# MC Contactors

IMO

*Technical Datasheet*

## Key Features

- Up to 1200A AC3
- Up to 1350A AC1
- DIN Rail Mounting up to AC3 74A
- International Approvals
- Data according to IEC 947 / EN 60947

## Options & Ordering Codes

**MC** - **10N** - **S** - **10** - **24AC**

**Series**

| | |
|---|---|
| Standard Contactor | MC |

**AC3 Rating**

| | |
|---|---|
| 4kW / 10A | 10N |
| 5.5kW / 14A | 14N |
| 7.5kW / 18A | 18N |
| 11kW / 22A | 22N |

**Switching Type**

| | |
|---|---|
| Standard | S |

**Aux. Contact Configuration**

| | |
|---|---|
| 10 | Normally Open (NO) |
| 01 | Normally Closed (NC) |

**Coil Voltage***

| | |
|---|---|
| 24AC | 24DC |
| 110AC | 48DC |
| 230AC | 110DC |
| 400AC | |

* Other coil voltages available. Please contact IMO for more information.

## Technical Data acc. to IEC / EN 60947-4-1

| Part Number | | | MC10N-S-10 | MC14N-S-10 | MC18N-S-10 | MC22N-S-10 |
|---|---|---|---|---|---|---|
| Main Contact Ratings | AC1 $I_e$ (=$I_{th}$) open at 40°C | | 25A | 25A | 32A | 32A |
| | AC2, AC3, 380-440V | | 4kW / 10A | 5.5kW / 14A | 7.5kW / 18A | 11kW / 22A |
| | AC2, AC3, 500-690V | | 5.5kW | 7.5kW | 10kW | 10kW |
| | DC1 / 2 / 5, 24VDC | | 20A | 25A | 32A | 32A |
| | Fuse "Typ1" gl. (gG) | | 63A max. | 63A max. | 63A max. | 63A max. |
| | Rated Insulation Voltage $U_i$*4 | | 690V~ | 690V~ | 690V~ | 690V~ |
| | Making Capacity $I_{eff}$ at $U_e$=690V~ | | 200A | 200A | 200A | 200A |
| | Breaking Capacity $I_{eff}$ 400V~ | | 180A | 180A | 200A | 200A |
| | cosθ= 0.65 500V~ | | 150A | 150A | 180A | 180A |
| Max. Ambient Temp | Operation Open | | -40 to +60°C (+90°C)*1 | | | |
| | Operation Enclosed | | -40 to +40°C | | | |
| | with Thermal Overload Relay Open | | -25 to +60°C | | | |
| | with Thermal Overload Relay Enclosed | | -25 to +40°C | | | |
| | Storage | | -50 to +90°C | | | |
| Freqency of Operations z Ops/hr | Switching Without Load | | 10,000 | | | |
| | AC3, $I_e$ | | 600 | | | |
| | AC4, $I_e$ | | 120 | | | |
| | DC3, $I_e$ | | 600 | | | |
| Switching Time at Control Voltage Us ±10%*2, *3 | AC Operated | Make Time | 8 - 16ms | | | |
| | | Release Time | 5 - 13ms | | | |
| | | Arc Duration | 10 - 15ms | | | |
| | DC Operated | Make Time | 8 - 12ms | | | |
| | | Release Time | 8 - 13ms | | | |
| | | Arc Duration | 10 - 15ms | | | |
| Mech. Life | AC Operated | | $10 \times 10^6$ | | | |
| | DC Operated with Economy Resistor | | $10 \times 10^6$ | | | |
| Curr. Heat Loss | Power Loss Per Pole ($I_e$/AC3 400V) | | 0.21W | 0.35W | 0.5W | 0.75W |
| | Contact Resistance Per Pole | | 2.1mΩ | 1.8mΩ | 1.5mΩ | 1.5mΩ |
| Shock Resistance acc. to IEC68-2-27 - 20ms Sine Wave NO | | | 10g | | | |
| Shock Resistance acc. to IEC68-2-27 - 20ms Sine Wave NC | | | 6g | | | |

*1 With reduced control voltage range 0.9 up to 1.0 x Us and with reduced rated current Ie / AC1 according to Ie / AC3
*2 Total breaking time = release time + arc duration
*3 Values for delay of the release time of the make contact and the make time of the break contact will be increased if magnet coils are protected against voltage peaks with integrated suppressor
*4 Suitable at 690V for earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard industry): $U_{imp}$=8kV. Data for other conditions upon request


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IMO

*Technical Datasheet*

## Technical Data continued acc. to IEC / EN 60947-4-1

| Part Number | | MC10N-S-10..+MCA.. | MC14N-S-10..+MCA.. | MC18N-S-10..+MCA.. | MC22N-S-10..+MCA.. |
|---|---|---|---|---|---|
| Aux Contact Ratings MCA10 (NO) MCA01 (NC) | AC1 $I_e$ (=$I_{th}$) open at 40°C | 10A | 10A | 10A | 10A |
| | AC15, 220-240V | 3A | 3A | 3A | 3A |
| | AC15, 380-440V | 2A | 2A | 2A | 2A |
| | Fuse "Typ1" gl. (gG) | 20A max. | 20A max. | 20A max. | 20A max. |

**NOTE:** Maximum number of auxiliaries that can be added to AC operated contactors is 4. Maximum that can be added to DC operated contactors is 3.

## Cable Cross Sections

| | Contacts | Coils |
|---|---|---|
| Solid Strand (mm²) | 0.75 - 6.0 | 0.75 - 2.5 |
| Flexible Strand (mm²) | 1.0 - 4.0 | 0.5 - 2.5 |
| Solid Strand (AWG) | 18 - 10 | 14 - 12 |
| Flexible Strand (AWG) | 18 - 10 | 18 - 12 |
| Cables per Clamp | 1 | 2 |
| Terminal Screws | M3.5 | M3.5 |
| Screwdriver | Pozidrive Pz2 | Pozidrive Pz2 |
| Tightening Torque (Nm) | 0.8 - 1.4 | 0.8 - 1.4 |
| Tightening Torque (lb.inch) | 7 - 12 | 7 - 12 |

## Coil

| | AC Operated | DC Operated |
|---|---|---|
| Operation Range | 0.85 - 1.1 | 0.8 - 1.1 |
| Inrush | 33 - 45VA | 75W |
| Sealed | 7 - 10VA | 2W |

## Weights & Dimensions

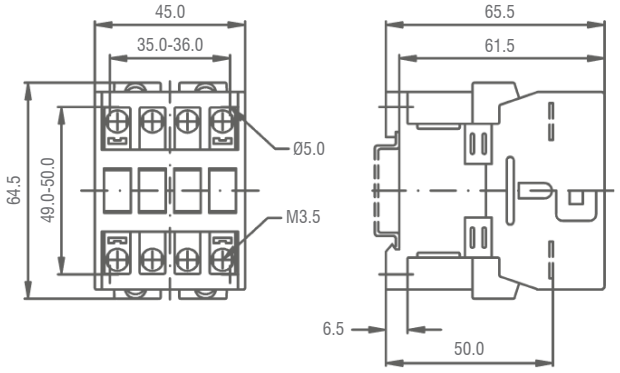
| | AC Operated | DC Operated |
|---|---|---|
| Single Unit (inc. packaging) | 0.23kg | 0.25kg |
| Dimensions | 67 x 46 x 67mm | 70 x 47 x 85mm |

## Resistance to Climatic Conditions acc. to IEC60068

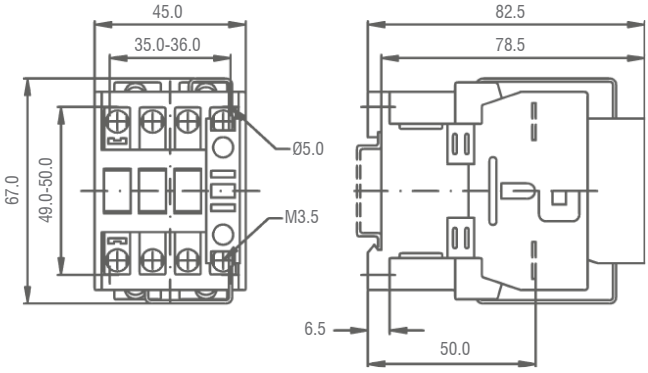
Open- type devices are climate-resistant in the constant climate according to IEC60068-2-78 (this is a climate with an ambient temperature of 40°C and an atmospheric humidity of 90 to 95%). Enclosed devices are climate-resistant in an alternating climate accordingto IEC 68-2-30 (this is a moist alternating climate with a 24-hour cycle between climates with an ambient temperature of 25°C, and an atmospheric humidity of 95 to 100% and an ambient temperature of 40°C, and an atmospheric humidity of 90 to 96% in the presence of condensation during rises in temperature). Note: Maximum operating altitude of 2000m above sea level.

## Dimensions (mm)

### AC Operated

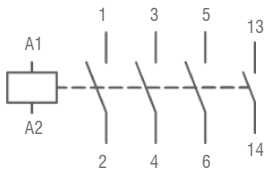



### DC Operated

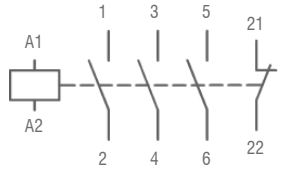



## Wiring Diagrams

### AC Operated

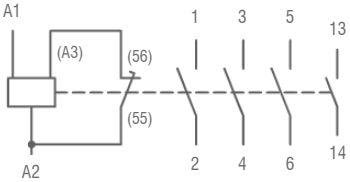



13-14 Normally Open (NO) Auxiliary

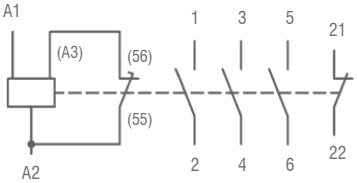



21-22 Normally Closed (NC) Auxiliary

### DC Operated

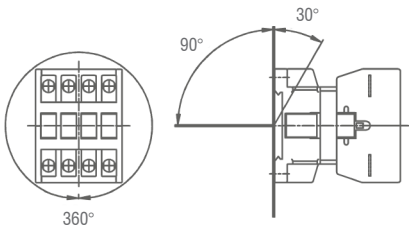



13-14 Normally Open (NO) Auxiliary




21-22 Normally Closed (NC) Auxiliary

## Mounting Position



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