**276326**
**DILA-40(110V50HZ,120V60HZ)**





# DELIVERY PROGRAM

Product range
DILA relays

Application
Contactor relays

Description
Basic devices with positive operation contacts

Connection technique
Screw terminals

## Rated operational current

AC-15
220 V 230 V 240 V [$I_e$]
4 A

AC-15
380 V 400 V 415 V [$I_e$]
4 A

## Contacts

N/O = Normally open
4 N/O

Contact sequence


**Instructions**
Contact numbers to EN 50011
Coil terminal markings to EN 50005

## Code number and version of combination

Distinctive number
40D

Can be combined with auxiliary contact module
DILA-XHI(V)…

Actuating voltage
110 V 50 Hz, 120 V 60 Hz

Voltage AC/DC
AC operation

Connection to SmartWire-DT
no

**Instructions**
Contact numbers to EN 50011
Coil terminal markings to EN 50005

# TECHNICAL DATA

## General

Standards
IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA

Lifespan, mechanical
AC operated [Operations]
20 x $10^6$

Maximum operating frequency [Operations/h]
9000

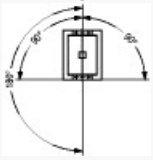
Climatic proofing
Damp heat, constant, to IEC 60068-2-78
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature
Open
-25 - +60 °C

Ambient temperature
Enclosed
- 25 - 40 °C

Ambient temperature
Ambient temperature, storage
- 40 - 80 °C

Mounting position
Mounting position



Mechanical shock resistance (IEC/EN 60068-2-27)
Half-sinusoidal shock, 10 ms
Basic unit with auxiliary contact module
N/O contact
7 g

Mechanical shock resistance (IEC/EN 60068-2-27)
Half-sinusoidal shock, 10 ms
Basic unit with auxiliary contact module
N/C contact
5 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

Weight
AC operated
0.24 kg

Terminal capacities
Screw terminals
Solid
1 x (0,75 - 4)
2 x (0,75 - 2,5) $mm^2$

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

Terminal capacities
Screw terminals
Solid or stranded
18 - 14 AWG

Terminal capacities
Screw terminals
Stripping length
10 mm

Terminal capacities
Screw terminals
Terminal screw
M3.5

Terminal capacities
Screw terminals
Pozidriv screwdriver
2 Size

Terminal capacities
Screw terminals
Standard screwdriver
0.8 x 5.5
1 x 6 mm

Terminal capacities
Screw terminals
Max. tightening torque

1.2 Nm

## Contacts

Positive operating contacts to ZH 1/457, including auxiliary contact module
Yes

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

Overvoltage category/pollution degree
III/3

Rated insulation voltage [$U_i$]
690 V AC

Rated operational voltage [$U_e$]
690 V AC

Safe isolation to EN 61140
between coil and auxiliary contacts
400 V AC

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

Rated operational current
Conventional free air thermal current, 1 pole
Open
at 60 °C [$I_{th} = I_e$]
16 A

Rated operational current
AC-15
220 V 230 V 240 V [$I_e$]
4 A

Rated operational current
AC-15
380 V 400 V 415 V [$I_e$]
4 A

Rated operational current
AC-15
500 V [$I_e$]

1.5 A

Rated operational current
DC current
Notes
Switch-on and switch-off conditions based on
DC-13, time constant as specified.

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
1 [24 V]
10 A

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
1 [60 V]
6 A

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
2 [60 V]
10 A

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
1 [110 V]
3 A

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
3 [110 V]
6 A

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
1 [220 V]
1 A

Rated operational current
DC current
DC L/R □ 15 ms

Contacts in series:
3 [220 V]
5 A

Rated operational current
DC current
DC L/R □ 50 ms
Contacts in series:
3 [24 V]
4 A

Rated operational current
DC current
DC L/R □ 50 ms
Contacts in series:
3 [60 V]
4 A

Rated operational current
DC current
DC L/R □ 50 ms
Contacts in series:
3 [110 V]
2 A

Rated operational current
DC current
DC L/R □ 50 ms
Contacts in series:
3 [220 V]
1 A

Rated operational current
Control circuit reliability [Failure rate]
$<10^{-8}$, < one failure at 100 million operations
(at $U_e$ = 24 V DC, $U_{min}$ = 17 V, $I_{min}$ = 5.4 mA) λ

Short-circuit rating without welding
Maximum overcurrent protective device
220 V 230 V 240 V
4 PKZM0

Short-circuit rating without welding
Maximum overcurrent protective device
380 V 400 V 415 V
4 PKZM0

Short-circuit rating without welding
Short-circuit protection maximum fuse
500 V
10 A gG/gL

Current heat loss at $I_{th}$
AC operated
0.53 W

## Magnet systems

Voltage tolerance
AC operated
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz [Pick-up]
0.8 - 1.1 x $U_c$

Power consumption
AC operation
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz [Pick-up]
24 VA

Power consumption
AC operation
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz [Sealing]
3.4 VA

Power consumption
AC operation
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz [Sealing]
1.4 W

duty factor
100 % DF

Changeover time at 100 % $U_S$ (recommended value)
AC operated closing delay
15 - 21 ms

Changeover time at 100 % $U_S$ (recommended value)
AC operated N/O contact opening delay
9 - 18 ms

## Rating data for approved types

Auxiliary contacts
Pilot Duty
AC operated
A600

Auxiliary contacts
Pilot Duty
DC operated
P300

Auxiliary contacts
General Use
AC
600 V

Auxiliary contacts
General Use
AC
15 A

Auxiliary contacts
General Use
DC
250 V

Auxiliary contacts
General Use
DC
1 A

# DESIGN VERIFICATION AS PER IEC/EN 61439

## Technical data for design verification

Rated operational current for specified heat dissipation [$I_n$]
15.5 A

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

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

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

Heat dissipation capacity [$P_{diss}$]

0 W

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+60 °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) / Contactor relay (EC000196)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])

Rated control supply voltage Us at AC 50HZ
110 - 110 V

Rated control supply voltage Us at AC 60HZ
120 - 120 V

Rated control supply voltage Us at DC
0 - 0 V

Voltage type for actuating
AC

Rated operation current Ie, 400 V
4 A

Connection type auxiliary circuit
Screw connection

Mounting method
DIN-rail/screw

Interface
No

Number of auxiliary contacts as normally closed contact
0

Number of auxiliary contacts as normally open contact
4

Number of auxiliary contacts as normally closed contact, delayed switching
0

Number of auxiliary contacts as normally open contact, leading
0

With LED indication
No

Number of auxiliary contacts as change-over contact
0

Manual operation possible
No

## APPROVALS

Product Standards
IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05;
CE marking

UL File No.
E29184

UL Category Control No.
NKCR

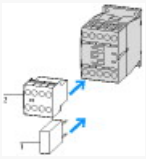
CSA File No.
012528

CSA Class No.
3211-03

North America Certification
UL listed, CSA certified

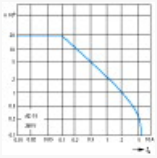
Specially designed for North America
No

## CHARACTERISTICS



Accessories
1: Suppressor
2: Auxiliary contact module

Characteristic curve



Component lifespan (operations)
$I_e$ = rated operational current

Characteristic curve

Component lifespan (operations)
$I_e$ = rated operational current
Three contacts in series

## DIMENSIONS

Contactor with auxiliary contact module