136501
ZEB32-45-GF/KK

Overview
Specifications
Resources

DELIVERY PROGRAM

Product range
Electronic overload relays ZEB

Phase-failure sensitivity
IEC/EN 60947, VDE 0660 Part 102

Description
Test/off button
Reset pushbutton
Manual/auto reset selectable
Protection in the case of starting under load (class 10 to class 20)

Mounting type
Separate mounting

Earth-fault protection

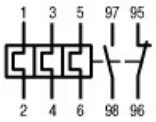
Earth-fault protection
with

Trip at approx.
> 0.5 x I_r in 2 s
> 1.5 x I_r in 1 s

Setting range

Overload releases [I_r]
9 - 45 A

Contact sequence



Auxiliary contacts

N/O = Normally open
1 N/O

N/C = Normally closed
1 N/C

For use with
DILM17
DILM25
DILM32
DILM38
DIULM17
DIULM25
DIULM32
SDAINLM30
SDAINLM45
SDAINLM55

Conformity, Approval

Explosion protection (according to ATEX 94/9/EC)
II(2)GD [Ex d] [Ex e] [Ex tb]

EC-prototype test certification
SIRA 13 ATEX 9348X

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 - +65 °C

Ambient temperature
Ambient temperature open max.
65 °C

Ambient temperature
Enclosed
Ambient temperature enclosed max.
65 °C

Mechanical shock resistance
15
Shock duration 10 ms
according to IEC 60068-2-27 g

Degree of Protection
IP20

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}]
6000 V AC

Overvoltage category/pollution degree
III/3

Rated insulation voltage [U_i]
690 V AC

Rated operational voltage [U_e]
690 V AC

Rated frequency [f]
50/60 Hz

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

Safe isolation to EN 61140
Between main circuits
600 V AC

Terminal capacities
Solid
1 x 1.5 - 16 mm^2

Terminal capacities
Solid or stranded
1 x 14 - 4 AWG

Stripping length
13 mm

Auxiliary and control circuits

Rated impulse withstand voltage [U_{imp}]
6000 V

Overvoltage category/pollution degree
III/3

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

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

Terminal capacities

Solid or stranded
2 x (18 - 12) AWG

Terminal screw
M3.5

Tightening torque
0.8 - 1.2 Nm

Tightening torque
7 lb-in

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}]
5 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

Rating data for approved types

Auxiliary contacts
Pilot Duty
AC operated
B600

Auxiliary contacts
Pilot Duty
DC operated
R300

Short Circuit Current Rating
600 V High Fault
SCCR (fuse)
100 kA

Short Circuit Current Rating
600 V High Fault
max. Fuse
60 Class J A

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

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

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

Equipment heat dissipation, current-dependent [P_{vid}]
4.3 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.
+65 °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) / Electronic overload relay (EC001080)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Electronic overload relay (ecl@ss10.0.1-27-37-15-02 [AKF076014])

Adjustable current range
9 - 45 A

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

Rated control supply voltage Us at AC 50HZ
0 - 0 V

Rated control supply voltage Us at AC 60HZ
0 - 0 V

Rated control supply voltage Us at DC
0 - 0 V

Release class
Adjustable

Voltage type for actuating
Self powered

Reset function automatic
Yes

Reset function input
No

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.
E1230

UL Category Control No.
NKCR

CSA File No.
2290956

CSA Class No.
3211-03

North America Certification
UL listed, CSA certified

Specially designed for North America
No

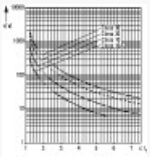
Suitable for
Branch circuits

Max. Voltage Rating
600 V AC

Degree of Protection
IEC: IP20, UL/CSA Type: -

CHARACTERISTICS

Characteristic curve



DIMENSIONS