



# MTR2 Series Rolled-Steel AC Motors – 1-Phase

## 56C/56HC Frame TEFC Motors – 1-phase 0.33 to 2 hp

### Features

- Totally Enclosed Fan Cooled (TEFC) enclosure
- IP43 environmental rating
- NEMA 56C or 56HC flange mount (varies by model)
- Rolled steel shell frame / cast aluminum end bell
- Removable base / bolt-on/bolt-off mounting feet
- No mounting orientation restrictions
- Steel fan cover
- Large all-metal capacitor cover with rubber gasket and oversized capacitors
- Large easy-to-wire junction box with rubber gasket
- Heavy duty oversized ball bearings
- High tensile strength steel shaft
- Large Mylar nameplate with easy-to-read wiring diagram
- Electrically reversible
- NEMA design L or N (varies by model)
- Class F winding insulation
- Service Factor: 1.15
- Two year warranty
- CCSAUS certified, CE

### Accessories Available

- Start capacitors (replacement/spare)
- Run capacitors (replacement/spare)
- Centrifugal switches (replacement/spare)
- Stationary switches (replacement/spare)
- Junction boxes (replacement/spare)
- Fans (replacement/spare)
- Fan shrouds (replacement/spare)
- Motor bases (replacement/spare)

### Applications

- Conveyors
- Fans
- Gear reducers
- Pumps



**MTR2 Series 1-phase motor  
(model without run capacitor shown)**

| Motor Specifications – 1-phase MTR2 Series |          |       |          |                 |                                                            |                     |                |            |                    |                     |
|--------------------------------------------|----------|-------|----------|-----------------|------------------------------------------------------------|---------------------|----------------|------------|--------------------|---------------------|
| Part Number                                | Price    | HP    | Base RPM | 1-phase Voltage | Housing                                                    | NEMA Frame          | Service Factor | F.L. Amps  | Approx Weight (lb) | Drawing Links       |
|                                            |          |       |          |                 |                                                            |                     |                | 115V/230V  |                    |                     |
| <a href="#">MTR2-P33-1AB18</a>             | \$211.00 | 1/3   | 1800     | 115/230         | TEFC<br><br>rolled steel frame with cast aluminum end bell | 56C<br>flange mount | 1.15           | 5.2 / 2.6  | 22                 | <a href="#">PDF</a> |
| <a href="#">MTR2-P50-1AB18</a>             | \$233.00 | 1/2   |          |                 |                                                            |                     |                | 7.2 / 3.6  | 25                 | <a href="#">PDF</a> |
| <a href="#">MTR2-P75-1AB18</a>             | \$253.00 | 3/4   |          |                 |                                                            |                     |                | 10.0 / 5.0 | 29                 | <a href="#">PDF</a> |
| <a href="#">MTR2-001-1AB18</a>             | \$259.00 | 1     |          |                 | F1 conduit box location                                    | 56HC                |                | 13.0 / 6.5 | 36                 | <a href="#">PDF</a> |
| <a href="#">MTR2-1P5-1AB18</a>             | \$307.00 | 1-1/2 |          |                 |                                                            |                     |                | 14.5 / 7.3 | 37                 | <a href="#">PDF</a> |
| <a href="#">MTR2-002-1AB18<sup>1</sup></a> | \$356.00 | 2     |          |                 |                                                            |                     |                | 19.6 / 9.8 | 44                 | <a href="#">PDF</a> |
| <a href="#">MTR2-P33-1AB36</a>             | \$211.00 | 1/3   | 3600     | 115/230         | TEFC<br><br>rolled steel frame with cast aluminum end bell | 56C                 | 1.15           | 5.4 / 2.7  | 21                 | <a href="#">PDF</a> |
| <a href="#">MTR2-P50-1AB36</a>             | \$219.00 | 1/2   |          |                 |                                                            |                     |                | 6.5 / 3.3  | 23                 | <a href="#">PDF</a> |
| <a href="#">MTR2-P75-1AB36</a>             | \$242.00 | 3/4   |          |                 |                                                            |                     |                | 9.2 / 4.6  | 27                 | <a href="#">PDF</a> |
| <a href="#">MTR2-001-1AB36</a>             | \$256.00 | 1     |          | 115/230         | F1 conduit box location                                    | 56HC                |                | 11.5 / 5.8 | 30                 | <a href="#">PDF</a> |
| <a href="#">MTR2-1P5-1AB36</a>             | \$281.00 | 1-1/2 |          |                 |                                                            |                     |                | 13.0 / 6.5 | 31                 | <a href="#">PDF</a> |
| <a href="#">MTR2-002-1AB36</a>             | \$330.00 | 2     |          |                 |                                                            |                     |                | 17.0 / 8.5 | 37                 | <a href="#">PDF</a> |

Note: Please review the AutomationDirect Terms & Conditions for warranty and service on this product.

1) If using this motor with 115V, a 30A feed service breaker will be required. The FLA will trip a standard 20A breaker.



# MTR2 Series Rolled-Steel AC Motors – 1-Phase

## 56C/56HC Frame TEFC Motors – 1-phase 0.33 to 2 hp

| Performance Data – 1-phase MTR2 Series |       |             |          |                            |            |              |                |              |             |                     |                   |                                     |
|----------------------------------------|-------|-------------|----------|----------------------------|------------|--------------|----------------|--------------|-------------|---------------------|-------------------|-------------------------------------|
| Part Number                            | HP    | NEMA Design | F.L. RPM | Current @ 115V/230V (Amps) |            |              | Torque (lb-ft) |              |             | F.L. Efficiency (%) | F.L. Power Factor | Rotor Inertia (lb-ft <sup>2</sup> ) |
|                                        |       |             |          | 230V No Load               | Full Load  | Locked Rotor | Full Load      | Locked Rotor | Break -down |                     |                   |                                     |
| 1800 RPM                               |       |             |          |                            |            |              |                |              |             |                     |                   |                                     |
| <a href="#"><u>MTR2-P33-1AB18</u></a>  | 1/3   | N           | 1725     | 2.05                       | 5.2 / 2.6  | 33 / 16      | 1.01           | 3.54         | 2.57        | 63.0                | 0.58              | 0.048                               |
| <a href="#"><u>MTR2-P50-1AB18</u></a>  | 1/2   |             |          | 2.74                       | 7.2 / 3.6  | 44 / 21      | 1.49           | 5.09         | 3.54        | 64.5                | 0.68              | 0.059                               |
| <a href="#"><u>MTR2-P75-1AB18</u></a>  | 3/4   |             |          | 3.14                       | 10.0 / 5.0 | 62 / 30      | 2.26           | 7.06         | 5.16        | 67.0                | 0.71              | 0.074                               |
| <a href="#"><u>MTR2-001-1AB18</u></a>  | 1     |             |          | 4.39                       | 13.0 / 6.5 | 80 / 40      | 3.03           | 9.30         | 8.23        | 70.0                | 0.69              | 0.095                               |
| <a href="#"><u>MTR2-1P5-1AB18</u></a>  | 1-1/2 | L           | 1725     | 5.23                       | 14.5 / 7.3 | 110 / 55     | 4.46           | 8.70         | 10.45       | 77.0                | 0.84              | 0.095                               |
| <a href="#"><u>MTR2-002-1AB18</u></a>  | 2     |             |          | 8.07                       | 19.6 / 9.8 | 152 / 76     | 6.06           | 12.17        | 13.81       | 79.0                | 0.82              | 0.121                               |
| 3600 RPM                               |       |             |          |                            |            |              |                |              |             |                     |                   |                                     |
| <a href="#"><u>MTR2-P33-1AB36</u></a>  | 1/3   | N           | 3450     | 2.14                       | 5.4 / 2.7  | 37 / 19      | 0.50           | 2.18         | 1.96        | 59.5                | 0.72              | 0.031                               |
| <a href="#"><u>MTR2-P50-1AB36</u></a>  | 1/2   |             |          | 2.23                       | 6.5 / 3.3  | 47 / 23      | 0.74           | 2.59         | 2.42        | 63.0                | 0.74              | 0.034                               |
| <a href="#"><u>MTR2-P75-1AB36</u></a>  | 3/4   |             |          | 2.82                       | 9.2 / 4.6  | 66 / 33      | 1.12           | 4.62         | 3.44        | 66.5                | 0.78              | 0.041                               |
| <a href="#"><u>MTR2-001-1AB36</u></a>  | 1     |             |          | 3.04                       | 11.5 / 5.8 | 82 / 41      | 1.50           | 4.48         | 3.83        | 69.5                | 0.80              | 0.047                               |
| <a href="#"><u>MTR2-1P5-1AB36</u></a>  | 1-1/2 | L           | 3450     | 3.90                       | 13.0 / 6.5 | 109 / 55     | 2.21           | 3.22         | 5.08        | 77.0                | 0.94              | 0.047                               |
| <a href="#"><u>MTR2-002-1AB36</u></a>  | 2     |             |          | 4.51                       | 17.0 / 8.5 | 131 / 65     | 3.02           | 4.45         | 6.82        | 79.5                | 0.94              | 0.060                               |



# MTR, MTR2, MTRJ Series AC Motor Accessories – 1-Phase

## 56C/56HC Frame TEFC Motors – 1-phase – 0.33 to 2 hp – Motor Accessories

### Start Capacitors

1-phase motors use capacitors to provide starting torque when power is first applied to the motor. AutomationDirect offers *spare/replacement* starting capacitors for our 1-phase IronHorse motors.

### Run Capacitors

In addition to the start capacitors and centrifugal switches, IronHorse 1-1/2 and 2 hp 1-phase motors also have run capacitors which allow the motors to develop higher running torque, greater efficiency, and improved power factor. We offer *spare/replacement* run capacitors for 1-phase IronHorse motors.



**Start Capacitor**  
**MTA-CAP-02**

**Run Capacitor**  
**MTA-CAP-06**

### Centrifugal Switches

The start capacitors are no longer needed once the motors begin turning, so they are then taken out of the circuit by a centrifugal switch. We also offer *spare/replacement* switches for our motors.

### Stationary Switches

MTR2 series motors have a separate stationary switch that works with the centrifugal switch; both switches are required.

(MTR series motors have only the one centrifugal switch.)



**Junction Box**  
**MTAR-JBOX-56**



**Junction Box**  
**MTA2-JBOX-56**



**Fan**  
**MTAR-FAN-56**



**Fan**  
**MTA2-FAN-56**



**Centrifugal Switch** **MTA-CSW-01**



**Stationary Switch**  
**MTA-CSW-04**



**Fan Shroud**  
**MTAR-SHROUD-56**



**Fan Shroud**  
**MTA2-SHROUD-56**



**Motor Base**  
**MTAR-BASE-56**



**Motor Base**  
**MTA2-BASE-56**



# AC Motor Accessories – 1-Phase

## 56C/56HC Frame TEFC Motors – 1-phase – 0.33 to 2 hp – Motor Accessories

| MTR Series 1-phase Motor Spare/Replacement Parts (NOT for MTR2 Motors)* |         |                    |                  |                               |                                |                                                                  |                          |  |
|-------------------------------------------------------------------------|---------|--------------------|------------------|-------------------------------|--------------------------------|------------------------------------------------------------------|--------------------------|--|
| Part Number                                                             | Price   | Accessory Type     | Capacitance (µF) | Rated Voltage                 | Dimension Height x Ø (in [mm]) | Applicable MTR Motor Number                                      | MTR Motor HP : RPM       |  |
| <a href="#">MTA-CAP-01</a>                                              | \$12.50 | start capacitor    | 200              | 165                           | 3.15 x 1.65 [80.0 x 41.9]      | <a href="#">MTR-P33-1AB18</a>                                    | 1/3 : 1800               |  |
| <a href="#">MTA-CAP-02</a>                                              | \$12.50 | start capacitor    | 250              |                               |                                | <a href="#">MTR-P50-1AB18</a><br><a href="#">MTR-P75-1AB18</a>   | 1/2 : 1800<br>3/4 : 1800 |  |
| <a href="#">MTA-CAP-03</a>                                              | \$12.50 | start capacitor    | 300              |                               |                                | <a href="#">MTR-001-1AB18</a>                                    | 1 : 1800                 |  |
| <a href="#">MTA-CAP-08</a>                                              | \$12.50 | start capacitor    | 400              |                               |                                | <a href="#">MTR-1P5-1AB36</a><br><a href="#">MTRJ-001-1AB36J</a> | 1-1/2 : 3600             |  |
| <a href="#">MTA-CAP-09</a>                                              | Retired | run capacitor      | 35               |                               | 4.0 x 1.8 [101 x 45]           | <a href="#">MTR-1P5-1AB36</a>                                    | 1-1/2 : 3600             |  |
| <a href="#">MTA-CSW-01</a>                                              | Retired | centrifugal switch | n/a              | 250                           | n/a                            | <a href="#">MTR-xxx-1AB18</a>                                    | all 1800 rpm             |  |
| <a href="#">MTA-CSW-02</a>                                              | Retired |                    |                  | <a href="#">MTR-1P5-1AB36</a> |                                | all 3600 rpm                                                     |                          |  |
| <a href="#">MTAR-BASE-56</a>                                            | \$14.50 | motor base         |                  | n/a                           |                                | <a href="#">MTR-xxx-1ABxx</a>                                    | all                      |  |
| <a href="#">MTAR-FAN-56</a>                                             | Retired | fan                |                  |                               |                                |                                                                  |                          |  |
| <a href="#">MTAR-JBOX-56</a>                                            | Retired | junction box       |                  |                               |                                |                                                                  |                          |  |
| <a href="#">MTAR-SHROUD-56</a>                                          | \$14.50 | fan shroud         |                  |                               |                                |                                                                  |                          |  |

\* These accessories are spare/replacement components only for MTR series IronHorse motors.  
Accessories for MTR series motors are not compatible with MTR2 series motors.

| MTR2 Series 1-phase Motor Spare/Replacement Parts (NOT for MTR Motors)* |         |                    |                  |               |                                  |                                                                                                                            |                                         |
|-------------------------------------------------------------------------|---------|--------------------|------------------|---------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Part Number                                                             | Price   | Accessory Type     | Capacitance (µF) | Rated Voltage | Dimension Height x Ø (in [mm])   | Applicable MTR2/<br>MTRJ Motor Number                                                                                      | MTR2/MTRJ Motor HP : RPM                |
| <a href="#"><u>MTA-CAP-10</u></a>                                       | \$23.50 | start capacitor    | 200              | 165           | 2.80 x 1.46<br>[71.1 x 37.1]     | <a href="#"><u>MTR2-P33-1AB36</u></a><br><a href="#"><u>MTRJ-001-1AB36J</u></a>                                            | 1/3 : 3600<br>1 : 3600                  |
| <a href="#"><u>MTA-CAP-11</u></a>                                       | \$25.00 | start capacitor    | 300              |               | 3.39 x 1.85<br>[86.1 x 47.0]     | <a href="#"><u>MTR2-P33-1AB18</u></a><br><a href="#"><u>MTR2-P50-1AB36</u></a><br><a href="#"><u>MTRJ-1P5-1AB36J</u></a>   | 1/3: 1800<br>1/2 : 3600<br>1 1/2 : 3600 |
| <a href="#"><u>MTA-CAP-12</u></a>                                       | \$26.50 | start capacitor    | 400              |               |                                  | <a href="#"><u>MTR2-P50-1AB18</u></a><br><a href="#"><u>MTR2-P75-1AB36</u></a><br><a href="#"><u>MTRJ-002-1AB36J</u></a>   | 1/2: 1800<br>3/4 : 3600<br>2 : 3600     |
| <a href="#"><u>MTA-CAP-13</u></a>                                       | \$38.00 | start capacitor    | 500              |               |                                  | <a href="#"><u>MTR2-P75-1AB18</u></a><br><a href="#"><u>MTR2-001-1AB18</u></a><br><a href="#"><u>MTR2-001-1AB36</u></a>    | 3/4: 1800<br>1: 1800<br>1 : 3600        |
| <a href="#"><u>MTA-CAP-14</u></a>                                       | \$38.00 | run capacitor      | 40               | 250           | 3.38 x 1.81<br>[85.9 x 46.0]     | <a href="#"><u>MTR2-1P5-1ABxx</u></a><br><a href="#"><u>MTR2-002-1ABxx</u></a>                                             | 1 1/2 : all<br>2 : all                  |
| <a href="#"><u>MTA-CAP-15</u></a>                                       | \$67.00 | start capacitor    | 800              | 165           | 4.41 x 1.85<br>[112.0 x 47.0]    | <a href="#"><u>MTRJ-1P5-1AB36J</u></a><br><a href="#"><u>MTRJ-002-1AB36J</u></a>                                           | 1 1/2 : 3600<br>2 : 3600                |
| <a href="#"><u>MTA-CAP-22</u></a>                                       | \$72.00 | start capacitor    | 900              | 165           | 4.375 x 1.8125<br>[111.1 x 46.0] | <a href="#"><u>MTR2-1P5-1AB18</u></a>                                                                                      | 1-1/2 : 1800                            |
| <a href="#"><u>MTA-CAP-31</u></a>                                       | \$21.00 | start capacitor    | 150              | 165           | 3.39 x 1.85<br>[86.1 x 47.0]     | <a href="#"><u>MTRJ-P33-1AB36J</u></a><br><a href="#"><u>MTRJ-P50-1AB36J</u></a><br><a href="#"><u>MTRJ-P75-1AB36J</u></a> | 1/3 : 3600<br>1/2 : 3600<br>3/4 : 3600  |
| <a href="#"><u>MTA-CSW-03</u></a>                                       | \$19.00 | centrifugal switch | n/a              | 125           | n/a                              | <a href="#"><u>MTR2-xxx-1AB36</u></a>                                                                                      | all 3600 rpm                            |
| <a href="#"><u>MTA-CSW-04</u></a>                                       | \$19.00 | stationary switch  |                  |               |                                  | <a href="#"><u>MTR2-xxx-1ABxx</u></a>                                                                                      | all                                     |
| <a href="#"><u>MTA-CSW-08</u></a>                                       | \$19.00 | centrifugal switch |                  |               |                                  | <a href="#"><u>MTR2-xxx-1AB18</u></a>                                                                                      | all 1800 rpm                            |
| <a href="#"><u>MTA2-BASE-56</u></a>                                     | \$22.00 | motor base         |                  | n/a           |                                  | <a href="#"><u>MTR2-xxx-1ABxx</u></a><br><a href="#"><u>MTRJ-xxx-1ABxx</u></a>                                             | all                                     |
| <a href="#"><u>MTA2-FAN-56</u></a>                                      | \$22.00 | fan                |                  |               |                                  |                                                                                                                            |                                         |
| <a href="#"><u>MTA2-JBOX-56</u></a>                                     | \$22.00 | junction box       |                  |               |                                  |                                                                                                                            |                                         |
| <a href="#"><u>MTA2-SHROUD-56</u></a>                                   | \$22.00 | fan shroud         |                  |               |                                  |                                                                                                                            |                                         |

\* These accessories are spare/replacement components only for MTR2 series IronHorse motors.  
Accessories for MTR2 series motors are not compatible with MTR series motors.



# AC Motor Selection – IronHorse® General Purpose Motors

| IronHorse® 1-Phase Motor Selection      |                                  |                   |                           |
|-----------------------------------------|----------------------------------|-------------------|---------------------------|
| Motor Series                            | MTR2                             | MTRJ              | MTF2                      |
| Paint Color                             | Black                            | Black             | Green                     |
| Main Characteristics                    | General Purpose<br>Rolled Steel  | Jet Pump          | Farm Duty<br>Rolled Steel |
| Electrical Characteristics              |                                  |                   |                           |
| Horsepower range                        | 1/3 - 2                          | 1/3 - 2           | 2 - 10                    |
| Base speed                              | 1800; 3600                       | 3600              | 1800                      |
| Standard Voltage                        | 115/208–230 VAC; 115/230 VAC     | 115/230 VAC       | 208–230 VAC               |
| Phase / Base Frequency                  | 1-phase / 60 Hz                  |                   |                           |
| Service Factor                          | 1.15                             |                   |                           |
| Design Code (NEMA)                      | L or N (by model)                | L or N (by model) | L                         |
| Insulation Class                        | Class F                          |                   |                           |
| Insulation System                       | Dip and Bake Twice               |                   | Double VPI                |
| Duty Cycle                              | Continuous                       |                   |                           |
| Thermal protection                      | None                             | Automatic         | Manual                    |
| Hazard Classification                   | None                             |                   |                           |
| Mechanical Characteristics              |                                  |                   |                           |
| Frame size                              | 56C or HC                        | 56J               | 182T - 215T               |
| Enclosure                               | TEFC                             | TEFC              | TEFC                      |
| Enclosure Rating                        | IP43                             |                   | IP55                      |
| Frame material                          | Rolled Steel                     |                   |                           |
| End bracket material                    | Aluminum                         |                   |                           |
| Junction box material                   | Steel                            |                   |                           |
| Fan guard material                      | Steel                            |                   |                           |
| Fan material                            | Polypropylene Plastic            | Plastic           |                           |
| Lead termination                        | Junction Box                     |                   |                           |
| Standard mounting                       | C-Face with Removable Rigid Base |                   | Rigid Base                |
| Drive end shaft slinger                 | Yes                              |                   | V-ring seal               |
| Bearings                                | Ball                             |                   |                           |
| Grease                                  | Mobil Polyrex EM                 |                   | NS7 ENS                   |
| Standard junction box assembly position | F1                               |                   |                           |
| Performance Characteristics             |                                  |                   |                           |
| Constant Torque speed range             | N/A                              |                   |                           |
| Variable Torque speed range             | N/A                              |                   |                           |
| Constant Horsepower speed range         | N/A                              |                   |                           |
| Temperature rise                        | B                                |                   |                           |
| Encoder provisions                      | None                             |                   |                           |
| Other Characteristics                   |                                  |                   |                           |
| Warranty*                               | 2 Years                          |                   |                           |
| Agency Approvals **                     | CSA, CE                          |                   | CE, UR                    |

\* See Terms and Conditions for motor warranty explanation.

1) For warranty on IronHorse motors below 50hp, warranty service can be arranged through AutomationDirect.

2) For warranty on IronHorse motors 50hp and above, motors must be inspected by a local EASA motor repair or service center; (see AutomationDirect Terms & Conditions).

\*\* To obtain the most current agency approval information, see the Agency Approval Checklist on the specific part number's web page.

\*\*\* 56HC motors are capable of 56C C-face mounting, and are also compatible with 56, 143T, and 145T foot mounting dimensions.