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 115V/230V	Approx Weight (lb)	Drawing Links
MTR2-P33-1AB18	$256.00	1/3	1800	115/230	TEFC rolled steel frame with cast aluminum end bell, F1 conduit box location	56C flange mount	1.15	5.2 / 2.6	22	PDF
MTR2-P50-1AB18	$283.00	1/2						7.2 / 3.6	25	PDF
MTR2-P75-1AB18	$306.00	3/4						10.0 / 5.0	29	PDF
MTR2-001-1AB18	$316.00	1				56HC		13.0 / 6.5	36	PDF
MTR2-1P5-1AB18	$373.00	1-1/2						14.5 / 7.3	37	PDF
MTR2-002-1AB18[1]	$430.00	2						19.6 / 9.8	44	PDF
MTR2-P33-1AB36	$259.00	1/3	3600	115/230	TEFC rolled steel frame with cast aluminum end bell, F1 conduit box location	56C	1.15	5.4 / 2.7	21	PDF
MTR2-P50-1AB36	$267.00	1/2						6.5 / 3.3	23	PDF
MTR2-P75-1AB36	$290.00	3/4						9.2 / 4.6	27	PDF
MTR2-001-1AB36	$306.00	1						11.5 / 5.8	30	PDF
MTR2-1P5-1AB36	$339.00	1-1/2		115/230				13.0 / 6.5	31	PDF
MTR2-002-1AB36	$395.00	2				56HC		17.0 / 8.5	37	PDF

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.

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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·ft2)
				230V No Load	Full Load	Locked Rotor	Full Load	Locked Rotor	Break -down			
1800 RPM												
MTR2-P33-1AB18	1/3	N	1725	2.05	5.2 / 2.6	33 / 16	1.01	3.54	2.57	63.0	0.58	0.048
MTR2-P50-1AB18	1/2			2.74	7.2 / 3.6	44 / 21	1.49	5.09	3.54	64.5	0.68	0.059
MTR2-P75-1AB18	3/4			3.14	10.0 / 5.0	62 / 30	2.26	7.06	5.16	67.0	0.71	0.074
MTR2-001-1AB18	1			4.39	13.0 / 6.5	80 / 40	3.03	9.30	8.23	70.0	0.69	0.095
MTR2-1P5-1AB18	1-1/2	L		5.23	14.5 / 7.3	110 / 55	4.46	8.70	10.45	77.0	0.84	0.095
MTR2-002-1AB18	2			8.07	19.6 / 9.8	152 / 76	6.06	12.17	13.81	79.0	0.82	0.121
3600 RPM												
MTR2-P33-1AB36	1/3	N	3450	2.14	5.4 / 2.7	37 / 19	0.50	2.18	1.96	59.5	0.72	0.031
MTR2-P50-1AB36	1/2			2.23	6.5 / 3.3	47 / 23	0.74	2.59	2.42	63.0	0.74	0.034
MTR2-P75-1AB36	3/4			2.82	9.2 / 4.6	66 / 33	1.12	4.62	3.44	66.5	0.78	0.041
MTR2-001-1AB36	1			3.04	11.5 / 5.8	82 / 41	1.50	4.48	3.83	69.5	0.80	0.047
MTR2-1P5-1AB36	1-1/2	L		3.90	13.0 / 6.5	109 / 55	2.21	3.22	5.08	77.0	0.94	0.047
MTR2-002-1AB36	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.

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
MTA2-JBOX-56

Start Capacitor
MTA-CAP-02

Run Capacitor
MTA-CAP-06

Fan
MTA2-FAN-56

Fan Shroud
MTAR-SHROUD-56

Fan Shroud
MTA2-SHROUD-56

Stationary Switch
MTA-CSW-04

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
MTA-CAP-01	$12.50	start capacitor	200	165	3.15 x 1.65 [80.0 x 41.9]	–	1/3 : 1800
MTA-CAP-02	$12.50	start capacitor	250			–	1/2 : 1800 3/4 : 1800
MTA-CAP-03	$12.50	start capacitor	300			–	1 : 1800
MTA-CAP-08	$12.50	start capacitor	400			MTRJ-001-1AB36J	1-1/2 : 3600
MTAR-BASE-56	$15.00	motor base	n/a	n/a	n/a	MTR-xxx-1ABxx	all
MTAR-SHROUD-56	$15.00	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/ MTRJ Motor Number	MTR2/MTRJ Motor HP : RPM
MTA-CAP-10	$26.00	start capacitor	200	165	2.80 x 1.46 [71.1 x 37.1]	MTR2-P33-1AB36 MTRJ-001-1AB36J	1/3 : 3600 1 : 3600
MTA-CAP-11	$28.00	start capacitor	300		3.39 x 1.85 [86.1 x 47.0]	MTR2-P33-1AB18 MTR2-P50-1AB36 MTRJ-1P5-1AB36J	1/3: 1800 1/2 : 3600 1 1/2 : 3600
MTA-CAP-12	$30.00	start capacitor	400			MTR2-P50-1AB18 MTR2-P75-1AB36 MTRJ-002-1AB36J	1/2: 1800 3/4 : 3600 2 : 3600
MTA-CAP-13	$42.00	start capacitor	500			MTR2-P75-1AB18 MTR2-001-1AB18 MTR2-001-1AB36	3/4: 1800 1: 1800 1 : 3600
MTA-CAP-14	$42.00	run capacitor	40	250	3.38 x 1.81 [85.9 x 46.0]	MTR2-1P5-1ABxx MTR2-002-1ABxx MTRJ-1P5-1AB36J MTRJ-002-1AB36J	1 1/2 : all 2 : all 1 1/2 : 3600 2 : 3600
MTA-CAP-15	$74.00	start capacitor	800	165	4.41 x 1.85 [112.0 x 47.0]		
MTA-CAP-22	$79.00	start capacitor	900	165	4.375 x 1.8125 [111.1 x 46.0]	MTR2-1P5-1AB18	1-1/2 : 1800
MTA-CAP-31	$24.00	start capacitor	150	165	3.39 x 1.85 [86.1 x 47.0]	MTRJ-P33-1AB36J MTRJ-P50-1AB36J MTRJ-P75-1AB36J	1/3 : 3600 1/2 : 3600 3/4 : 3600
MTA-CSW-03	$22.00	centrifugal switch	n/a	125	n/a	MTR2-xxx-1AB36	all 3600 rpm
MTA-CSW-04	$22.00	stationary switch				MTR2-xxx-1ABxx	all
MTA-CSW-08	$22.00	centrifugal switch				MTR2-xxx-1AB18	all 1800 rpm
MTA2-BASE-56	$25.00	motor base		n/a		MTR2-xxx-1ABxx MTRJ-xxx-1ABxx	all
MTA2-FAN-56	$25.00	fan					
MTA2-JBOX-56	$25.00	junction box					
MTA2-SHROUD-56	$25.00	fan shroud					

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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 Rolled Steel***	***Jet Pump***	***Farm Duty Rolled Steel***
Electrical Characteristics			
Horsepower range	1/3 - 2	1/3 - 2	2 | 7 1/2
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.**