

IronHorse® Farm-Duty AC Motors – 1-Phase

T-Frame TEFC Motors – Single-Phase 2 to 5 hp

Features

- 230VAC 1-phase
- Totally Enclosed Fan Cooled (TEFC) enclosure
- IP55 environmental rating
- NEMA T-frame
- Rolled-steel housing
- Rigid mounting base
- Can be mounted in horizontal orientation
- Steel fan cover
- Class-10 manual-reset locked-rotor thermal protector (motor thermal overload must be provided separately)
- Large easy-to-wire junction box with rubber gasket
- Heavy duty oversized ball bearings
- High tensile strength steel shaft
- Mylar nameplate with easy-to-read wiring diagram
- Electrically reversible
- NEMA design L
- Class F winding insulation
- VPI (Vacuum and Pressure Impregnation) insulation process
- Service Factor: 1.15 @ 230VAC; 1.0 @ 208VAC
- Two year warranty
- cCSA_{US} certified, CE

Accessories Available

- Start capacitors (replacement/spare)
- Run capacitors (replacement/spare)
- Centrifugal switches (replacement/spare)
- Locked rotor thermal overload switches (replacement/spare)
- Junction boxes (replacement/spare)
- Fans (replacement/spare)
- Fan shrouds (replacement/spare)

Applications

- Conveyors
- Fans
- Pumps
- Air compressors
- Other farm equipment



**MTF Series
1-Phase Farm-Duty Motor**

Motor Specifications – Single-Phase Farm-Duty Motors									
Part Number	Price	HP	Base RPM	Voltage	Housing	NEMA Frame	Service Factor	F.L. Amps @ 230VAC	Approx Weight (lb)
MTF-002-1C18-182	<--->	2	1800	230VAC ±10%	TEFC	182T	1.15 @ 230VAC 1.0 @ 208VAC	8.5	74
MTF-003-1C18	<--->	3				184T		12.9	85
MTF-005-1C18	<--->	5				184T		21.2	105

Notes:
 1) Please review the AutomationDirect Terms & Conditions for warranty and service on this product.
 2) Certain heavy and oversized items can be shipped only via LTL. Check our web site for current shipping method constraints by part number.
 3) Operate on 230VAC +/- 10% (1.15 @ 230VAC; 1.0 S.F. @ 208V), single-phase power only.

Performance Data – Single-Phase Farm-Duty Motors												
Part Number	HP	NEMA Design	FL RPM	Current @ 230V (Amps)			Torque (lb-ft)			FL Efficiency (%)	FL Power Factor	Rotor Inertia (lb-ft ²)
				230V No Load	Full Load	Locked Rotor	Full Load	Locked Rotor	Break-down			
MTF-002-1C18-182	2	L	1725	2.7	8.5	70.0	6.04	20.54	15.10	82.5	0.92	0.35
MTF-003-1C18	3			3.9	12.9	95.0	9.11	32.80	23.69	81.5	0.93	0.60
MTF-005-1C18	5			6.6	21.2	160.0	15.30	58.14	36.72	81.0	0.90	0.81

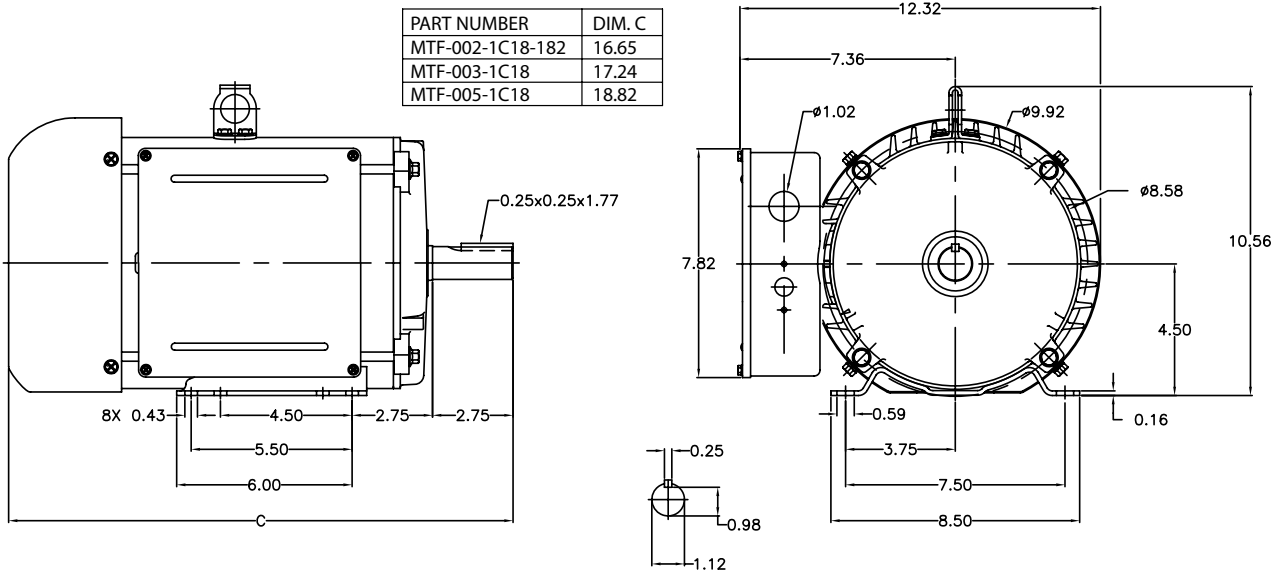
IronHorse[®] Farm-Duty AC Motors – 1-Phase

T-Frame TEFC Motors – Single-Phase 2 to 5 hp

Dimensions – (units = inches)

MTF-00x-1C18-xxx

PART NUMBER	DIM. C
MTF-002-1C18-182	16.65
MTF-003-1C18	17.24
MTF-005-1C18	18.82



IronHorse® Farm-Duty AC Motor Accessories

T-Frame TEFC Motors – Single-Phase 2 to 5 hp

Start Capacitors

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

Run Capacitors

In addition to the start capacitors and centrifugal switches, IronHorse single-phase farm-duty 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 single-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.

Locked Rotor Overload Switches

IronHorse Farm Duty motors have a built-in manual overload switch to disable the motor if the load stops the motor (locked rotor). The overload is located in the motor's junction box, and has a manual reset switch. This switch is for locked rotor only. A separate motor thermal overload must be provided.



**Junction Box
MTAF-JBOX-180**



**Centrifugal Switch
MTA-CSW-05**



**Fan Shroud
MTAF-SHROUD-180**



Manual Overload Switch MTA-MOL-1



**Fan
MTAF-FAN-184-2**



**Start Capacitor
MTA-CAP-16**



**Run Capacitor
MTA-CAP-19**

MTF Farm-Duty Single-Phase Motor Spare/Replacement Parts *							
Part Number	Price	Accessory Type	Capacitance (µF)	Rated Voltage	Dimension Height x Ø (in [mm])	Applicable Motor Number	Motor HP
MTA-CAP-16	<--->	start capacitor	200	300	3.39 x 1.81 [86.1 x 46.0]	MTF-002-1C18-182	2
MTA-CAP-17	<--->		300		3.39 x 1.81 [86.1 x 46.0]	MTF-003-1C18	3
MTA-CAP-18	<--->		500		4.33 x 1.97 [110.0 x 50.0]	MTF-005-1C18	5
MTA-CAP-19	<--->	run capacitor	35	450	3.96 x 1.77 [100.6 x 45.0]	MTF-002-1C18-182	2
MTA-CAP-20	<--->		40		3.96 x 1.97 [100.6 x 50.0]	MTF-003-1C18	3
MTA-CAP-21	<--->		50		4.17 x 1.97 [106.0 x 50.0]	MTF-005-1C18	5
MTA-CSW-05	<--->	centrifugal switch	n/a	250	n/a	MTF-002-1C18-182	2
MTA-CSW-06	<--->					MTF-003-1C18	3
MTA-CSW-07	<--->					MTF-005-1C18	5
MTA-MOL-1	<--->	manual overload switch	n/a	n/a	n/a	MTF-002-1C18-182	2
MTA-MOL-2	<--->					MTF-003-1C18	3
MTA-MOL-3	<--->					MTF-005-1C18	5
MTAF-JBOX-180	<--->	junction box				MTF-xxx-1C18-xxx	all
MTAF-FAN-182	<--->	fan	n/a	n/a	n/a	MTF-002-1C18-182	2
MTAF-FAN-184	<--->					MTF-003-1C18	3
MTAF-FAN-184-2	<--->					MTF-005-1C18	5
MTAF-SHROUD-180	<--->					fan shroud	MTF-xxx-1C18-xxx

* These accessories are spare/replacement components only for IronHorse MTF series single-phase farm-duty motors.

AC Motor Selection – IronHorse® General Purpose Motors

IronHorse® General Purpose Motor Selection					
Characteristics	1-Phase		3-Phase		
	56C/56HC Frame Rolled Steel***	T Frame Farm Duty	56C/56HC Frame Rolled Steel***	56C Frame Stainless Steel	Cast Iron T & TC Frames
Electrical Characteristics					
Horsepower range	1/3 – 2	2 – 5	1/3 – 3	1/3 – 3/4	PE: 1–300(T); 1–30(TC)
Base speed (# Poles)	1800 (4), 3600 (2)	1800 (4)	1800 (4), 3600 (2)		1200(6), 1800 (4), 3600(2)
Standard Voltage	115/208-230, 115/230	230	208-230/460		208-230/460, 460
Phase / Base Frequency (Hz)	1 / 60		3 / 60		
Service Factor	1.15		1.15 (line) ; 1.0 (drive)		
Design Code (NEMA)	L, N	L	B		
Insulation Class	F				
Insulation System	dip & bake twice	VPI, then bake, then dip and bake	dip & bake	double dip & bake	EPAct: double dip & bake PE: VPI
Duty Cycle	continuous				
Thermal protection	none	yes	none		
Mechanical Characteristics					
Frame size (mounting)	56C or 56HC	182T – 184T	56C or 56HC		143T/TC – 445/7T
Enclosure	TEFC				
Frame material	rolled steel		304 stainless steel		cast iron
End bracket material	aluminum	cast iron	aluminum	304 stainless steel	cast iron
Junction box material	steel		304 stainless steel		cast iron
Fan guard material	steel	steel	steel	304 stainless steel	steel
Fan material	polypropylene plastic	plastic	plastic	heat-resistant polyethylene	plastic
Lead termination	junction box				
Standard mounting	C-Face with Removable Rigid Base	Rigid Base	C-Face with Removable Rigid Base	C-Face with Rigid Base C-Face with Round Body	Rigid Base C-Face with Rigid Base (1-100 hp)
Drive end shaft slinger	yes				
Paint	black	green	black	n/a	PE: polyurethane enamel
Bearings	ball				1-75 hp: ball 100-300 hp: roller
Grease	Mobil Polyrex EM			Korschun lithium-based	Mobil Polyrex EM
Standard junction box assembly position	F1				F1 (some sizes reversible to F2)
Performance Characteristics					
Constant Torque speed range	n/a	n/a	2:1 (MTR, MTSS); 4:1 (MTRP, MTR2)		4:1 (Premium Efficiency)
Variable Torque speed range	n/a	n/a	5:1 (MTR, MTSS); 10:1 (MTRP, MTR2)		10:1 (Premium Efficiency)
Constant Horsepower speed range	n/a	n/a	1.5:1		1.5:1
Temperature rise	F	B			
Encoder provisions	none				
Other Characteristics					
Warranty*	2 years		1 year		2 years
Agency Approvals **	CE, cCSA _{US}		cCSA _{US}		CE, cCSA _{US}

* See Terms and Conditions for motor warranty explanation.
 1) For warranty on IronHorse motors below 50 hp, warranty service can be arranged through AutomationDirect.
 2) For warranty on IronHorse motors 50 hp 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.