




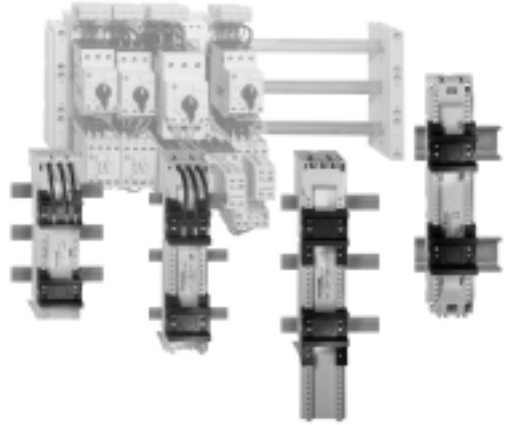
Starters, Mounting System

Quick Selection Table

| |  |  |  |
|--|--|--|--|
| Bulletin No. | 190E/191E | 190S/191S | 103T/107T |
| Type | Eco-Starter | Compact-Starter | Starter |
| Features | <ul style="list-style-type: none"> • Short Circuit Protection • Motor Overload Protection • Visible Trip Indication • High Current Limiting • High Switching Capacity • Field or Factory Installed Accessories | <ul style="list-style-type: none"> • Short Circuit Protection • Motor Overload Protection • Visible Trip Indication • High Current Limiting • High Switching Capacity • Field or Factory Installed Acc. • Enhanced unitary appearance | <ul style="list-style-type: none"> • Short Circuit Protection • Motor Overload Protection • Visible Trip Indication • High Current Limiting • High Switching Capacity • Field or Factory Installed Accessories |
| Current Range | 0.1...25 A | 0.1...45 A | 0.1...100 A |
| Motor Range (Max. Kilowatt) | 11 kW at 400V | 22 kW at 400V | 45 kW at 400V |
| Short Circuit Motor Protection | ✓ | ✓ | ✓ |
| Overload Protection: Trip Class | 10 | 10, 15, 20, 30 | 10, 15, 20, 30 |
| Mounting Options | | | |
| Standard Busbar Mount | ✓ | ✓ | ✓ |
| Iso Busbar Mount | ✓ | ✓ | ✓ |
| Panel Mount | ✓ | ✓ | ✓ |
| Standards Compliance | | | |
| UL 508 and CSA 22.2, No. 14, Self-Protected Combination Motor Controller IEC 60947-4, CE | ✓ | ✓ | ✓ |
| Major Components | | | |
| 140M Motor Protection Circuit Breaker | ✓ | ✓ | ✓ |
| 100C Contactors | ✓ | ✓ | ✓ |
| 190E Overload Relays | — | — | ✓ |
| Accessories | | | |
| Lockable Knobs | ✓ | ✓ | ✓ |
| Aux/Trip Contacts for Circuit Breaker | ✓ | ✓ | ✓ |
| Aux Contacts for Contactor | ✓ | ✓ | ✓ |
| UV/Shunt Trip for Circuit Breaker | ✓ | ✓ | ✓ |
| Page Number | Page 56 | Page 58 | Page 60 |

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A
Starters, Mounting System
Quick Selection Table

Mounting System



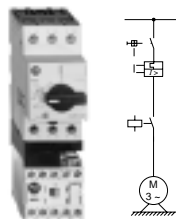
| | |
|------------------------------|--|
| Bulletin No. | 141A |
| Type | Mounting System |
| Features | <ul style="list-style-type: none"> • Standard Busbar Mounting • Iso™ Busbar Mounting – A Rockwell Exclusive feature • Panel Mounting – DIN rail or screw mounting • Supply Modules for easy 3 phase power connections • Circuit Breaker modules for mounting 140U breakers directly onto the busbars <ul style="list-style-type: none"> - For protecting the Busbar - For feeding other loads from the Busbar • MCS Star software for easy configuration/layout/design of Busbar Assemblies |
| Mounting Options: | |
| Standard Busbar Mount | ✓ |
| Iso Busbar Mount | ✓ |
| Panel Mount | ✓ |
| Page Number | Page 64 |

Starters, Mounting System

Product Selection: Bulletin 190E

Direct On-Line Eco Starters

- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Accessories: Bulletin 140M circuit breakers and 100-M mini-contactors
- Completely assembled with main current connections
- Reversing starters include main current connections
- IEC and UL/CSA compliant
- **Mounting version:**
- Snap on 1 top hat rail 35 mm



190E...

Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
Verify that the circuit breaker can be set to the rated motor current!

| Standard Motors AC-3, 3phase | 400 / 415V | | Motor Current Setting Range | Magnetic Release Operating Current | Bulletin 190E Direct On-Line Starters | | |
|---------------------------------|------------|------------|--------------------------------|---------------------------------------|--|---------|-----|
| | Type 1 | Type 2 | | | Cat. No. | | PQ |
| [kW] | I_q [kA] | I_q [kA] | [A] | [A] | | | |
| 0.02 | 65 | 65 | 0.1...0.16 | 2.1 | 190E-MN⊗ | 2 -CA16 | B |
| 0.06 | 65 | 65 | 0.16...0.25 | 3.3 | 190E-MN⊗ | 2 -CA25 | B |
| 0.09 | 65 | 65 | 0.25...0.4 | 5.2 | 190E-MN⊗ | 2 -CA40 | B |
| 0.18 | 65 | 65 | 0.4...0.63 | 8.2 | 190E-MN⊗ | 2 -CA63 | B |
| 0.25 | 65 | 65 | 0.63...1.0 | 13 | 190E-MN⊗ | 2 -CB10 | B |
| 0.55 | 65 | 65 | 1.0...1.6 | 21 | 190E-MN⊗ | 2 -CB16 | B 1 |
| 0.75 | 65 | 50 | 1.6...2.5 | 33 | 190E-MN⊗ | 2 -CB25 | B |
| 1.5 | 65 | — | 2.5...4.0 | 52 | 190E-MN⊗ | 2 -CB40 | B |
| 2.2 | 65 | — | 4.0...6.3 | 82 | 190E-MN⊗ | 2 -CB63 | B |
| 3.0 | 65 | — | 6.3...10 | 130 | 190E-MN⊗ | 2 -CC10 | B |
| 5.5 | 50 | 50 | 10...12 | 208 | 190E-PN⊗ | 2 -CC16 | B |

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

① Auxiliary Contacts for Contactors

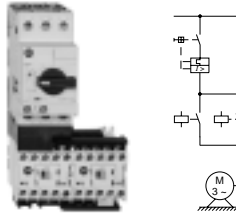
| Type | Options | Auxiliary Contact Variants |
|------|---------|----------------------------|
| 190E | 1 | 1 N.C. |
| | 2 | 1 N.O. |

② Auxiliary Contacts + Trip contacts for Circuit Breakers (Front mounting)

| Options | Auxiliary Contact Variants |
|---------|------------------------------|
| A | 1 N.C. |
| B | 1 N.O. |
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |
| S | 1 N.O. + 1 N.O. trip contact |

See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Eco Reversing Starters



191E...

Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
 Verify that the circuit breaker can be set to the rated motor current!

| Standard Motors AC-3, 3phase | 400 / 415V | | Motor Current Setting Range | Magnetic Release Operating Current | Bulletin 191E Reversing Starters | | | |
|---------------------------------|------------|------------|--------------------------------|---------------------------------------|-------------------------------------|---|-------|-----|
| | Type 1 | Type 2 | | | Cat. No. | | PQ | |
| [kW] | I_q [kA] | I_q [kA] | [A] | [A] | | | | |
| 0.02 | 65 | 65 | 0.1...0.16 | 2.1 | 191E-MN⊗ | 1 | -CA16 | B |
| 0.06 | 65 | 65 | 0.16...0.25 | 3.3 | 191E-MN⊗ | 1 | -CA25 | B |
| 0.09 | 65 | 65 | 0.25...0.4 | 5.2 | 191E-MN⊗ | 1 | -CA40 | B |
| 0.18 | 65 | 65 | 0.4...0.63 | 8.2 | 191E-MN⊗ | 1 | -CA63 | B |
| 0.25 | 65 | 65 | 0.63...1.0 | 13 | 191E-MN⊗ | 1 | -CB10 | B |
| 0.55 | 65 | 65 | 1.0...1.6 | 21 | 191E-MN⊗ | 1 | -CB16 | B 1 |
| 0.75 | 65 | 50 | 1.6...2.5 | 33 | 191E-MN⊗ | 1 | -CB25 | B |
| 1.5 | 65 | — | 2.5...4.0 | 52 | 191E-MN⊗ | 1 | -CB40 | B |
| 2.2 | 65 | — | 4.0...6.3 | 82 | 191E-MN⊗ | 1 | -CB63 | B |
| 3.0 | 65 | — | 6.3...10 | 130 | 191E-NN⊗ | 1 | -CC10 | B |
| 5.5 | 50 | 50 | 10...12 | 208 | 191E-PN⊗ | 1 | -CC16 | B |

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

❶ **Auxiliary Contacts for Contactors**

| Type | Options | Auxiliary Contact Variants |
|------|---------|---------------------------------------|
| 191E | | 1 N.C. is used for electric interlock |
| | 1 | 1 N.C. |
| | 5 | 1 N.O. + 2 N.C. |
| | 6 | 2 N.O. + 1 N.C. |

191E Reversing Starters:

Starters with AC-control **with** mechanical interlock

Starters with DC-control only **without** mechanical interlock

❷ **Auxiliary Contacts + Trip contacts for Circuit Breakers**
 (Front mounting)

| Options | Auxiliary Contact Variants |
|---------|------------------------------|
| A | 1 N.C. |
| B | 1 N.O. |
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |
| S | 1 N.O. + 1 N.O. trip contact |

See Publication 141A-SG001B-EN-P for complete product information
 PQ = Package Quantity

Starters, Mounting System

Product Selection: Bulletin 190S

Direct On-Line Starters

- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Accessories: Bulletin 140M circuit breakers and 100-C contactors
- Complete unit, ready for connection with internal wiring
- All control connections at the bottom of the starter
- Removable cover
- IEC and UL/CSA compliant
- **Mounting versions:**
 - Snap on 2 (1) top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



190S...



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
Verify that the circuit breaker can be set to the rated motor current!

| Standard Motors AC-3, 3phase | 400 / 415V | Motor Current Setting Range | Magnetic Release Operating Current | Bulletin 190S Direct On-Line Starters | | | PQ |
|---------------------------------|------------|--------------------------------|---------------------------------------|--|-------|---|----|
| | Type 2 | | | Cat. No. | | | |
| [kW] | I_q [kA] | [A] | [A] | | | | |
| 0.02 | 65 | 0.1...0.16 | 2.1 | 190S-AN⊗ 2 | -CA16 | C | |
| 0.06 | 65 | 0.16...0.25 | 3.3 | 190S-AN⊗ 2 | -CA25 | C | |
| 0.09 | 65 | 0.25...0.4 | 5.2 | 190S-AN⊗ 2 | -CA40 | C | |
| 0.18 | 65 | 0.4...0.63 | 8.2 | 190S-AN⊗ 2 | -CA63 | C | |
| 0.25 | 65 | 0.63...1.0 | 13 | 190S-AN⊗ 2 | -CB10 | C | |
| 0.55 | 65 | 1.0...1.6 | 21 | 190S-AN⊗ 2 | -CB16 | C | |
| 0.75 | 65 | 1.6...2.5 | 33 | 190S-AN⊗ 2 | -CB25 | C | |
| 1.5 | 50 | 2.5...4.0 | 52 | 190S-AN⊗ 2 | -CB40 | C | |
| 1.5 | 65 | 2.5...4.0 | 52 | 190S-AN⊗ 2 | -DB40 | C | |
| 2.2 | 50 | 4.0...6.3 | 82 | 190S-AN⊗ 2 | -CB63 | C | |
| 2.2 | 65 | 4.0...6.3 | 82 | 190S-AN⊗ 2 | -DB63 | C | |
| 4.0 | 50 | 6.3...10 | 130 | 190S-AN⊗ 2 | -CC10 | C | |
| 4.0 | 65 | 6.3...10 | 130 | 190S-AN⊗ 2 | -DC10 | C | |
| 5.5 | 50 | 10...16 | 208 | 190S-BN⊗ 2 | -CC16 | C | |
| 5.5 | 65 | 10...16 | 208 | 190S-BN⊗ 2 | -DC16 | C | |
| 7.5 | 50 | 10...16 | 208 | 190S-CN⊗ 2 | -CC16 | C | |
| 6.3 | 65 | 10...16 | 208 | 190S-CN⊗ 2 | -DC16 | C | |
| 9.0 | 65 | 14.5...20 | 260 | 190S-DN⊗ 2 | -DC20 | C | |
| 11.0 | 65 | 18...25 | 325 | 190S-DN⊗ 2 | -DC25 | C | |
| 15.0 | 65 | 25...32 | 416 | 190S-EN⊗ 3 | -FC32 | C | |
| 18.5 | 65 | 32...45 | 585 | 190S-FN⊗ 3 | -FC45 | C | |
| 22.0 | 65 | 32...45 | 585 | 190S-GN⊗ 3 | -FC45 | C | |

① ② ③

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

① Auxiliary Contacts for Contactors

| Type | Options | Auxiliary Contact Variants |
|------------|---------------------------------------|----------------------------|
| 190S-A...D | 1 | 1 N.O. |
| | 2 | 1 N.O. |
| 190S-E...G | 3 | 1 N.O. + 1 N.C. |
| 191S-A...D | 1 N.C. is used for electric interlock | |
| | 3 | 1 N.O. + 1 N.C. |

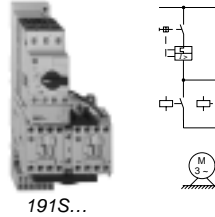
② Auxiliary Contacts + Trip Contacts for Circuit Breakers (Front mounting)

| Options | Auxiliary Contact Variants |
|---------|------------------------------|
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |
| S | 1 N.O. + 1 N.O. trip contact |

See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A Starters, Mounting System Product Selection: Bulletin 191S

Reversing Starters



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
Verify that the circuit breaker can be set to the rated motor current!

| Standard Motors AC-3, 3phase | 400 / 415V | Motor Current Setting Range | Magnetic Release Operating Current | Bulletin 191S Reversing Starters | | | PQ |
|---------------------------------|------------|--------------------------------|---------------------------------------|-------------------------------------|---|-------|----|
| | Type 2 | | | Cat. No. | | | |
| [kW] | I_q [kA] | [A] | [A] | | | | |
| 0.02 | 65 | 0.1...0.16 | 2.1 | 191S-AN⊗ | 3 | -CA16 | C |
| 0.06 | 65 | 0.16...0.25 | 3.3 | 191S-AN⊗ | 3 | -CA25 | C |
| 0.09 | 65 | 0.25...0.4 | 5.2 | 191S-AN⊗ | 3 | -CA40 | C |
| 0.18 | 65 | 0.4...0.63 | 8.2 | 191S-AN⊗ | 3 | -CA63 | C |
| 0.25 | 65 | 0.63...1.0 | 13 | 191S-AN⊗ | 3 | -CB10 | C |
| 0.55 | 65 | 1.0...1.6 | 21 | 191S-AN⊗ | 3 | -CB16 | C |
| 0.75 | 65 | 1.6...2.5 | 33 | 191S-AN⊗ | 3 | -CB25 | C |
| 1.5 | 50 | 2.5...4.0 | 52 | 191S-AN⊗ | 3 | -CB40 | C |
| 1.5 | 65 | 2.5...4.0 | 52 | 191S-AN⊗ | 3 | -DB40 | C |
| 2.2 | 50 | 4.0...6.3 | 82 | 191S-AN⊗ | 3 | -CB63 | C |
| 2.2 | 65 | 4.0...6.3 | 82 | 191S-AN⊗ | 3 | -DB63 | C |
| 4.0 | 50 | 6.3...10 | 130 | 191S-AN⊗ | 3 | -CC10 | C |
| 4.0 | 65 | 6.3...10 | 130 | 191S-AN⊗ | 3 | -DC10 | C |
| 5.5 | 50 | 10...16 | 208 | 191S-BN⊗ | 3 | -CC16 | C |
| 5.5 | 65 | 10...16 | 208 | 191S-BN⊗ | 3 | -DC16 | C |
| 7.5 | 50 | 10...16 | 208 | 191S-CN⊗ | 3 | -CC16 | C |
| 6.3 | 65 | 10...16 | 208 | 191S-CN⊗ | 3 | -DC16 | C |
| 9.0 | 65 | 14.5...20 | 260 | 191S-DN⊗ | 3 | -DC20 | C |
| 11.0 | 65 | 18...25 | 325 | 191S-DN⊗ | 3 | -DC25 | C |

⊗ Control Voltage Selection Codes, see Pages 28

Options, continued

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

⊕ Options Select only one option per group.
Multiple options separated by hyphens.

| Options | Description |
|---------|--|
| | Accessories for Circuit Breaker |
| -KN | Lockable twist knob, black |
| -KY | Lockable twist knob, red / yellow |
| -TE | Terminal adapter, requirement for self-protected combination starters (UL 508 construction type E) |
| -V | Surge suppressor varistor 12...575V AC / 12...350V DC |
| | Control Plug |
| -SP | Plug-in connector for control circuit |

⊕ Options, continued

| Options | Description |
|---------|--|
| | Accessories for Contactors |
| -JE | Electronic interface (for coil voltages 110...240V AC, control voltages 18...30V DC) |
| -D | Surge suppressor diode: 12...250V DC |
| -R | Surge suppressor RC: 24...480V AC |
| -V | Surge suppressor varistor 12...575V AC / 12...350V DC |

Bulletin 191S Reversing Starters:

Mechanical interlock included. Reversing starters can only be delivered with AC-control. (Electronic interfaces can be used alternatively)

Starters, Mounting System

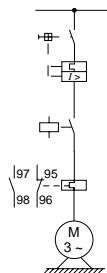
Product Selection: Bulletin 103T with 140M and 193-EA

3-Component Direct On-Line Starters

- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Starters with Bulletin 140M or 140-CMN circuit breakers, 100-C contactors and
- 193-EA electronic overload relays
- Completely assembled and wired on Bulletin 141A mounting system
- IEC and UL/CSA compliant
- **Mounting versions:**
 - T** - MCS Standard Busbar Module, pluggable on busbar systems with 60 mm pole centre spacing
 - S** - MCS Iso™ Busbar Module, pluggable on busbar systems with 60 mm pole centre spacing
 - W** - Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



103T...



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
Verify that the rated motor current is covered by the admissible setting range!

| Standard Motors AC-3, 3phase | 400 / 415V | | Admissible Setting Range | Magnetic Release Operating Current | Bulletin 103T Direct On-Line Starters | | | | | | |
|---------------------------------|------------|------------|-----------------------------|---------------------------------------|--|---|-----|-------|---|------|---|
| | Type 1 | Type 2 | | | Cat. No. | | | | | PQ | |
| [kW] | I_q [kA] | I_q [kA] | [A] | [A] | | | | | | | |
| 0.06 | 100 | 65 | 0.1...0.32 | 5.2 | 103T-A | S | ⊗ 2 | -QA40 | C | -A1A | 1 |
| 0.25 | 100 | 65 | 0.32...1.0 | 13 | 103T-A | S | ⊗ 2 | -QB10 | C | -A1C | |
| 0.75 | 100 | 65 | 1.0...2.5 | 32 | 103T-A | S | ⊗ 2 | -QB25 | C | -A1D | |
| 1.5 | 100 | 65 | 1.6...5.0 | 82 | 103T-A | S | ⊗ 2 | -RB63 | C | -A1E | |
| 4.0 | 100 | 65 | 3.7...10 | 130 | 103T-A | S | ⊗ 2 | -RC10 | C | -A1F | |
| 5.5 | 100 | 65 | 3.7...12 | 208 | 103T-B | S | ⊗ 2 | -RC16 | C | -A1G | |
| 7.5 | 100 | 65 | 12...16 | 208 | 103T-C | S | ⊗ 2 | -RC16 | C | -A1G | |
| 11.0 | 65 | 65 | 12...25 | 325 | 103T-D | S | ⊗ 2 | -RC25 | C | -A1G | |
| 15.0 | 65 | 65 | 12...32 | 416 | 103T-E | S | ⊗ 2 | -TC32 | C | -A1H | |
| 18.5 | 65 | 65 | 12...37 | 585 | 103T-F | S | ⊗ 2 | -TC45 | C | -A1H | |

① ② ③ ④ ⑤

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

① Mounting Versions:

| Options | Description |
|---------|---|
| T | MCS Standard Busbar Module |
| S | MCS Iso™ Busbar Module (up to 22 kW only) |
| W | MCS Mounting Module (up to 22 kW only) |

② Auxiliary Contacts for Contactors

| Options | Auxiliary Contact Variants |
|-------------------------------------|---|
| 103T Direct On-Line Starters | |
| 2 | 1 N.O. |
| 4 | 2 N.O. |
| 107T Reversing Starters | |
| 3 | 1 N.O. + 1 N.C. |
| 7 | 2 N.O. + 2 N.C. (with plug-in connector: 1 N.C. to wire directly.) |

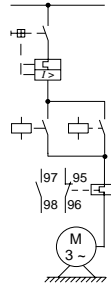
See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A
Starters, Mounting System
Product Selection: Bulletin 107T with 140M and 193-EA

3-Component Reversing Starters



107T...



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
 Verify that the rated motor current is covered by the admissible setting range!

| Standard Motors AC-3, 3phase | 400 / 415V | | Admissible Setting Range | Magnetic Release Operating Current | Bulletin 107T Reversing Starters | | | | PQ | |
|---------------------------------|------------|------------|-----------------------------|---------------------------------------|-------------------------------------|----------|----------|----------|----|----------|
| | Type 1 | Type 2 | | | Cat. No. | | | | | |
| [kW] | I_q [kA] | I_q [kA] | [A] | [A] | | | | | | |
| 0.06 | 100 | 65 | 0.1...0.32 | 5.2 | 107T-A | S ⊗ 3 | -QA40 | C -A1A | 1 | |
| 0.25 | 100 | 65 | 0.32...1.0 | 13 | 107T-A | S ⊗ 3 | -QB10 | C -A1C | | |
| 0.75 | 100 | 65 | 1.0...2.5 | 32 | 107T-A | S ⊗ 3 | -QB25 | C -A1D | | |
| 1.5 | 100 | 65 | 1.6...4.0 | 82 | 107T-A | S ⊗ 3 | -RB63 | C -A1E | | |
| 4.0 | 100 | 65 | 3.7...10 | 130 | 107T-A | S ⊗ 3 | -RC10 | C -A1F | | |
| 5.5 | 100 | 65 | 3.7...12 | 208 | 107T-B | S ⊗ 3 | -RC16 | C -A1F | | |
| 7.5 | 100 | 65 | 12...16 | 208 | 107T-C | S ⊗ 3 | -RC16 | C -A1G | | |
| 11.0 | 65 | 65 | 12...25 | 325 | 107T-D | S ⊗ 3 | -RC25 | C -A1G | | |
| 15.0 | 65 | 65 | 12...32 | 416 | 107T-E | S ⊗ 3 | -TC32 | C -A1H | | |
| 18.5 | 65 | 65 | 12...37 | 585 | 107T-F | S ⊗ 3 | -TC45 | C -A1H | | |
| | | | | | 1 | 2 | 3 | 4 | | 5 |

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options, continued

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

⊕ **Auxiliary Contacts for Circuit Breaker**

| Options | Auxiliary Contact Variants |
|---------|----------------------------|
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |

⊕ **Electronic Overload Relay**

| Options | Description |
|---------|---|
| -A1... | Electronic overload relays: Manual reset |
| -A4... | Automatic / manual reset |

⊕ **Options** Select only one option per group.

Multiple options separated by hyphens

| Options | Description |
|--|--|
| Accessories for Contactors | |
| -JE | Electronic interface (for coil voltages 110...240V AC, control voltages 18...30V DC) |
| -D | Surge suppressor diode (12...250V DC) |
| -R | Surge suppressor (RC 24...480V AC) |
| -V | Surge suppressor varistor 12...575V AC / 12...350V DC |
| Accessories for Mounting System | |
| -MS | Micro switch (with Iso™ Modules only) |

See Publication 141A-SG001B-EN-P for complete product information
 PQ = Package Quantity

Starters, Mounting System

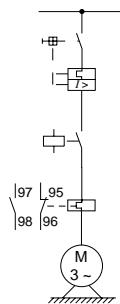
Product Selection: Bulletin 103T with 140M and 193-EC

3-Component Direct On-Line Starters

- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Starters with Bulletin 140M or 140-CMN circuit breakers, 100-C contactors and
- 193-EC electronic motor protection relay
- Integrated Device Net interface
- Completely assembled and wired on Bulletin 141A mounting system
- IEC and UL/CSA compliant
- **Mounting versions:**
 - T** - MCS Standard Busbar Module, pluggable on busbar systems with 60 mm pole centre spacing
 - S** - MCS Iso™ Busbar Module, pluggable on busbar systems with 60 mm pole centre spacing
 - W** - Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



103T...



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
Verify that the rated motor current is covered by the admissible setting range!

| Standard Motors AC-3, 3phase | 400 / 415V | | Admissible Setting Range | Magnetic Release Operating Current | Bulletin 103T Direct On-Line Starters | | | | | PQ | | |
|---------------------------------|---------------------|---------------------|-----------------------------|---------------------------------------|--|---|---|---|-------|----|------|---|
| | Type 1 | Type 2 | | | Cat. No. | | | | | | | |
| [kW] | I _q [kA] | I _q [kA] | [A] | [A] | | | | | | | | |
| 0.55 | 100 | 65 | 0.4...2.0 | 32 | 103T-A | S | ⊗ | 2 | -QB25 | C | -C1P | 1 |
| 1.5 | 100 | 65 | 1.0...5.0 | 82 | 103T-A | S | ⊗ | 2 | -RB63 | C | -C1A | |
| 4.0 | 100 | 65 | 3.0...10 | 130 | 103T-A | S | ⊗ | 2 | -RC10 | C | -C1B | |
| 5.5 | 100 | 65 | 3.0...15 | 208 | 103T-B | S | ⊗ | 2 | -RC16 | C | -C1B | |
| 7.5 | 100 | 65 | 5.0...16 | 208 | 103T-C | S | ⊗ | 2 | -RC16 | C | -C1C | |
| 11 | 65 | 65 | 5.0...25 | 325 | 103T-D | S | ⊗ | 2 | -RC25 | C | -C1C | |
| 15 | 65 | 65 | 9.0...32 | 416 | 103T-E | S | ⊗ | 2 | -TC32 | C | -C1D | |
| 18.5 | 65 | 65 | 9.0...45 | 585 | 103T-F | S | ⊗ | 2 | -TC45 | C | -C1D | |

① ② ③ ④ ⑤

⊗ **Control Voltage Selection Codes**, see Pages 28-29

Options

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

① Mounting Versions:

| Options | Description |
|----------|--|
| T | MCS Standard Busbar Module |
| S | MCS Iso™ Busbar Module (up to 22 kW only) |
| W | MCS Mounting Module (up to 22 kW only) |

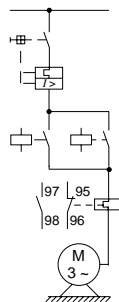
② Auxiliary Contacts for Contactors

| Options | Auxiliary Contact Variants |
|-------------------------------------|---|
| 103T Direct On-Line Starters | |
| 2 | 1 N.O. |
| 4 | 2 N.O. |
| 107T Reversing Starters | |
| 3 | 1 N.O. + 1 N.C. |
| 7 | 2 N.O. + 2 N.C. (with plug-in connector: 1 N.C. to wire directly.) |

See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A
Starters, Mounting System
Product Selection: Bulletin 107T with 140M and 193-EC

3-Component Reversing Starters



Note: Line voltage and short-circuit coordination see MCS Star or catalog A114
 Verify that the rated motor current is covered by the admissible setting range!

| Standard Motors AC-3, 3phase | 400 / 415V | | Admissible Setting Range | Magnetic Release Operating Current | Bulletin 107T Reversing Starters | | | | | PQ | | |
|---------------------------------|------------|------------|-----------------------------|---------------------------------------|-------------------------------------|---|---|---|-------|----|------|---|
| | Type 1 | Type 2 | | | Cat. No. | | | | | | | |
| [kW] | I_q [kA] | I_q [kA] | [A] | [A] | | | | | | | | |
| 0.55 | 100 | 65 | 0.4...2.0 | 32 | 107T-A | S | ⊗ | 3 | -QB25 | C | -C2P | 1 |
| 1.5 | 100 | 65 | 1.0...5.0 | 82 | 107T-A | S | ⊗ | 3 | -RB63 | C | -C2A | |
| 4.0 | 100 | 65 | 3.0...10 | 130 | 107T-A | S | ⊗ | 3 | -RC10 | C | -C2B | |
| 5.5 | 100 | 65 | 3.0...15 | 208 | 107T-B | S | ⊗ | 3 | -RC16 | C | -C2B | |
| 7.5 | 100 | 65 | 5.0...16 | 208 | 107T-C | S | ⊗ | 3 | -RC16 | C | -C2C | |
| 11 | 65 | 65 | 5.0...25 | 325 | 107T-D | S | ⊗ | 3 | -RC25 | C | -C2C | |
| 15 | 65 | 65 | 9.0...32 | 416 | 107T-E | S | ⊗ | 3 | -TC32 | C | -C2D | |
| 18.5 | 65 | 65 | 9.0...45 | 585 | 107T-F | S | ⊗ | 3 | -TC45 | C | -C2D | |

⊗ **Control Voltage Selection Codes**, Pages 28-29

Options, continued

Note: There are different prices for options. Please contact your local Rockwell Automation sales office.

④ **Auxiliary Contacts for Circuit Breaker**

| Options | Auxiliary Contact Variants |
|---------|----------------------------|
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |

④ **Electronic Overload Relay**

| Options | Description |
|---------|---|
| -C1... | Electronic motor protection relays: 2 inputs, 1 output (for direct on-line starters only) |
| -C2... | 4 inputs, 2 outputs, built-in ground fault sensor, PTC thermistor input |

⑤ **Options**

Select only one option per group.
 Multiple options separated by hyphens

| Options | Description |
|--|--|
| Accessories for Contactors | |
| -D | Surge suppressor diode (12...250V DC) |
| -R | Surge suppressor (RC 24...480V AC) |
| -V | Surge suppressor varistor 12...575V AC / 12...350V DC |
| Accessories for Mounting System | |
| -MS | Micro switch (with Iso™ Modules only) |

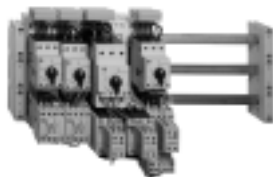
See Publication 141A-SG001B-EN-P for complete product information
 PQ = Package Quantity







Starters, Mounting System

Product Selection: Bulletin 141A Mounting System

MCS Iso™ Busbar Modules

- Consists of a device adapter plate carrying the load feeder components, which plugs onto a busbar module sitting on the busbars
- System finger proof with load feeders removed
- Test position with load circuit isolated
- Preferably for use with control plug (please order separately)
- Modules with current feed supply the load current by means of wire
- connections matched to MCS motor circuit breakers
- Modules can form bigger platforms using the connection clips
- For plugging on 12, 15, 20, 25, 30 mm x 5/10 mm thick busbars respectively



| | Description | Rated Thermal Current I_{th} | Width [mm] | Top Hat Rails | Cat. No. | PQ |
|--|---|--------------------------------|------------|---------------|---------------|----|
|  | MCS Iso™ Busbar Modules 200 mm high • Top hat rails: R = MCS-specific top hat rail | 25 A | 45 | 2R | 141A-SS45RR25 | ☆ |
| | | | 54 | | 141A-SS54RR25 | ☆ |
| | | 45 A | 54 | | 141A-SS54RR45 | ☆ |
| | | | 63 | | 141A-SS63RR45 | 1 |
| | | Without electrical connections | 45 | 141A-SS45R | ☆ | |
| | | | 54 | 141A-SS54R | 1 | |
|  | MCS Iso™ Busbar Modules 260 mm high • Top hat rails: R = MCS-specific top hat rail S = Standard top hat rail | 25 A | 45 | 1R + 1S | 141A-SM45RS25 | 1 |
| | | | 54 | | 141A-SM54RS25 | |
| | | 45 A | 54 | | 141A-SM54RS45 | |
| | | | 63 | | 141A-SM63RS45 | |
| | | Without electrical connections | 45 | 141A-SM45S | | |
| | | | 54 | 141A-SM54S | | |
| | | 63 | 141A-SM63S | | | |
| | | 1S | 45 | 141A-SM45S | | |
| | | | 54 | 141A-SM54S | | |
| | | 63 | 141A-SM63S | | | |
|  | Spacer Module (For covering the busbars when spacing load feeders) • For spacing of load feeders by 9 mm e.g. for improved cooling. Including connection clips. | | | | 141A-AS9B | 10 |
| | | | | | | |
|  | Spacer Modules (For covering the busbars when spacing load feeders and for spacing of device adapter plate) • For spacing of load feeders by 9 mm e.g. for improved cooling. Including connection clips. | | | | 141A-AS9S | 10 |
| | | | | | | |
|  | Micro Switch with wire connections • Contact  • To wire in series with the contactor coils drops out when unplugging the device adapter plate. | | | | 141A-AS | 10 |
| | | | | | | |

| Options | | Cat. No. Suffix | Description | Ordering Example |
|---------|--------------|-----------------|--------------------------|------------------|
| ☆ | Unit Package | No Entry | ⊆ Single pack (1 piece) | 141A-SS45RR25 |
| | | M | ⊆ Multi-pack (10 pieces) | 141A-SS45RR25M |



See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A
Starters, Mounting System
Product Selection: Bulletin 141A Mounting System




MCS Standard Busbar Modules >100 A

- Busbar modules > 100 A are screw mounted onto the busbars
- Sliding nuts for matching the fixing positions of components
- Terminal positions available on top or bottom
- For mounting components with current ratings > 100 A (supply and load feeders)



| | Description | Height [mm] | Rated Thermal Current I_{th} | Width [mm] | Wire Size [mm ²] (AWG) | Cat. No. | PQ |
|---|--|-------------|--------------------------------|------------|------------------------------------|-----------------|----|
|  | MCS Standard Busbar Modules with box terminals on top | 222 | 200 A | 108 | 6 ... 70 (AWG 16...00) | 141A-FS108V200T | 1 |
| | | 320 | 250 A | 110 | 35 ... 120 (AWG 2...4/0) | 141A-FL110V250T | |
|  | MCS Standard Busbar Modules with box terminals on bottom | 222 | 200 A | 108 | 6 ... 70 (AWG 16...00) | 141A-FS108V200B | 1 |
| | | 320 | 250 A | 110 | 35 ... 120 (AWG 2...4/0) | 141A-FL110V250B | |

Busbar Components







| | Description | Busbar [mm] | Cat. No. | PQ | |
|---|--|--|---------------------------|-------------|----|
|  | Busbar Supports • 60 mm pole centre spacing • The busbar support can easily be adjusted to the busbar size via the integral slide rail. | 3-pole | 12, 15, 20, 25, 30 x 5/10 | 141A-TR3 | 10 |
| | | 4-pole | | 141A-TR4 | |
| | | 1-pole | | 141A-TR1 | |
|  | Busbar End Covers • Prevents from contact with the busbar ends • The end cover can easily be clipped on the busbar support. | 3-pole | 141A-TR3E | 10 | |
| | | 4-pole | 141A-TR4E | | |
|  | Feeder Busbar Support • For 3-pole supply • 60 mm pole centre spacing | 1.5...16 mm ² (AWG 16...6) | 12, 15, 20, 25, 30 x 5/10 | 141A-TR3F16 | 1 |

See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity

Starters, Mounting System

Product Selection: Bulletin 141A Mounting System

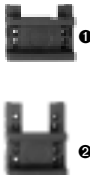

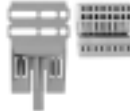


Busbar Components

| | Description | | Busbar [mm] | Cat. No. | PQ |
|--|--|---|-----------------------------------|--------------|----|
|  | Supply Modules • For 3-pole supply | 6...70 mm ² (AWG 10...00) 54 mm wide | 12...30 x 5 or 12...30 x 10 | 141A-VN370 | 1 |
| | | 35...120 mm ² (AWG 2...4/0) 81 mm wide | | 141A-VN3120 | |
| | | 95...185 mm ² (AWG 3/0...MCM 350) 135 mm wide | | 141A-VN3185 | |
| | | 150...300 mm ² (MCM 300...600) 135 mm wide | | 141A-VN3300R | |
| | | Laminated copper: 3 x 20 x 1...10 x 32 x 1 mm 135 mm wide | | 141A-VN3300F | |
|  | Single Terminals • Single terminals for supplying busbars | 2.5...16 mm ² (AWG 14...6) | 12...30 x 5 | 141A-VS116 | 25 |
| | | | 12...30 x 10 | 141A-VS216 | |
| | | 4...35 mm ² (AWG 12...2) | 12...30 x 5 | 141A-VS135 | |
| | | | 12...30 x 10 | 141A-VS235 | |
| | | 16...70 mm ² (AWG 6...00) | 12...30 x 5 | 141A-VS170 | |
| | | | 12...30 x 10 | 141A-VS270 | |
|  | Terminal Cover • Finger protection when busbars supplied with single terminals. • Fixable on busbar with plastic lock. • Height: 180 mm, wide: 54 mm | | 12...30 x 5 or 12...30 x 10 | 141A-BK1 | 1 |
|  | Busbar Connectors • For connection of busbar racks with same dimensions | Distance of systems 5...10 mm | 12...20 x 5 or 12...20 x 10 | 141A-VC3A | 12 |
| | | 13...20 mm | | 141A-VC3B | 6 |
| | | 50...60 mm | 20...30 x 5 or 20...30 x 10 | 141A-VC3C | 3 |
| | | 100...110 mm | | 141A-VC3D | 3 |
|  | Single Pole Busbar Covers • Snap-on profile for single busbars for protection against electric shock. • Length: 1 m, can be cut to length. | | 12...30 x 5 | 141A-BS5 | 10 |
| | | | 12...30 x 10 | 141A-BS10 | |
|  | Three Pole Busbar Shroud • Covers all three busbars for protection against electric shock. • 200 x 1100 mm • Cover to be cut to length | | | 141A-BCF1 | 2 |
| | Busbar Shroud Holder • Use together with busbar shroud (2 required for 1 cover) | | 12...30 x 5 or 12...30 x 10 | 141A-BCF1H | 10 |

See Publication 141A-SG001B-EN-P for complete product information
 PQ = Package Quantity

Bulletin 190E/191E, 190S/191S, 103T/107T, 141A
Starters, Mounting System
Product Selection: Bulletin 141A Mounting System, Accessories

Accessories

| | Description | Size [mm] | Cat. No. | PQ |
|---|--|------------|-------------|----|
|  <p>Device Rails Iso™, standard and mounting modules</p> <ul style="list-style-type: none"> ① R = MCS-specific top hat rail ② S = Standard top hat rail | <p>Plastic top hat rail specific for MCS components</p> <p>Plastic top hat rail standard for universal use</p> <p>Metal top hat rail</p> | 45 | 141A-AHR45 | 10 |
| | | 54 | 141A-AHR54 | |
| | | 63 | 141A-AHR63 | |
| | | 45 | 141A-AHS45 | |
| | | 54 | 141A-AHS54 | |
| | | 63 | 141A-AHS63 | |
| | | 72 | 141A-AHS72 | |
| | | 81 | 141A-AHS81 | |
| | | 90 | 141A-AHM90 | |
| | | 171 | 141A-AHM171 | |
| 252 | 141A-AHM252 | | | |
|  <p>Carrier for Top Hat Rail</p> <ul style="list-style-type: none"> Carrier for top hat rails inclusive screws, fits on the standard top hat rails. For screw mounting of metal top hat rails on bigger devices. | 54 | 141A-AHH54 | 10 | |
|  <p>Control Plugs</p> <ul style="list-style-type: none"> Allows fast and simple connection of control wiring. Comprises plug holders and male and female plug To snap onto Iso™, standard and mounting modules | 8-pole control plug | 141A-APC8 | ☆ | |
| | 10-pole control plug | 141A-APC10 | ☆ | |
| | 12-pole control plug | 141A-APC12 | ☆ | |
|  <p>Control Plug Holder</p> <ul style="list-style-type: none"> Receives Wago control plugs with catches and Wago Cage Clamp connections. To snap onto Iso™, standard or mounting modules | Wago catalog number: female plug 232-2##/026-000 male plug 231-6##/018-000 | 141A-APH | 10 | |
|  <p>Connection Clip</p> <ul style="list-style-type: none"> For joining modules | | 141A-AK | 50 | |
| <p>Instruction label</p> <ul style="list-style-type: none"> Self-adhesive application instruction | | 141A-AI | 10 | |

| Options | Cat. No. Suffix | Description | Ordering Example |
|-----------------------|-----------------|--------------------------|------------------|
| ☆ Unit Package | No Entry | ⊆ Single pack (1 piece) | 141A-APC8 |
| | M | ⊆ Multi-pack (10 pieces) | 141A-APC8M |

See Publication 141A-SG001B-EN-P for complete product information
PQ = Package Quantity