 (hum-free)
W	4

Coil operating range

$0.85 \dots 1.1 \times U_s$

Short-circuit protection

Fuse links operational class gG

Type LV HRC 3NA, DIAZED 5SB, NEOZED 5SE
acc. to EN 60947-4-1

- Type of coordination "1"
- Type of coordination "2"

Miniature circuit breakers, C characteristic

A	25
A	10
A	10

AC capacity

Utilization category AC-1, switching resistive loads

Rated operational current I_e up to 400 V at 55 °C¹⁾

A	20 for screw terminals, 16 for flat connector
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Rated power U_e for AC loads with p.f. = 1, 230/220 V

- For screw terminals
- For flat connector

kW	7.5 (13 at 400 V)
kW	6 (10 at 400 V)

Minimum conductor cross-section for load with I_e

mm ²	2.5
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Utilization categories AC-2 and AC-3

Operational current for AC-3 at 400 V rated value

A	8.4
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Rated power for slipring or squirrel-cage motors
with 50 and 60 Hz and at 400 V

kW	4
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Utilization category AC-5a (permissible nominal impedance: $\geq 0.5 \Omega$)

Switching of gas discharge lamps

Per main current path at 230 V, 50 Hz

Rated power/rated operational current per lamp

• Uncorrected	18 W	0.37 A	43
	36 W	0.43 A	37
	58 W	0.67 A	24
• DUO switching	18 W	2 x 0.11 A	2 x 81
	36 W	2 x 0.21 A	2 x 42
	58 W	2 x 0.32 A	2 x 28

¹⁾ If the three main current paths carry a load of 20 A, the following applies if $I > 10$ A in the fourth conducting path: Permissible ambient temperature 40 °C.

Type					3TG10	
AC capacity						
Switching gas discharge lamps with correction, ECG						
Per main current path 230 V, 50 Hz						
Rated power per lamp/capacitance/ rated operational current per lamp						
• Shunt compensation	L18 W	4.5 µF	0.11 A	Unit(s)	15	
	L36 W	4.5 µF	0.21 A	Unit(s)	15	
	L58 W	7 µF	0.32 A	Unit(s)	10	
• With ECG (single lamp)	L18 W	6.8 µF	0.10 A	Unit(s)	39	
	L36 W	6.8 µF	0.18 A	Unit(s)	39	
	L58 W	10 µF	0.27 A	Unit(s)	26	
• With ECG (two lamps)	L18 W	10 µF	0.18 A	Unit(s)	2 x 26	
	L36 W	10 µF	0.35 A	Unit(s)	2 x 26	
	L58 W	22 µF	0.52 A	Unit(s)	2 x 12	
Utilization category AC-5b, switching incandescent lamps				kW	1.6	
Per main current path at 230 V, 50 Hz						
Load rating with DC						
Utilization category DC-1, switching resistive load ($L/R \leq 15$ ms)						
• Rated operational currents I_e						
- 1 conducting path	Up to 24 V	A	16			
	60 V	A	6			
	110 V	A	2			
	220 V/240 V	A	0.8			
- 2 conducting paths in series	Up to 24 V	A	16			
	60 V	A	16			
	110 V	A	6			
	220 V/240 V	A	1.6			
- 3 conducting paths in series	Up to 24 V	A	18			
	60 V	A	18			
	110 V	A	16			
	220 V/240 V	A	6			
- 4 conducting paths in series	Up to 24 V	A	20			
	60 V	A	20			
	110 V	A	20			
	220 V/240 V	A	20			
Utilization category DC-3 and DC-5						
Shunt-wound and series-wound motors ($L/R \leq 15$ ms)						
• Rated operational currents I_e						
- 1 conducting path	Up to 24 V	A	10			
	60 V	A	0.5			
	110 V	A	0.15			
	220 V/240 V	A	0			
- 2 conducting paths in series	Up to 24 V	A	16			
	60 V	A	5			
	110 V	A	0.35			
	220 V/240 V	A	0			
- 3 conducting paths in series	Up to 24 V	A	16			
	60 V	A	16			
	110 V	A	10			
	220 V/240 V	A	1.75			
- 4 conducting paths in series	Up to 24 V	A	18			
	60 V	A	16			
	110 V	A	10			
	220 V/240 V	A	2			
Conductor cross-sections						
					 Screw terminals	
Terminal screws	mm ² mm ²				M3	
• Finely stranded with end sleeve (DIN 46228 Form A/D/C)					2 x (0.75 ... 2.5)	
• Solid					2 x (1 ... 2.5), 1 x 4	
Permissible opening tool (screwdriver)				3.0 mm x 0.5 mm (3RA29 08-1A) or Pozidriv 2		
					 Flat connectors	
• Finely stranded 6.3 mm plug-in sleeve acc. to DIN 46245/46247	mm ² mm ²				0.5 ... 1	
- 6.3 ... 1 - 6.3 ... 2.5					1 ... 2.5	
Ⓢ and Ⓣ rating (screw terminals)						
Rated insulation voltage				AC V	600	
Uninterrupted current				Open and enclosed A	20	
Maximum horsepower ratings					Single-phase/Three-phase	
(Ⓢ and Ⓣ approved values), rated power for induction motors with 60 Hz						
At 115 V				hp	0.5/ --	
200 V				hp	1/ 3	
230 V				hp	1.5/ 3	
460 ... 600 V				hp	0/ 5	

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Selection and ordering data

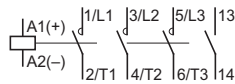
For screw and snap-on mounting onto TH 35 standard mounting rail

Rated data				Main contacts	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Utilization category											
AC-1		AC-2 and AC-3		Version							
Switching of resistive loads at 55 °C											
Operational current I_e up to 400 V	Power of AC loads at 50 Hz and 400 V	Operational current I_e up to 400 V ¹⁾	Power of AC loads at 50 Hz and 400 V			V					
A	kW	A	kW	NO	NC	V					

4-pole · Hum-free · With screw terminals

Terminal designations according to EN 50012

1 NO, Ident. No. **10**



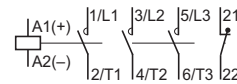
AC operation, 45 ... 450 Hz

20	13	8.4	4	4	--	24 AC	▶	3TG10 10-0AC2	1	1 unit	101
						110 AC	▶	3TG10 10-0AG2	1	1 unit	101
						230 AC	▶	3TG10 10-0AL2	1	1 unit	101
				3	1	24 AC	▶	3TG10 01-0AC2	1	1 unit	101
						110 AC	▶	3TG10 01-0AG2	1	1 unit	101
						230 AC	▶	3TG10 01-0AL2	1	1 unit	101

DC operation

20	13	8.4	4	4	--	24 DC	▶	3TG10 10-0BB4	1	1 unit	101
				3	1	24 DC	▶	3TG10 01-0BB4	1	1 unit	101

1 NC, Ident. No. **01E**



Screw terminals

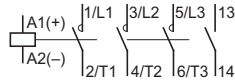


3TG10 ...0...

4-pole · Hum-free · With flat connectors 6.3 mm x 0.8 mm

Terminal designations according to EN 50012

1 NO, Ident. No. **10**



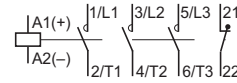
AC operation, 45 ... 450 Hz

16	10	8.4	4	4	--	24 AC	▶	3TG10 10-1AC2	1	1 unit	101
						110 AC	▶	3TG10 10-1AG2	1	1 unit	101
						230 AC	▶	3TG10 10-1AL2	1	1 unit	101
				3	1	24 AC	▶	3TG10 01-1AC2	1	1 unit	101
						110 AC	▶	3TG10 01-1AG2	1	1 unit	101
						230 AC	▶	3TG10 01-1AL2	1	1 unit	101

DC operation

16	10	8.4	4	4	--	24 DC	C	3TG10 10-1BB4	1	1 unit	101
		8.4	4	3	1	24 DC	D	3TG10 01-1BB4	1	1 unit	101

1 NC, Ident. No. **01E**



Flat connectors



3TG10 ...-1...

Accessories

Max. rated operational currents I_e /AC-1 (at 55 °C) of the contactors				Max. conductor cross-sections	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type				mm ²						
Links for paralleling (star jumpers)										
3-pole, without connection terminals^{1) 2)}										
16 star jumpers can be reduced by one pole				--	▶	3RT19 16-4BA31		1	1 unit	101
3-pole, with connection terminals^{1) 3)}										
40				25	▶	3RT19 16-4BB31		1	1 unit	101
4-pole, with connection terminals^{1) 4)}										
40				25	C	3RT19 16-4BB41		1	1 unit	101

¹⁾ The links for paralleling can be reduced by one pole. The rated operational currents apply to each pole. The links for paralleling are insulated.

²⁾ Replacement for 3TX4 490-2C.

³⁾ Replacement for 3TX4 490-2A.

⁴⁾ Replacement for 3TX4 490-2B.