



DILMP20(110V50HZ,120V60HZ)-PI - Contactor, 4 pole, AC operation, AC-1: 22 A, 110 V 50 Hz, 120 V 60 Hz, Push in terminals



199260
DILMP20(110V50HZ,120V60HZ)-PI



Overview



Specifications



Resources



[Delivery program >](#)

[Technical data >](#)

[Design verification as per IEC/EN 61439 >](#)

[Technical data ETIM8.0 >](#)

DELIVERY PROGRAM

Product range
 Contactors

Application
 Contactors for 4 pole electric consumers

Subrange
 Contactors up to 200 A, 4 pole

Utilization category
 AC-1: Non-inductive or slightly inductive loads, resistance furnaces
 AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running

Connection technique
 Push in terminals

Number of poles
 4 pole

Rated operational current

AC-1
Conventional free air thermal current, 3 pole, 50 -
60 Hz
at 40 °C [$t_{th} = t_a$]
22 A

AC-1
Conventional free air thermal current, 3 pole, 50 -
60 Hz
at 50 °C [$t_{th} = t_a$]
21 A

AC-1
Conventional free air thermal current, 3 pole, 50 -
60 Hz
at 55 °C [$t_{th} = t_a$]
20.5 A

AC-1
Conventional free air thermal current, 3 pole, 50 -
60 Hz
at 60 °C [$t_{th} = t_a$]
20 A

For use with
DILM12-XH(C)...-PI
DILM32-XH(C)...-PI
DILA-XH(V)(C)...-PI

Actuating voltage
110 V 50 Hz, 120 V 60 Hz

Voltage AC/DC
AC operation

Connection to SmartWire-DT
no

Instructions
Contacts to EN50012.

TECHNICAL DATA

General

Standards
IEC/EN 60947, VDE 0660

Lifespan, mechanical
AC operated [Operations]
10 x 10⁶

Lifespan, mechanical
DC operated [Operations]
10 x 10⁶

Operating frequency, mechanical
AC operated [Operations/h]
5000

Climatic proofing
Damp heat, constant, to IEC 60068-2-3
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature
Open
-25 - +60 °C

Ambient temperature
Enclosed
- 25 - 40 °C

Ambient temperature
Storage
- 40 - 80 °C

Mechanical shock resistance (IEC/EN 60068-2-27)
Half-sinusoidal shock, 10 ms
Main contacts
NO contact
10 g

Mechanical shock resistance (IEC/EN 60068-2-27)
Half-sinusoidal shock, 10 ms
Auxiliary contacts
NO contact
7 g

Mechanical shock resistance (IEC/EN 60068-2-27)
Half-sinusoidal shock, 10 ms
Auxiliary contacts

NC contact
5 g

Degree of Protection
IP20

Altitude
Max. 2000 m

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

Stripping length
10 mm

Terminal capacity main cable
Stripping length
10 mm

Terminal capacity main cable
Push-in terminals
Solid
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity main cable
Push-in terminals
flexible
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity main cable
Push-in terminals
flexible with ferrules
1 x (0,5 - 1,5)
2 x (0,5 - 1,5) mm²

Terminal capacity main cable
Push-in terminals
flexible with ultrasonic welded busbar end
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity main cable
Push-in terminals
flexible with uninsulated wire end ferrule
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity main cable
Push-in terminals
Solid or stranded
20 - 14 AWG

Terminal capacity main cable
Push-in terminals
Stripping length
10 mm

Terminal capacity main cable
Push-in terminals
Standard screw driver
3.0 x 0.5

Terminal capacity control circuit cables
Push-in terminals
Solid
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity control circuit cables
Push-in terminals
Flexible
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity control circuit cables
Push-in terminals
Flexible with ferrule
1 x (0,5 - 1,5)
2 x (0,5 - 1,5) mm²

Terminal capacity control circuit cables
Push-in terminals
flexible with ultrasonic welded busbar end
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity control circuit cables
Push-in terminals
flexible with uninsulated wire end ferrule
1 x (0,5 - 2,5)
2 x (0,5 - 2,5) mm²

Terminal capacity control circuit cables
Push-in terminals
Solid or stranded
20 - 14 AWG

Terminal capacity control circuit cables
Push-in terminals
Stripping length
10 mm

Terminal capacity control circuit cables
Push-in terminals
Standard screw driver
3.0 x 0.5 mm

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

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

Safe isolation to EN 61140
between the contacts
400 V AC

Making capacity ($\cos \phi$) [Up to 690 V]
144
According to IEC/EN 60947 A

Breaking capacity
220 V 230 V
120 A

Breaking capacity
380 V 400 V
120 A

Breaking capacity
500 V

100 A

Breaking capacity
660 V 690 V
70 A

Short-circuit rating
Short-circuit protection maximum fuse
Type "2" coordination
400 V [gG/gL 500 V]
20 A

Short-circuit rating
Short-circuit protection maximum fuse
Type "2" coordination
690 V [gG/gL 690 V]
20 A

Short-circuit rating
Short-circuit protection maximum fuse
Type "1" coordination
400 V [gG/gL 500 V]
35 A

Short-circuit rating
Short-circuit protection maximum fuse
Type "1" coordination
690 V [gG/gL 690 V]
25 A

AC

AC-1
Rated operational current
Conventional free air thermal current, 3 pole, 50 -
60 Hz
Open
at 40 °C [$I_{th} = I_n$]
22 A

AC-1
Rated operational current
Conventional free air thermal current, 3 pole, 50 -
60 Hz
Open
at 50 °C [$I_{th} = I_n$]
21 A

AC-1
Rated operational current
Conventional free air thermal current, 3 pole, 50 -
60 Hz

Open
at 55 °C [$I_{th} = I_e$]
20.5 A

AC-1
Rated operational current
Conventional free air thermal current, 3 pole, 50 -
60 Hz
Open
at 60 °C [$I_{th} = I_e$]
20 A

AC-1
Rated operational current
Conventional free air thermal current, 3 pole, 50 -
60 Hz
enclosed [I_{th}]
18 A

AC-1
Rated operational current
Conventional free air thermal current, 1 pole
open [I_{th}]
60 A

AC-1
Rated operational current
Conventional free air thermal current, 1 pole
enclosed [I_{th}]
54 A

AC-1
Mtor rating [P]
220/230 V [P]
8 kW

AC-1
Mtor rating [P]
240 V [P]
9 kW

AC-1
Mtor rating [P]
380/400 V [P]
14 kW

AC-1
Mtor rating [P]
415 V [P]
15 kW

AC-1
Motor rating [P]
440 V [P]
16 kW

AC-1
Motor rating [P]
500 V [P]
18 kW

AC-1
Motor rating [P]
690 V [P]
24 kW

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
Notes
At maximum permissible ambient temperature
(open.)
Also tested according to AC-3e.

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
220 V 230 V [I_e]
12 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
240 V [I_e]
12 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
380 V 400 V [I_e]
12 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
415 V [I_e]
12 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
440V [I_e]
12 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
500 V [I_e]
10 A

AC-3
Rated operational current
Open, 3-pole: 50 – 60 Hz
660 V 690 V [I_e]
7 A

AC-3
Motor rating [P]
220 V 230 V [P]
3.5 kW

AC-3
Motor rating [P]
240V [P]
4 kW

AC-3
Motor rating [P]
380 V 400 V [P]
5.5 kW

AC-3
Motor rating [P]
415 V [P]
7 kW

AC-3
Motor rating [P]
440 V [P]
7.5 kW

AC-3
Motor rating [P]
500 V [P]
7 kW

AC-3
Motor rating [P]
660 V 690 V [P]
6.5 kW

Current heat loss

3 pole, at I_{th} (60°)
3 W

Impedance per pole
2.5 mΩ

Magnet systems

Voltage tolerance
AC operated 50 Hz [Pick-up]
0.8 - 1.1 x U_c

Voltage tolerance
AC operated 50/60 Hz
0.8 - 1.1 x U_c

Voltage tolerance
Drop-out voltage AC operated [Drop-out]
0.4 - 0.6 x U_c

Power consumption of the coil in a cold state and
1.0 x U_S
AC operated 50/60 Hz [Pick-up]
24 VA

Power consumption of the coil in a cold state and
1.0 x U_S
AC operated 50/60 Hz [Pick-up]
19 W

Power consumption of the coil in a cold state and
1.0 x U_S
AC operated 50/60 Hz [Sealing]
4 VA

Power consumption of the coil in a cold state and
1.0 x U_S
AC operated 50/60 Hz [Sealing]
1.4 W

Duty factor
100 % DF

Changeover time at 100 % U_S (recommended
value)
Main contacts
AC operated
Closing delay

15 - 21 ms

Changeover time at 100 % U_S (recommended value)
Main contacts
AC operated
Opening delay
9 - 18 ms

Changeover time at 100 % U_S (recommended value)
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).
 1 mA

Rating data for approved types

Switching capacity
Maximum motor rating
Three-phase
200 V
208 V
5 HP

Switching capacity
Maximum motor rating
Three-phase
230 V
240 V
5 HP

Switching capacity
Maximum motor rating
Three-phase
460 V
480 V
10 HP

Switching capacity
Maximum motor rating
Three-phase
575 V
600 V
10 HP

Switching capacity
Maximum motor rating
Single-phase
115 V
120 V
1 HP

Switching capacity
Maximum motor rating
Single-phase
230 V
240 V
2 HP

Switching capacity
General use
20 A

Short Circuit Current Rating
Basic Rating
SCCR
5 kA

Short Circuit Current Rating
Basic Rating
max. Fuse
45 A

Short Circuit Current Rating
Basic Rating
max. CB
60 A

Short Circuit Current Rating
480 V High Fault
SCCR (fuse)
30 kA

Short Circuit Current Rating
480 V High Fault
max. Fuse
25 Class RK5 A

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

Short Circuit Current Rating
600 V High Fault
max. Fuse
25 Class RK5 A

Special Purpose Ratings
Electrical Discharge Lamps (Ballast)
480V 60Hz 3phase, 277V 60Hz 1phase
20 A

Special Purpose Ratings
Electrical Discharge Lamps (Ballast)
600V 60Hz 3phase, 347V 60Hz 1phase
20 A

Special Purpose Ratings
Incandescent Lamps (Tungsten)
480V 60Hz 3phase, 277V 60Hz 1phase
14 A

Special Purpose Ratings
Incandescent Lamps (Tungsten)
600V 60Hz 3phase, 347V 60Hz 1phase
14 A

Special Purpose Ratings
Resistance Air Heating
480V 60Hz 3phase, 277V 60Hz 1phase
20 A

Special Purpose Ratings
Resistance Air Heating
600V 60Hz 3phase, 347V 60Hz 1phase
20 A

Special Purpose Ratings
Definite Purpose Ratings (100,000 cycles acc. to
UL 1995)
LRA 480V 60Hz 3phase
90 A

Special Purpose Ratings
Definite Purpose Ratings (100,000 cycles acc. to
UL 1995)
FLA 480V 60Hz 3phase
15 A

Special Purpose Ratings
Elevator Control
200V 60Hz 3phase
2 HP

Special Purpose Ratings
Elevator Control
200V 60Hz 3phase
7.8 A

Special Purpose Ratings
Elevator Control
240V 60Hz 3phase
3 HP

Special Purpose Ratings
Elevator Control
240V 60Hz 3phase
9.6 A

Special Purpose Ratings
Elevator Control
480V 60Hz 3phase
7.5 HP

Special Purpose Ratings
Elevator Control
480V 60Hz 3phase
11 A

Special Purpose Ratings
Elevator Control
600V 60Hz 3phase
7.5 HP

Special Purpose Ratings
Elevator Control
600V 60Hz 3phase
9 A

DESIGN VERIFICATION AS PER IEC/EN 61439

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+60 °C

TECHNICAL DATA ETIM 8.0

Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)

Electric engineering, automation, process control engineering / Low-voltage switch technology /
Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])

Rated control supply voltage U_s at AC 50HZ

110 - 110 V

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

Rated control supply voltage U_s at DC
0 - 0 V

Voltage type for actuating
AC

Rated operation current I_e at AC-1, 400 V
22 A

Rated operation current I_e at AC-3, 400 V
12 A

Rated operation power at AC-3, 400 V
5.5 kW

Rated operation current I_e at AC-4, 400 V
10 A

Rated operation power at AC-4, 400 V
4.5 kW

Rated operation power NEMA
0 kW

Modular version
No

Number of auxiliary contacts as normally open
contact
0

Number of auxiliary contacts as normally closed
contact
0

Type of electrical connection of main circuit
Spring clamp connection

Number of normally closed contacts as main

contact
0

Number of normally open contacts as main contact
4



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