

# Specifications



## Eaton 199288

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 N/O, 1 NC, RDC 24: 24 - 27 V DC, DC operation, Push in terminals

### General specifications

|                      |                                                                                                                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRODUCT NAME         | Eaton Moeller® series DILM contactor                                                                                                                                                    |
| CATALOG NUMBER       | 199288                                                                                                                                                                                  |
| MODEL CODE           | DILM25-11(RDC24)-PI                                                                                                                                                                     |
| EAN                  | 4015081973729                                                                                                                                                                           |
| PRODUCT LENGTH/DEPTH | 115 mm                                                                                                                                                                                  |
| PRODUCT HEIGHT       | 85 mm                                                                                                                                                                                   |
| PRODUCT WIDTH        | 45 mm                                                                                                                                                                                   |
| PRODUCT WEIGHT       | 0.546 kg                                                                                                                                                                                |
| CERTIFICATIONS       | VDE 0660<br>IEC/EN 60947<br>UL Listed<br>CSA certified<br>UL Category Control No.: NLDX<br>CE marking<br>UL File No.: E29096<br>CSA Class No.: 2411-03, 3211-04<br>CSA File No.: 012528 |
| CATALOG NOTES        | Also tested according to AC-3e.                                                                                                                                                         |



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## Ambient conditions, mechanical

### SHOCK RESISTANCE

5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms  
 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms  
 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms  
 6.5 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms  
 8 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms  
 2 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms

## Communication

### CONNECTION TO SMARTWIRE-DT

In conjunction with DIL-SWD SmartWire DT contactor module  
 Yes

## Climatic environmental conditions

**AMBIENT OPERATING TEMPERATURE - MAX** 60 °C

**AMBIENT STORAGE TEMPERATURE - MAX** 80 °C

**AMBIENT OPERATING TEMPERATURE - MIN** -25 °C

**AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX** 40 °C

**AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN** -25 °C

**AMBIENT STORAGE TEMPERATURE - MIN** -40 °C

**CLIMATIC PROOFING**  
 Damp heat, constant, to IEC 60068-2-78  
 Damp heat, cyclic, to IEC 60068-2-30

## Contacts

**NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)** 3

**NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)** 1

**NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)** 1

**NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)** 1

**NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)** 1

**NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT** 0

## Conventional thermal current I<sub>th</sub>

**CONVENTIONAL  
THERMAL CURRENT I<sub>TH</sub>  
(1-POLE, ENCLOSED)** 90 A

**CONVENTIONAL  
THERMAL CURRENT I<sub>TH</sub>  
(3-POLE, ENCLOSED)** 36 A

**CONVENTIONAL  
THERMAL CURRENT I<sub>TH</sub>  
AT 55°C (3-POLE, OPEN)** 42 A

**CONVENTIONAL  
THERMAL CURRENT I<sub>TH</sub>  
OF MAIN CONTACTS (1-  
POLE, OPEN)** 100 A

## Design verification

### 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.

### 10.2.2 CORROSION RESISTANCE

Meets the product standard's requirements.

### 10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES

Meets the product standard's requirements.

### 10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT

Meets the product standard's requirements.

### 10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS

Meets the product standard's requirements.

### 10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION

Meets the product standard's requirements.

### 10.2.5 LIFTING

Does not apply, since the entire switchgear needs to be evaluated.

### 10.2.6 MECHANICAL IMPACT

Does not apply, since the entire switchgear needs to be evaluated.

### 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

Does not apply, since the

|                                                                 |                                                                    |
|-----------------------------------------------------------------|--------------------------------------------------------------------|
| <b>AGAINST ELECTRIC SHOCK</b>                                   | entire switchgear needs to be evaluated.                           |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>   | Does not apply, since the entire switchgear needs to be evaluated. |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>        | Is the panel builder's responsibility.                             |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                 | Is the panel builder's responsibility.                             |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                 | Is the panel builder's responsibility.                             |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                         | Is the panel builder's responsibility.                             |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b> | Is the panel builder's responsibility.                             |
| <b>HEAT DISSIPATION CAPACITY PDISS</b>                          | 0 W                                                                |

## Electrical rating

|                                                 |       |
|-------------------------------------------------|-------|
| <b>RATED BREAKING<br/>CAPACITY AT 220/230 V</b> | 250 A |
|-------------------------------------------------|-------|

|                                                 |       |
|-------------------------------------------------|-------|
| <b>RATED BREAKING<br/>CAPACITY AT 380/400 V</b> | 250 A |
|-------------------------------------------------|-------|

|                                             |       |
|---------------------------------------------|-------|
| <b>RATED BREAKING<br/>CAPACITY AT 500 V</b> | 250 A |
|---------------------------------------------|-------|

|                                                 |       |
|-------------------------------------------------|-------|
| <b>RATED BREAKING<br/>CAPACITY AT 660/690 V</b> | 150 A |
|-------------------------------------------------|-------|

|                                          |       |
|------------------------------------------|-------|
| <b>RATED INSULATION<br/>VOLTAGE (UI)</b> | 690 V |
|------------------------------------------|-------|

|                                                                                |       |
|--------------------------------------------------------------------------------|-------|
| <b>RATED MAKING<br/>CAPACITY UP TO 690 V<br/>(COS PHI TO IEC/EN<br/>60947)</b> | 350 A |
|--------------------------------------------------------------------------------|-------|

|                                                                            |      |
|----------------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-1,<br/>380 V, 400 V, 415 V</b> | 45 A |
|----------------------------------------------------------------------------|------|

|                                                                            |      |
|----------------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-3,<br/>220 V, 230 V, 240 V</b> | 25 A |
|----------------------------------------------------------------------------|------|

|                                                                            |      |
|----------------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-3,<br/>380 V, 400 V, 415 V</b> | 25 A |
|----------------------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-3,<br/>440 V</b> | 25 A |
|--------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-3,<br/>500 V</b> | 25 A |
|--------------------------------------------------------------|------|

|                                                                     |      |
|---------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-3,<br/>660 V, 690 V</b> | 15 A |
|---------------------------------------------------------------------|------|

|                                                                            |      |
|----------------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-4,<br/>220 V, 230 V, 240 V</b> | 13 A |
|----------------------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-4,<br/>440 V</b> | 13 A |
|--------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-4,<br/>500 V</b> | 13 A |
|--------------------------------------------------------------|------|

|                                                                     |      |
|---------------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT AC-4,<br/>660 V, 690 V</b> | 10 A |
|---------------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT DC-1,<br/>110 V</b> | 40 A |
|--------------------------------------------------------------|------|

|                                                              |      |
|--------------------------------------------------------------|------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT DC-1,<br/>220 V</b> | 40 A |
|--------------------------------------------------------------|------|

## Electro magnetic compatibility

|                             |                         |
|-----------------------------|-------------------------|
| <b>EMITTED INTERFERENCE</b> | According to EN 60947-1 |
|-----------------------------|-------------------------|

|                                  |                         |
|----------------------------------|-------------------------|
| <b>INTERFERENCE<br/>IMMUNITY</b> | According to EN 60947-1 |
|----------------------------------|-------------------------|

|                                                                  |         |
|------------------------------------------------------------------|---------|
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT DC-1, 60<br/>V</b>      | 40 A    |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 240 V, 50<br/>HZ</b>     | 8.5 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 380/400<br/>V, 50 HZ</b> | 11 kW   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 415 V, 50<br/>HZ</b>     | 14.5 kW |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 220/230<br/>V, 50 HZ</b> | 3.5 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 240 V, 50<br/>HZ</b>     | 4 kW    |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 415 V, 50<br/>HZ</b>     | 6.5 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 440 V, 50<br/>HZ</b>     | 7 kW    |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 500 V, 50<br/>HZ</b>     | 8 kW    |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 660/690<br/>V, 50 HZ</b> | 8.5 kW  |
| <b>RATED OPERATIONAL<br/>VOLTAGE (UE) AT AC -<br/>MAX</b>        | 690 V   |

## Features & functions

|                        |                                                                  |
|------------------------|------------------------------------------------------------------|
| <b>FITTED WITH:</b>    | Mirror contact<br>Suppressor circuit in<br>actuating electronics |
| <b>NUMBER OF POLES</b> | Three-pole                                                       |

## General information

|                                 |                                                                             |
|---------------------------------|-----------------------------------------------------------------------------|
| <b>APPLICATION</b>              | Contactors for Motors                                                       |
| <b>CONNECTION</b>               | Push in terminals                                                           |
| <b>DEGREE OF PROTECTION</b>     | IP20                                                                        |
| <b>LIFESPAN, MECHANICAL</b>     | 10,000,000 Operations (DC<br>operated)                                      |
| <b>OPERATING FREQUENCY</b>      | 5000 mechanical<br>Operations/h (DC<br>operated)                            |
| <b>OVERVOLTAGE<br/>CATEGORY</b> | III                                                                         |
| <b>POLLUTION DEGREE</b>         | 3                                                                           |
| <b>PRODUCT CATEGORY</b>         | Contactors                                                                  |
| <b>PROTECTION</b>               | Finger and back-of-hand<br>proof, Protection against<br>direct contact when |

| Magnet system                                                    |                                                                                             |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| ARCING TIME                                                      | 10 ms                                                                                       |
| DUTY FACTOR                                                      | 100 %                                                                                       |
| PICK-UP VOLTAGE                                                  | 24 - 27 V DC (RDC 24)<br>0.7 - 1.2 V DC x U <sub>c</sub><br>0.7 - 1.2 V DC x U <sub>s</sub> |
| POWER CONSUMPTION (PICK-UP) AT DC                                | 12 W                                                                                        |
| POWER CONSUMPTION (SEALING) AT DC                                | 0.9 W                                                                                       |
| RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX                    | 27 V                                                                                        |
| RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN                    | 27 V                                                                                        |
| SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX | 47 ms                                                                                       |
| SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX | 30 ms                                                                                       |

|                                        |                                                                                                                                                                                                                           |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | actuated from front (EN 50274)                                                                                                                                                                                            |
| RATED IMPULSE WITHSTAND VOLTAGE (UIMP) | 8000 V AC                                                                                                                                                                                                                 |
| SUITABLE FOR                           | Also motors with efficiency class IE3                                                                                                                                                                                     |
| UTILIZATION CATEGORY                   | AC-4: Normal AC induction motors: starting, plugging, reversing, inching<br>AC-3: Normal AC induction motors: starting, switch off during running<br>AC-1: Non-inductive or slightly inductive loads, resistance furnaces |
| VOLTAGE TYPE                           | DC                                                                                                                                                                                                                        |
| FRAME SIZE                             | FS2                                                                                                                                                                                                                       |

| Motor rating                                      |        |
|---------------------------------------------------|--------|
| ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE | 2 HP   |
| ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE | 7.5 HP |
| ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE | 5 HP   |
| ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE | 10 HP  |
| ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE | 15 HP  |
| ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE | 20 HP  |

## Safety

### SAFE ISOLATION

400 V AC, Between coil and contacts, According to EN 61140  
400 V AC, Between the contacts, According to EN 61140

## Short-circuit rating

### SHORT-CIRCUIT CURRENT RATING (BASIC RATING)

5 kA, 125 A max. fuse CLASS RK5, SCCR (UL/CSA)  
5 kA, 125 A max. CB, SCCR (UL/CSA)

### SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)

100 kA, 70 A CLASS J max. fuse, SCCR (UL/CSA)  
30 kA, 30 A CLASS RK5, SCCR (UL/CSA)  
65 kA, 32 A max. CB, SCCR (UL/CSA)

### SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)

100 kA, 70 A CLASS J max. fuse, SCCR (UL/CSA)  
30 kA, 30 A CLASS RK5, SCCR (UL/CSA)

### SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V

100 A gG/gL

### SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V

50 A gG/gL

### SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V

35 A gG/gL

### SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V

35 A gG/gL

## Terminal capacities

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SCREWDRIVER SIZE</b>                                              | 3 x 0.5 mm, Terminal screw<br>3.0 x 0.5 mm, Terminal screw                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH UNISOLATED FERRULE)</b>          | 1 x (0.75 - 2.5) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Main cables<br>1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (0.5 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (0.5 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (1 - 6) mm <sup>2</sup> , Main cables<br>2 x (1 - 6) mm <sup>2</sup> , Main cables  |
| <b>TERMINAL CAPACITY (FLEXIBLE)</b>                                  | 1 x (0.5 - 2.5) mm <sup>2</sup><br>1 x (1 - 10) mm <sup>2</sup><br>2 x (0.5 - 2.5) mm <sup>2</sup><br>2 x (1-6) mm <sup>2</sup>                                                                                                                                                                                                                                                                                                               |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH ULTRASONIC WELDED CABLE END)</b> | 1 x (0.75 - 2.5) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Main cables<br>1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (0.5 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (0.5 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (1 - 10) mm <sup>2</sup> , Main cables<br>2 x (1 - 6) mm <sup>2</sup> , Main cables |
| <b>TERMINAL CAPACITY (SOLID)</b>                                     | 1 x (1 - 6) mm <sup>2</sup><br>2 x (1 - 6) mm <sup>2</sup><br>1 x (0.5 - 0.25) mm <sup>2</sup><br>2 x (0.5 - 2.5) mm <sup>2</sup> , Control circuit cables                                                                                                                                                                                                                                                                                    |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>                     | 2 x (1 - 4) mm <sup>2</sup><br>1 x (1 - 6) mm <sup>2</sup><br>2 x (0.5 - 1.5) mm <sup>2</sup> , Main cables<br>1 x (0.5 - 1.5) mm <sup>2</sup> , Control circuit cables                                                                                                                                                                                                                                                                       |
| <b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>                        | 18 - 8, Main cables<br>20 - 14                                                                                                                                                                                                                                                                                                                                                                                                                |

## Resources

|                            |                                                                                                                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CATALOGUES                 | <a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>                                                                                                         |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-contactor-declaration-of-conformity-uk251219en.pdf</a><br><a href="#">eaton-contactor-declaration-of-conformity-eu250736en.pdf</a>                                           |
| DRAWINGS                   | <a href="#">eaton-contactors-dimensions-008.eps</a>                                                                                                                                            |
| ECAD MODEL                 | <a href="#">ETN.199288.edz</a>                                                                                                                                                                 |
| INSTALLATION INSTRUCTIONS  | <a href="#">IL034094ZU</a>                                                                                                                                                                     |
| INSTALLATION VIDEOS        | <a href="#">WIN-WIN with push-in technology</a><br><a href="#">eaton-iec-contactors-mcad-drawings-dil-m8-38-pi.dwg</a><br><a href="#">eaton-iec-contactors-mcad-3d-models-dil-m8-38-pi.stp</a> |
| WIRING DIAGRAMS            | <a href="#">eaton-contactors-wiring-diagram-2100swi-124.eps</a>                                                                                                                                |

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



**Eaton Corporation plc** Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com

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