

■ Description

FUJI offers a new motor control system – DUO series for the international market, designed to IEC standards. The DUO series adds a new family of compact, high-performance combination starters to its IEC-compliant manual motor starters BM3 series, magnetic contactors SC series and thermal overload relays TK series to form a complete line-up of motor control products.

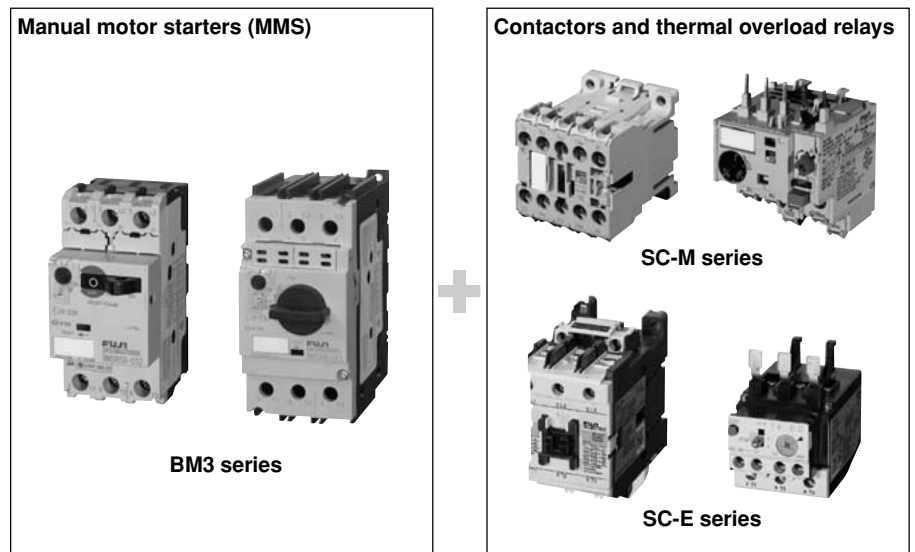
- Short-circuit protective coordination between protective devices and the equipment to be protected
- Conformance to IEC, UL, CSA and other international standards
- Safety and ecological consideration – safety features such as terminals with finger protection, use of recyclable materials, and resources-saving

Manual motor starters (MMS) BM3 series

New circuit breakers for motor use that provide optimal protection by integrating the functions of a molded case circuit breaker and thermal overload relay into a highly compact unit. *See page 02/2*

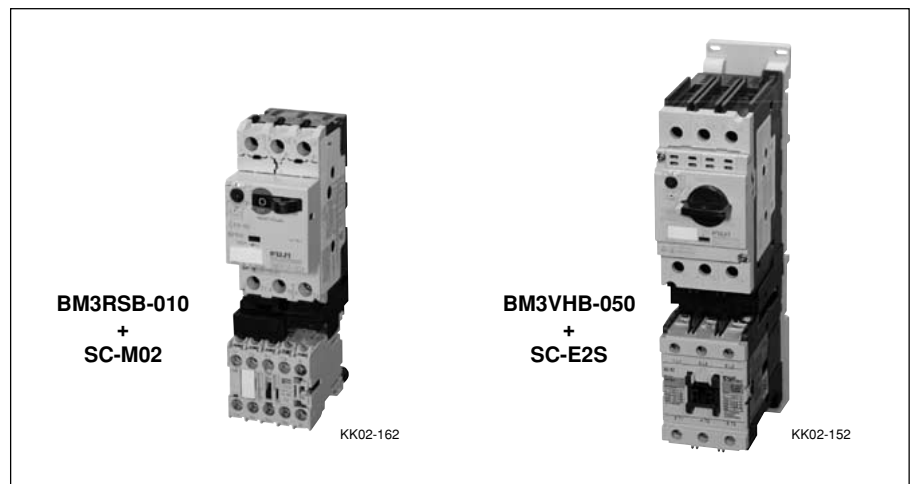
Contactors and thermal overload relays SC-M and SC-E series

SC-M series compact magnetic contactors and ideal thermal overload relays for small capacity motor control for 400V AC, 2.2 to 4kW. SC-E series magnetic contactors and thermal overload relays featuring terminals with finger protection for 400V AC, 4 to 75kW. *See page 02/32*



Combination starters

The ability to configure combination starters for compact, reliable motor protection by combining a manual motor starter and a magnetic contactor. *See page 02/74*



DUO series Manual Motor Starters

General information

Manual motor starters BM3 series

■ Description

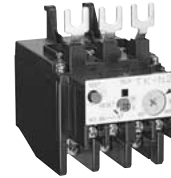
Conforming to international standards and combining compactness with high breaking performance, this versatile series features leading-edge motor protection. Molded case circuit breaker and thermal overload relay functions are integrated into a highly compact unit.

■ Features

- Eight types available in two different frame sizes-32AF for the 45mm width and 63AF for the 55mm width
- A wide motor capacity range up to 30kW (400/415V AC, 63A)
- High breaking capacity
Standard breaking capacity: 25, 50, 100kA 400V AC
High breaking capacity: 50, 100kA 400V AC
- Adjustable thermal-magnetic trip types
32AF: BM3RSB and BM3RHB
63AF: BM3VSB and BM3VHB
- Instantaneous trip types
32AF: BM3RSBK and BM3RHBK
63AF: BM3VSBK and BM3VHBK
- Common accessories to reduce inventory
- Short-circuit protective coordination
IEC 60947-4-1 Type1, 2
- Standards
IEC 60947-1, 60947-2, 60947-4-1, UL 508, CSA C22.2 No.14
- Ecological design
Recyclable thermoplastic resin used in plastic parts
Indication of materials used
Cadmium-free contacts
- Both rocker and rotary handle
- ON/OFF and trip state indication for all frames



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Circuit breaker functions

- Short-circuit protection
- Overcurrent protection
- Line protection

Thermal overload relay functions

- Overload protection
- Phase-loss protection
- Rated current adjustment
- Ambient temperature compensation



Compactness:
57% reduction

Wiring work:
50% reduction

Manual motor starters BM3 series



KK01-317

BM3RSB and BM3RSBK

Rated current: 0.16 to 32A
Rated insulation voltage: 690V
Operation handle: Rocker handle
Breaking capacity Icu at 400/415V:
• 100kA up to 10A
• 50kA up to 13A
• 25kA up to 32A



AF01-47

BM3VSB and BM3VSBK

Rated current: 10 to 63A
Rated insulation voltage: 1000V
Operation handle: Rotary handle
Breaking capacity Icu at 400/415V:
• 100kA up to 10A
• 50kA up to 13A
• 25kA up to 63A



AF01-42

BM3RHB and BM3RHBK

Rated current: 0.16 to 32A
Rated insulation voltage: 690V
Operation handle: Rotary handle
Breaking capacity Icu at 400/415V:
• 100kA up to 13A
• 50kA up to 32A



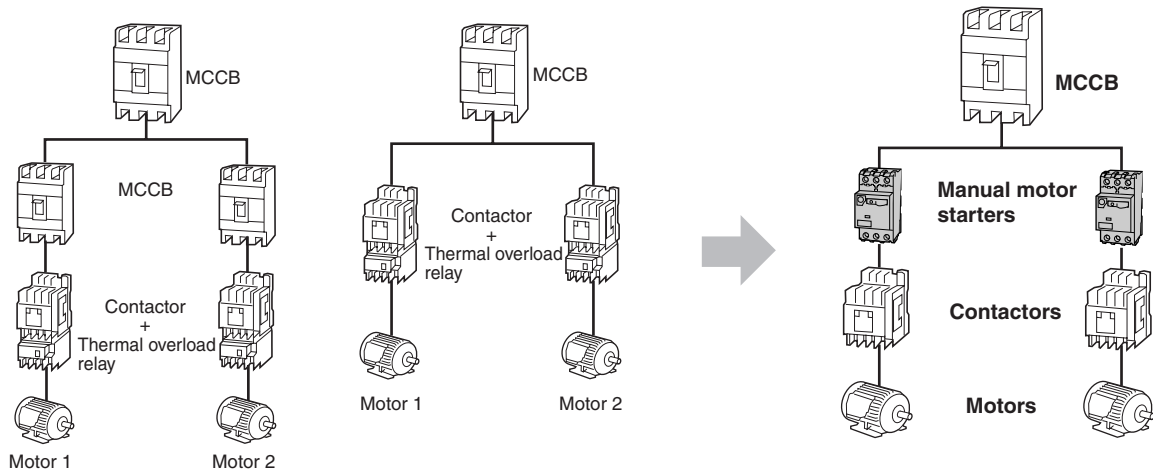
AF01-43

BM3VHB and BM3VHBK

Rated current: 10 to 63A
Rated insulation voltage: 1000V
Operation handle: Rotary handle
Breaking capacity Icu at 400/415V:
• 100kA up to 13A
• 50kA up to 63A

■ Manual motor starters for branch circuit protection

The MMS provides reliable protection for overloading and short-circuiting in motor branch circuits.



Typical problem in the conventional system



Solution by using MMS system

Short-circuit breaking protection

When numerous small and medium motor loads exist in a circuit requiring high breaking capacity, there is no high-breaking capacity circuit breaker with a small rated current for short-circuit protection.

The MMS can be used in 100kA short-circuit current circuits for three-phase, 240V motors with rated capacity up to 15kW, and in 50kA short-circuit current circuits for three-phase, 415V motors with rated capacity up to 30kW.

Back-up breaking system

When a back-up MCCB is installed upstream to solve the problem described in "short-circuit breaking protection" above, an occurrence of short-circuit failure in a single load circuit also trips the upstream breaker and stops the other operating load circuits.

Despite their compact size, the 32AF and 63AF MMS provide high-performance short-circuit current breaking. They eliminate the need for an upstream circuit breaker for back-up use.

Overload protection

Motor protection breakers cannot be adjusted to match the rated current of the motor being protected.

Equipped with a wide-range current adjustment dial (with maximum/minimum ratio of 1.4 to 1.6), the MMS easily adjusts to match the rated current of the motor, for optimum protection.

Control panel size

Considerable space is required to install a back-up circuit breaker or a combination starter consisting of a circuit breaker and a thermal overload relay. As a result, the panel size has to be increased.

The compact size of the MMS, including thermal overload relay functions, enables a smaller installation area with less wiring space, for a reduction in panel size.

DUO series Manual Motor Starters

General information

■ Accessories

A wide variety of accessories enables a flexible response to changes in specifications.

Snap-on fittings speed up mounting.

