**048912**
**31DILE**

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Technical data ETIM 7.0
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Characteristics
Dimensions

# DELIVERY PROGRAM

Accessories
Auxiliary contact modules

Description
with interlocked opposing contacts
Switching elements according to EN 50005
Switching elements according to EN 50012 are to be preferred.
Version E combinations correspond to EN 50011 and are to be preferred.

Function
for standard applications

Number of poles
4 pole

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 [$I_e$]
2 A

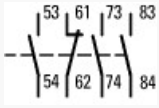
## Contacts

N/O = Normally open
3 N/O

N/C = Normally closed
1 NC

Mounting type
Front fixing

Contact sequence




For use with
DILEM-10(-G)(…)
DILEM-01(-G)(…)
DILEM-4(-G)(…)
DILER40(-G)
DILER31(-G)
DILER22
DILEEM-10(-G)(…)
DILEEM-01(-G)(…)
DILEM12-10(-G)(…)
DILEM12-01(-G)(…)

**Instructions**
Interlocked opposing contacts according to IEC/EN 60947-5-1 appendix L, inside the auxiliary contact modules, also for the integrated auxiliary contacts of the DILE(E)M
Auxiliary contacts used as mirror contacts according to IEC/EN 60947-4-1 Appendix F (not N/C late open)

## Code number and version of combination

Distinctive number
71E

with basic device
DILER-40(-G)

62

with basic device
DILER-31(-G)

53

with basic device
DILER-22

# TECHNICAL DATA

## General

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

Lifespan, mechanical
AC operated [Operations]
$10 \times 10^6$

Lifespan, mechanical
DC operated [Operations]
$20 \times 10^6$

Component lifespan at $U_e = 240$ V
AC-15 [Operations]
$0.2 \times 10^6$

Component lifespan at $U_e = 240$ V
DC
L/R = 50 ms: 2 contacts in series at $I_e = 0.5$ A
[Operations]
$0.15 \times 10^6$

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 - +50 °C

Ambient temperature
Enclosed
- 25 - 40 °C

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

Mounting position
Mounting position
As required, except vertical with terminals A1/A2 at the bottom

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

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

Degree of Protection
IP20

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

Weight
0.04 kg

Terminal capacities
Screw terminals
Solid
1 x (0.75 - 2.5)
2 x (0.75 - 2.5) $mm^2$

Terminal capacities
Screw terminals
Flexible with ferrule
1 x (0.75 - 1.5)
2 x (0.75 - 1.5) $mm^2$

Terminal capacities
Screw terminals
Solid or stranded
Single 18 – 14/Double 18 – 14 AWG

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

Interlocked opposing contacts within an auxiliary contact module (to IEC 60947-5-1 Annex L)
Yes

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 [$U_e$]

600 V AC

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

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

Rated operational current
Conventional free air thermal current, 1 pole
Notes
At maximum permissible ambient air temperature.

Rated operational current
Conventional free air thermal current, 1 pole
Conv. thermal current [$I_{th}$]
10 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 [$I_e$]
2 A

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

Rated operational current
DC current
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]
2.5 A

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

Contacts in series:
2 [60 V]
2.5 A

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

Rated operational current
DC current
DC L/R □ 15 ms
Contacts in series:
3 [220 V]
0.5 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
6 A gG/gL

Short-circuit rating without welding
Short-circuit protection maximum fuse
500 V
10 A fast

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

Current heat loss at $I_{th}$
DC operated
1.5 W

Current heat loss at $I_{th}$
Current heat loss per auxiliary circuit at $I_e$ (AC-15/230 V)
0.24 CO

### 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
10 A

Auxiliary contacts
General Use
DC
250 V

Auxiliary contacts
General Use
DC
0.5 A

## DESIGN VERIFICATION AS PER IEC/EN 61439

### Technical data for design verification

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

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

Equipment heat dissipation, current-dependent [$P_{vid}$]
0 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) / Auxiliary contact block (EC000041)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Component for low-voltage switching technology / Auxiliary switch block (ecl@ss10.0.1-27-37-13-02 [AKN342013])

Number of contacts as change-over contact
0

Number of contacts as normally open contact
3

Number of contacts as normally closed contact
1

Number of fault-signal switches
0

Rated operation current Ie at AC-15, 230 V
4 A

Type of electric connection

Screw connection

Model
Top mounting

Mounting method
Front fastening

Lamp holder
None

## 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

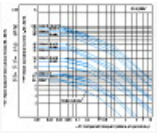
CSA Class No.
3211-03

North America Certification
UL listed, CSA certified

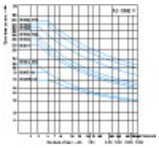
Specially designed for North America
No

## CHARACTERISTICS

Characteristic curve



Characteristic curve



Short-time loading, 3-pole
Time interval between two loading cycles: 15 minutes

## DIMENSIONS

83 mm: DILE… + …DILE(M)
86 mm: DILE…-C… + …DILE(M)