047702
ZW7-540

Overview
Specifications
Resources

DELIVERY PROGRAM

Product range
ZW7 current transformer-operated overload relays

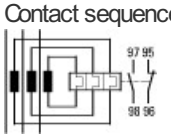
Description
Test/off button
Reset pushbutton manual/auto
Trip-free release
Protection with heavy starting duty

Mounting type
Separate mounting

Setting range

Overload releases [I$_r$]
360 - 540 A

Contact sequence



Auxiliary contacts

N/O = Normally open
1 N/O

N/C = Normally closed
1 N/C

Notes
The main current parameters are defined by the main current wiring which is used.

TECHNICAL DATA

General

Standards
IEC/EN 60947, VDE 0660, UL, CSA

Climatic proofing
Damp heat, constant, to IEC 60068-2-78
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature
Open
-25 - +50 °C

Ambient temperature
Enclosed
- 25 - 40 °C

Temperature compensation
Continuous

Mounting position
As required

Weight
0.8 kg

Mechanical shock resistance

10
Sinusoidal
Shock duration 10 ms g

Degree of Protection
IP00

Protection against direct contact when actuated from front (EN 50274)
Finger and back-of-hand proof

Altitude
Max. 2000 m

Main conducting paths

Rated impulse withstand voltage [U_{imp}]
8000 V AC

Overvoltage category/pollution degree
III/3

Rated insulation voltage [U_i]
1000 V

Rated operational voltage [U_e]
1000 V AC

Safe isolation to EN 61140
Between auxiliary contacts and main contacts
440 V AC

Safe isolation to EN 61140
Between main circuits
440 V AC

Short-circuit protection Maximum fuse
With overload relay in conjunction with a transformer as required for the contactor

Current heat loss (3 conductors)
Lower value of the setting range
3 W

Current heat loss (3 conductors)
Maximum setting

10 W

Push-through opening [□]
27 mm

Auxiliary and control circuits

Rated impulse withstand voltage [U_{imp}]
4000 V

Overvoltage category/pollution degree
III/3

Terminal capacities
Solid
1 x (0.75 - 4)
2 x (0.75 - 4) mm^2

Terminal capacities
Flexible with ferrule
1 x (0.75 - 2.5)
2 x (0.75 - 2.5) mm^2

Terminal capacities
Solid or stranded
2 x (18 - 14) AWG

Terminal screw
M3.5

Tightening torque
1.2 Nm

Stripping length
8 mm

Tools
Pozidriv screwdriver
2 Size

Tools
Standard screwdriver
1 x 6 mm

Rated insulation voltage [U_i]

500 V AC

Rated operational voltage [U_e]
500 V AC

Safe isolation to EN 61140
between the auxiliary contacts
240 V AC

Conventional thermal current [I_{th}]
6 A

Rated operational current [I_e]
AC-15
Make contact
120 V [I_e]
1.5 A

Rated operational current [I_e]
AC-15
Make contact
220 V 230 V 240 V [I_e]
1.5 A

Rated operational current [I_e]
AC-15
Make contact
380 V 400 V 415 V [I_e]
0.5 A

Rated operational current [I_e]
AC-15
Make contact
500 V [I_e]
0.5 A

Rated operational current [I_e]
AC-15
Break contact
120 V [I_e]
1.5 A

Rated operational current [I_e]
AC-15
Break contact
220 V 230 V 240 V [I_e]
1.5 A

Rated operational current [I_e]
AC-15

Break contact
380 V 400 V 415 V [I_e]
0.9 A

Rated operational current [I_e]
AC-15
Break contact
500 V [I_e]
0.8 A

Rated operational current [I_e]
DC L/R □ 15 ms
Switch-on and switch-off conditions based on DC-13, time constant as specified.

Rated operational current [I_e]
DC L/R □ 15 ms
24 V [I_e]
0.9 A

Rated operational current [I_e]
DC L/R □ 15 ms
60 V [I_e]
0.75 A

Rated operational current [I_e]
DC L/R □ 15 ms
110 V [I_e]
0.4 A

Rated operational current [I_e]
DC L/R □ 15 ms
220 V [I_e]
0.2 A

Short-circuit rating without welding
max. fuse
6 A gG/gL

Notes

Ambient temperature: Operating range to IEC/EN 60947, PTB: -5°C to +50°C

Terminal capacities Main circuits solid and flexible with ferrule: When connecting 2 conductors, only the following combinations are admissible:

Rated operational current: Making and breaking currents to DC-13, time constant as stated

Short-circuit rating: See transparent overlay "Fuses" for time/current characteristics (Please

enquire)

Rating data for approved types

Auxiliary contacts
Pilot Duty
AC operated
B300 at opposite polarity
B600 at same polarity

Auxiliary contacts
Pilot Duty
DC operated
R300

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
540 A

Heat dissipation per pole, current-dependent [P_{vid}]
2.7 W

Equipment heat dissipation, current-dependent [P_{vid}]
8.1 W

Static heat dissipation, non-current-dependent [P_{vs}]
0 W

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+50 °C

IEC/EN 61439 design verification

10.2 Strength of materials and parts
10.2.2 Corrosion resistance
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
10.2.7 Inscriptions
Meets the product standard's requirements.

10.3 Degree of protection of ASSEMBLIES
Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances
Meets the product standard's requirements.

10.5 Protection against electric shock
Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components
Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections
Is the panel builder's responsibility.

10.8 Connections for external conductors
Is the panel builder's responsibility.

10.9 Insulation properties
10.9.2 Power-frequency electric strength
Is the panel builder's responsibility.

10.9 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
10.9.4 Testing of enclosures made of insulating material
Is the panel builder's responsibility.

10.10 Temperature rise
The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating
Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility
Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function
The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

TECHNICAL DATA ETIM 7.0

Low-voltage industrial components (EG000017) / Thermal overload relay (EC000106)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss10.0.1-27-37-15-01 [AKF075014])

Adjustable current range
360 - 540 A

Max. rated operation voltage Ue
690 V

Mounting method
Separate positioning

Type of electrical connection of main circuit
Screw connection

Number of auxiliary contacts as normally closed contact
1

Number of auxiliary contacts as normally open contact
1

Number of auxiliary contacts as change-over contact
0

Release class
Other

Reset function input
No

Reset function automatic
Yes

Reset function push-button
Yes

APPROVALS

Product Standards
UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; CE marking

UL File No.
E29184

UL Category Control No.
NKCR

CSA File No.
12528

CSA Class No.
3211-03

North America Certification
UL listed, CSA certified

Specially designed for North America
No

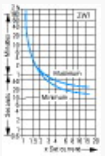
Suitable for
Branch circuits

Max. Voltage Rating
600 V AC

Degree of Protection
IEC: IP00, UL/CSA Type: -

CHARACTERISTICS

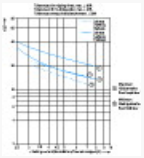
Characteristic curve



These tripping characteristics are mean values of

the spread at 20 °C ambient air temperature in a cold state. Tripping time depends on response current. When the devices are at operational temperature the tripping time of the overload relay reduces to approx. 25 % of the read off value.

Characteristic curve



DIMENSIONS

Reset/on

Permissible mounting positions