Low Voltage Switching Gears

Finally Low Voltage Switching Gears joining into the OMRON's Panel Solution portfolio

- Push-In Plus technology allows easy wiring
- Unified width (45 mm) among Magnetic Contactors, Thermal Relay and MMS for space-saving
- Applicable to a wide range of motor applications in every industry
New Value For Control Panels

Control Panels: The Heart of Manufacturing Sites.
Evolution in control panels results in large evolution in production facilities.
And if control panel design, control panel manufacturing processes, and human interaction with them are innovated,
control panel manufacturing becomes simpler and takes a leap forward.
OMRON will continue to achieve a control panel evolution and process innovation through many undertakings starting
with the shared Value Design for Panel *1 concept for the specifications of products used in control panels.

*1 Value Design for Panel
Our shared Value Design for Panel (herein after referred to as “Value Design”) concept for the specifications of products used in control panels will create new value to our customer’s control panels.
Combining multiple products that share the Value Design concept will further increase the value provided to control panels.
A wide product lineup of Control Panel Solution that cover even motor control contributes to TCO*1 reduction in control panel manufacturing.

Main Features of Value Design

**Saving Space**
- Unified slim size*2
- Side-by-side mounting at an ambient temperature of 55°C*3

**Workload Reduction**
- Push-In Plus technology is used*2
- No retightening required

**Lead Time Reduction**
- Electrical control CAD Library
- Certification for CE, UL, and CSA

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*1. TCO: Total Cost of Ownership. Total cost from control panel design / production to operation / maintenance.
*2. Expect for some products.
*3. Applicable only within the same series.
To further improve control panels with newly added

Magnetic Contactor (Contactor)  J7KC

Best match for a motor drive (AC3 Class) and a primary side of drive control equipment

Thermal Overload Relay  J7TC

Protects loads from burning damage by detecting overload

Compact
The widths of all series models are unified to 45 mm. Compactly mountable in a control panel

Conform to Main Safety Standards

World’s smallest\(^1\)

67.5 mm

45 mm

Magnetic Starters
Combination example (Magnetic Contactor + Thermal Overload Relay)

Conform to Main Safety Standards

Conform to Main Safety Standards

Mirror contact mechanism  Supports safety applications

High endurance  One million times or more of electrical endurance\(^2\)

Other models

Reversing Magnetic Contactor (Contactor)  J7KCR

Reversible wiring (main circuit, control circuit), with interlock mechanism. Appropriate for forward/reverse control of motors, and plugging control.

Auxiliary Relay (Contactor Relay)  J7KCA

The contactor relay with the same size as the Magnetic Contactor J7KC. Includes a linked contact mechanism.

\(^1\) Based on June 2019 OMRON investigation. On the Push-In models.

\(^2\) Shutting off by thermal overload relay is excluded.
Low Voltage Switch Gears for motor control

Manual Motor Starter  J7MC

MMS is mainly used to Motor Breaker Application and provide protection from short-circuit, overload and phase failures.

High tripping capacity
Shutting off the large current at short-circuit accidents.

At AC400 V
(Standard type) 25, 50, 100 kA
(High performance type) 50, 100 kA

Conform to Main Safety Standards

Space-saving design helps downsize control panels.

- Breaker + Magnetic Starters
- Manual Motor Starters + Magnetic Contactor

* OMRON investigation
Total solution for motor applications

New lineup of ON/OFF controllable Low Voltage Switching Gears supports total motor application, in addition to inverters and servos.

PCB assembly production line

Connection example

Breaker for wires
Magnetic Contactor J7KC
Thermal Overload Relay J7TC
Motor

Manual Motor Starters J7MC
Magnetic Contactor J7KC
Motor

Mounter positioning
PWB adsorption Solder printing
Solder printing
Printing positioning
Adsorption High frequency
Motor
Compressor
Conveyor drive
Packaging machine
in addition to inverter and servos
**Product lineup**

<table>
<thead>
<tr>
<th>Model</th>
<th>Magnetic Contactor</th>
<th>Thermal Overload Relay</th>
<th>Manual Motor Starters</th>
</tr>
</thead>
<tbody>
<tr>
<td>J7KC</td>
<td></td>
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<tr>
<td>J7TC</td>
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<tr>
<td>J7MC</td>
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</tbody>
</table>

- **Number of poles**
  - J7KC: –
  - J7TC: 0.1~13 A
  - J7MC: 0.16~20 A

- **Rated current**
  - J7KC: 15 A
  - J7TC: 0.1~13 A
  - J7MC: 0.16~20 A

- **Degree of protection**
  - IP20

- **Three-phase squirrelcage motor**
  - 200-240 V: 2.2 KW (12 A)
  - 380-440 V: 5.5 KW (12 A)
  - 500-550 V: 5.5 KW (9 A)

- **Dimensions (W × H × D)(mm)**
  - J7KC: 45 × 67.5 × 46
  - J7TC: 45 × 79.5 × 55.5
  - J7MC: Rocker: 45 × 130 × 71
           Rotary: 45 × 130 × 91

- **Safety standard**
  - JIS, IEC(CE), c-UL, TÜV, GB/T(CCC)