# Motor contactors Type MCI-DOL

## Features

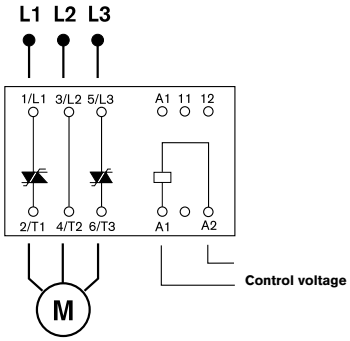
- *Direct on-line starting*
- *Long life:*
  *AC-3: 25 mill. cycles*
  *AC-4: 5 mill. cycles*
- *Universal control voltage*
- *LED status indicator*
- *Built-in varistor protection*
- *Unlimited start/stop operations per hour*
- *IP 20 protection*
- *Compact DIN-rail mountable design*

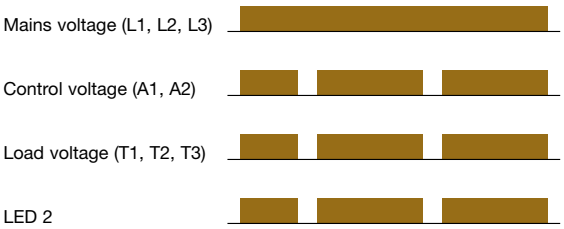
| | |
|---|---|
| **General** | |
| Type | **MCI 15 DOL** |
| Product description | MCI-DOL electronic motor contactors are designed for fast and demanding switching of 3-phase AC motors. The contactors are burst fired for reduced EMC emission, have LED status indicators and accept universal control voltages. |
| Typical applications | Cranes, packaging machines and other applications with frequent inching, jogging or plugging and where a high number of operating cycles is essential. |
| Design standard | IEC/EN 60947-4-2 |
| Approvals | CE, CSA and NRTL/C |
| **Output specifications** | |
| Operational current<br>AC 3 (motor load)<br>AC 4 (motor load, inching, jogging) | <br>15 A<br>15 A |
| Motor size at:<br>208-240 VAC<br>400-480 VAC<br>550-600 VAC | <br>0.1-4.0 kW (0.18-5 HP)<br>0.1-7.5 kW (0.18-10 HP)<br>0.1-11 kW (0.18-15 HP) |
| Leakage current | 5 mA a.c. max. |
| Minimum operational current | 50 mA |
| Overload current profile | X-Tx: 8-3 |
| Overload relay trip class | Class 10 |
| Semiconductor protection fusing<br>type 1 co-ordination<br>type 2 co-ordination | <br>50 A gL/gG<br>1800 $A^2S$ |
| **Thermal specifications and environment** | |
| Power dissipation, continuous duty | 2 W/A |
| Power dissipation, intermittent duty | 2 W/A × duty cycle |
| Ambient temperature range | 0 to 40 °C |
| Cooling method | Natural convection |
| Mounting | Vertical (see also general mounting instructions) |
| Max. ambient temperature with limited current | 60 °C, see derating for high temperatures in chart below |
| Storage temperature range | -20 to 80 °C |
| Protection degree/pollution degree | IP 20/3 |
| **Insulation specifications** | |
| Rated insulation voltage, $U_i$ | 660 V |
| Rated impulse withstand voltage, $U_{imp}$ | 4 kV |
| Installation category | III |
| **Control specifications** | |
| Control voltage (+/- 10%) | 24-480 V a.c., 24-60 V d.c. |
| Drop-out voltage | 5 V a.c./d.c. |
| Control current/power max. | 15 mA / 2 VA |
| Response time max. | 70 ms |
| EMC immunity | Meets requirements of EN 50082-1 and EN 50082-2 |

## Selection guide

| Operational voltage | Motor current max. | Motor power max. | Control voltage | Dimensions | Type | Code no. |
|---|---|---|---|---|---|---|
| 208-240 V a.c. | 15 A | 4.0 kW/5.5 HP | 24-480 V a.c./24-60 V d.c. | 45 mm module | MCI 15 DOL | 037N0054 |
| 400-480 V a.c. | 15 A | 7.5 kW/10 HP | 24-480 V a.c./24-60 V d.c. | 45 mm module | MCI 15 DOL | 037N0055 |
| 550-600 V a.c. | 15 A | 11 kW/15 HP | 24-480 V a.c./24-60 V d.c. | 45 mm module | MCI 15 DOL | 037N0056 |

## Wiring and functional diagrams




## Motor overload and short circuit protection

Overload and short circuit protection of the motor is easily achieved by installing a circuit breaker on the supply side of the motor controller.

Select the circuit breaker from the selection table according to the rated nominal operational current of the motor.

For information on prospective short circuit current please refer to data for circuit breaker.

| Motor full load current A | Danfoss CTI 25M/CTI 25MB circuit breaker Code no. |
|---|---|
| 0.1-0.16 | 047B3140 |
| 0.16-0.25 | 047B3141 |
| 0.25-0.4 | 047B3142 |
| 0.4-0.63 | 047B3143 |
| 0.63-1.0 | 047B3144 |
| 1.0-1.6 | 047B3145 |
| 1.6-2.5 | 047B3153 |
| 2.5-4.0 | 047B3154 |
| 4-6.3 | 047B3155 |
| 6-10 | 047B3156 |
| 10-16 | 047B3157 |

## Operating at high temperatures

If the unit is placed inside small cabinets, care must be taken to avoid exceeding the max. ambient temperature. Otherwise the current must be derated according to table.

| Ambient temperature | MCI 15 |
|---|---|
| 40 °C | 15 A |
| 50 °C | 12.5 A |
| 60 °C | 10.0 A |

*For further information on dimensions, mounting and temperature overload protection see common information, page 26.*