

# 3-phase Motor Selection Chart (see 14-10 for single-phase)

3-Phase Characteristic	IronHorse™ 56C Frame 3Ø	IronHorse™ T Frame	Marathon microMAX™	Marathon Black Max®	Marathon Blue Max®	Marathon Blue Chip XRI®
<b>Electrical Characteristics</b>						
<b>Horsepower range</b>	1/3 - 2	1 - 300	1/4 - 10	1/4 - 30	40 - 100	15 - 100
<b>Base speed (# Poles)</b>	1800 (4)	1800 (4)	1800 (4)	1800 (4) and 1200 (6)	1800 (4)	1800 (4)
<b>Standard Voltage</b>	208-230/460	208-230/460 (250 & 300 hp 460V only)	230/460 (1/4 hp is 230V only)	230/460 and 575	230/460	230/460 and 575
<b>Insulation Class</b>	F	F	H	F	H	F
<b>Insulation System</b>	dip & bake	double dip & bake	CR <sup>200</sup> magnet wire	MAX GUARD®	MAX GUARD®	n/a
<b>Service Factor (derated for AC drive use)</b>	1.0	1.0	1.0	1.0	1.0	1.15
<b>Phase/Base Frequency</b>	3/60	3/60	3/60	3/60	3/60	3/60
<b>Design Code (NEMA)</b>	B	A: 10-50 hp B: all other sizes	A and B for 1/4 - 2 hp	A	A	B
<b>Duty Cycle</b>	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
<b>Thermal protection</b>	None	None	None	Class F thermostats	Class F thermostats	None
<b>Mechanical Characteristics</b>						
<b>Frame size (mounting)</b>	56C	143T - 449T	56C - 215TC	56C - 286TC	324T(C) - 405T(C)	254T - 405T
<b>Normal NEMA frame size</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Enclosure</b>	TEFC	TEFC	TENV and TEFC	TENV	TEFC and TEBC	TEFC
<b>Frame material</b>	Rolled Steel frame; cast Aluminum end bell	Cast Iron	Rolled Steel	Rolled Steel w Al face; Cast Iron	Cast Iron	Cast Iron
<b>End bracket material</b>	Aluminum	Cast Iron	Aluminum	Aluminum, Cast Iron	Cast Iron	Cast Iron
<b>Conduit box material</b>	Steel	Cast Iron	Steel	Steel	Cast Iron	Cast Iron
<b>Fan guard material</b>	Steel	Steel	Polypropylene	None (all ratings TENV)	Cast Iron	Cast Iron
<b>Fan material</b>	Plastic	Plastic (143T-445/7T) Aluminum (449T)	Polypropylene	None (all ratings TENV)	Polypropylene	Polypropylene
<b>Lead termination</b>	Conduit box	Conduit box	Conduit box (1/4 hp - terminal block)	Conduit box	Conduit box	Conduit box
<b>Standard mounting</b>	C-Face with Removable Rigid Base	Rigid Base (C-Flange kit available)	C-Face with Rigid Base & C-Face Round Body	C-Face with Rigid Base	C-Face with Rigid Base	Rigid Base
<b>Drive end shaft slinger</b>	Yes	Yes	No	No	Yes	Yes
<b>Paint</b>	Black	Epoxy primer / Synthetic alkyd enamel	Black powder-coat	Black enamel	Blue enamel	epoxy paint
<b>Bearings</b>	Ball	1-75 hp: Ball 100-300 hp: Roller	Ball (C3 fit)	Ball (C3 fit)	Ball (C3 fit)	Ball (C3 fit)
<b>Grease</b>	Exxon Polyrex EM					
<b>Standard conduit box assembly position</b>	F1	F1 some sizes reversible to F2	F3	F1, reversible to F2	F1, reversible to F2	F1
<b>Performance Characteristics</b>						
<b>Constant Torque speed range</b>	2:1	2:1	20:1 (TEFC) 1000:1 (TENV)	1000:1 (TENV)	2000:1 (all enclosures)	20:1
<b>Variable Torque speed range</b>	5:1	5:1	-	-	-	-
<b>Constant Horsepower speed range</b>	1.5:1	1.5:1	2:1 (90-120 Hz intermittent)	2:1 (90-120 Hz intermittent)	2:1	2:1
<b>Temperature rise</b>	B	B	B	F	F (TEFC) and B (TEBC)	B
<b>Encoder provisions</b>	No	No	No	Yes	Yes	No
<b>Other Characteristics</b>						
<b>Agency listings</b>	cCSA <sub>US</sub>	CE, cCSA <sub>US</sub> , EPACT	UL Recognized CSA Certified	UL Recognized CSA Certified	UL Recognized CSA Certified	UL Recognized CSA Certified
<b>Warranty*</b>	2 years	2 years	3 years	3 years	3 years	3 years

\*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.  
 3) Marathon warranty service can be arranged through Marathon Electric service centers. See list of service centers on our web site at [www.automationdirect.com](http://www.automationdirect.com).

# microMAX™ AC Inverter Duty Motors

1000:1 Constant Torque (TENV), 20:1 Constant Torque (TEFC)



## Features

- Constant torque operation from 0 to base speed (TENV ratings)
- Constant torque operation from 1/20 speed to base speed (TEFC ratings)
- Constant horsepower to twice base speed (RPM)
- Class H insulation with CR<sup>200</sup> (corona-resistant) magnet wire
- Continuous duty at 40°C ambient
- Dual Mounting (C-Face with rigid base and C-Face with removable rigid base, as noted)
- Service Factor: 1.0
- Utilizes double shielded ball bearings
- Exxon Polyrex® EM bearing grease
- Eliminates brush and commutator maintenance
- Electrically reversible
- UL recognized and CSA certified
- Three year warranty

## Applications

- Replaces 90 volt and 180 volt PMDC motors (when used with AC variable frequency drives)
- Typical uses include: machine tools, conveyors, packaging machines, batching machines, printing equipment, pumps and fans.

### Motor Shipping Schedule

Same or one day \*      Up to 7 days      Up to 10 days

Color indicates shipping lead time in business days. Check stock status online.

\* For same-day shipping of stock motors requiring LTL shipment, order before 4 p.m. EST.

\*\* For same-day shipping of microMAX motors under 100 lbs, order before 5 p.m. EST.

### Motor Specifications

Part Number	HP	Base RPM	Volts	Encl.	NEMA Frame	Model No.	F.L. Amps	Weight (lbs.)	Footnotes
Y500**	1/4	1800	230	TENV	56C	56H17T2011	1.0	17	N,Q
Y360**	1/2	1800	230/460	TENV	56C	56H17T2017	1.8/0.9	25	N
Y364**	1	1800	230/460	TEFC	56C	56H17F2021	3.2/1.6	28	-
Y368**	2	1800	230/460	TEFC	145TC	145THFR5329	5.8/2.9	51	6
Y999**	3	1800	230/460	TEFC	182TC	182THFR7729	8.4/4.2	77	6
Y372**	5	1800	230/460	TEFC	184TC	184THFR7726	13.0/6.5	91	6
Y994*	7 1/2	1800	230/460	TEFC	213TC	213THFW7726	21.4/10.7	133	6
Y996*	10	1800	230/460	TEFC	215TC	215THFW7726	27.6/13.8	154	6

Footnotes:

N Totally Enclosed Non Ventilated

Q "Quick Connect" terminal board

6 Bolt-on, removable base for footless mounting option

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

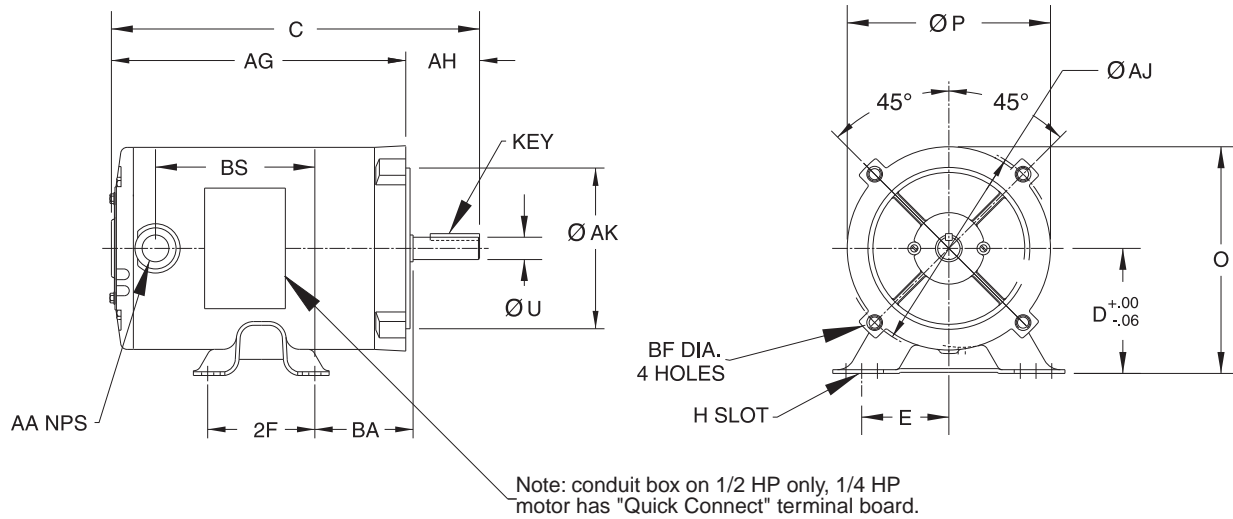
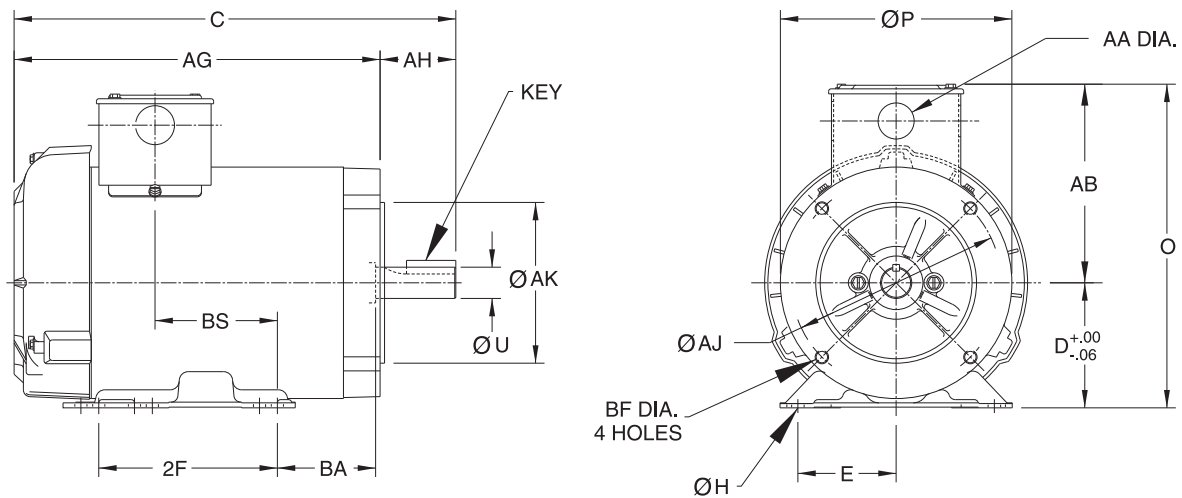
Warranty service can be arranged through numerous Marathon Electric service centers. See list of service centers on our Web site at [www.automationdirect.com](http://www.automationdirect.com).

### Performance Data (460 Volt except as indicated)

Part Number	HP	NEMA Design	F.L. RPM	Min. RPM	F.L. AMPS 460 V	N.L. AMPS 460 V	F.L. Torque (lb-ft)	B.D. Torque (lb-ft)	Max. CHP RPM*	Max. Safe RPM	F.L. Effic.	F.L. Power Factor	Rotor Inertia (lb-ft <sup>2</sup> )
Y500	1/4 (230V)	B	1725	1.8	1.0 (230V)	0.7 (230V)	0.75	3.7	3520	5400	72.0	65.0	0.040
Y360	1/2	B	1730	1.8	0.9	0.5	1.5	6.8	3520	5400	80.0	72.0	0.075
Y364	1	B	1725	45	1.6	0.9	3.0	12.0	3520	5400	78.5	77.5	0.090
Y368	2	B	1740	60	2.9	1.6	6.0	29.0	3530	5400	82.5	77.0	0.140
Y999	3	A	1760	80	4.2	2.5	9.0	35.0	3540	5400	87.5	76.0	0.30
Y372	5	A	1750	90	6.7	3.5	15.0	61.0	3480	5400	88.5	79.0	0.45
Y994	7 1/2	A	1770	90	10.7	6.2	22.3	80.0	3565	4200	89.5	72.5	0.75
Y996	10	A	1770	90	13.8	7.8	30.0	110	3570	4200	91.0	74.0	1.00

\* Maximum Constant HP RPM is for direct coupled loads.

# microMAX™ Motor Dimensions

**Figure 1**

**Figure 2**


Motor Dimensions [Inches]																					
Part Number	HP	Fig.	NEMA Frame	C	D	E	2F	H	O Max.	P Max.	U	AA	AB Max.	AG Max.	AH	AJ	AK	BA	BF	BS	Key
Y500	1/4	1	56C	9.8	3.50	2.44	3.00	0.88	6.4	5.7	0.625	None	None	7.7	2.06	5.875	4.50	2.75	3/8-16	4.0	0.19 x 0.19 x 1.38
Y360	1/2	2		10.5					7.9					8.5						4.7	
Y364	1	2		12.4					0.88 knock out					10.4						4.1	
Y368	2	2		14.9					0.35					12.8						6.4	
Y999	3	2	182TC	16.2	4.50	3.75	5.50	0.45	11.7	8.6	1.125	1.09 hole	7.2	13.6	2.90	7.250	8.50	3.50	1/2-13	2.5	0.25 x 0.25 x 1.75
Y372	5	2	184TC	16.7					11.7					2.8							
Y994	7 1/2	2	213TC	21.0					13.0					6.9							
Y996	10	2	215TC	22.2					13.0					8.2							
												1.34 KO	7.8	19.1	3.40		4.25				0.31 x 0.31 x 2.38

Note: Dimensions are for reference only. For complete dimensional information, refer to Marathon Electric at [www.marathonelectric.com](http://www.marathonelectric.com).

# STABLE AC Motor Slide Bases

## Mounting Slide Bases for 56 to 449T NEMA Motors

### Features

- Allows adjustment of motor mounting position
- Double adjusting screws for frames 182T - 449T
- Manufactured to precise dimensional standards
- Dimensionally interchangeable with existing major makes
- Heavy-duty steel construction
- Painted with oven-baked primer for better adhesion of customer's paint
- All "D" bolts (motor mounting bolts) are fixed to the exact motor foot pattern
- All "D" bolts are welded into position to prevent spinning and dropping from slots
- Bases are provided with washers

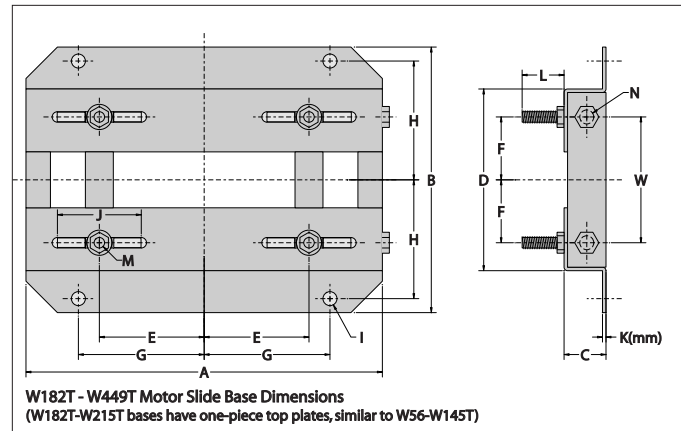
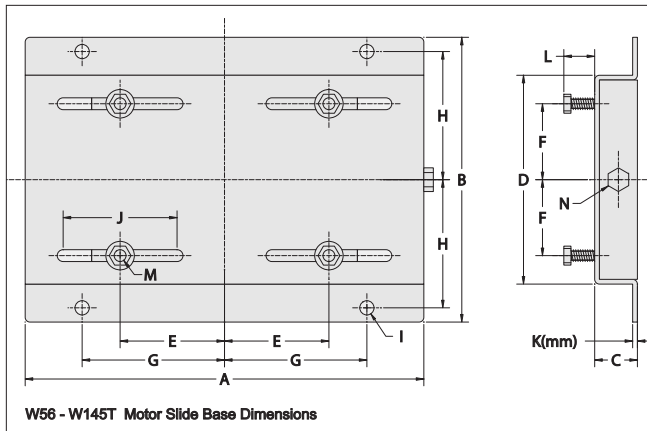


Motor Slide Bases										
Part Number		Fits Frame Type	Shipping Weight (lb)	IronHorse Motor	Marathon microMAX Motor	Marathon Black Max 230/460V	Marathon Black Max 575V	Marathon Blue Max Motor	Marathon Blue Chip XRI 230/460V	Marathon Blue Chip XRI 575V
<b>MTA-BASE-W56</b>		56	3.5	MTR-xxx-1AB18 MTR-xxx-3BD18	Y500 Y360 Y364	Y592(-A772) Y534(-A772) Y535(-A772)	Y555(-A772) Y556(-A772)	-	-	-
<b>MTA-BASE-W143T</b>		143T	5.0	MTC-001-3BD18	-	Y536(-A772)	-	-	-	-
<b>MTA-BASE-W145T</b>		145T	5.6	MTC-1P5-3BD18 MTC-002-3BD18	Y368	Y537(-A772) Y538(-A772) Y551(-A772)	Y557(-A772)	-	-	-
<b>MTA-BASE-W182T</b>		182T	10	MTC-003-3BD18	Y999	Y541(-A772)	Y558(-A772)	-	-	-
<b>MTA-BASE-W184T</b>		184T	10	MTC-005-3BD18	Y372	Y540(-A772) Y543(-A772)	Y559(-A772)	-	-	-
<b>MTA-BASE-W213T</b>		213T	15	MTC-7P5-3BD18	Y994	Y542(-A772) Y545(-A772)	Y560(-A772)	-	-	-
<b>MTA-BASE-W215T</b>		215T	16	MTC-010-3BD18	Y996	Y544(-A772) Y547(-A772)	Y561(-A772)	-	-	-
<b>MTA-BASE-W254T</b>		254T	20	MTC-15-3BD18	-	Y546(-A772) Y549(-A772)	Y562(-A772)	-	E205	E307
<b>MTA-BASE-W256T</b>		256T	21	MTC-20-3BD18	-	Y548(-A772) Y552(-A772)	Y563(-A772)	-	E206	E308
<b>MTA-BASE-W284T</b>		284T	23	MTC-25-3BD18	-	Y553(-A772)	Y567(-A772)	-	E207	E309
<b>MTA-BASE-W286T</b>		286T	24	MTC-30-3BD18	-	Y393(-A772)	Y394(-A772)	-	E208	E310
<b>MTA-BASE-W324T</b>		324T	33	MTC-40-3BD18	-	-	-	Y571(-A774) Y513(-A775)	E209	E311
<b>MTA-BASE-W326T</b>		326T	35	MTC-50-3BD18	-	-	-	Y572(-A774) Y514(-A775)	E210	E312
<b>MTA-BASE-W364T</b>		364T	46	MTC-60-3BD18	-	-	-	Y573(-A774) Y515(-A775)	E211	E313
<b>MTA-BASE-W365T</b>		365T	47	MTC-75-3BD18	-	-	-	Y574(-A774) Y516(-A775)	E212	E315
<b>MTA-BASE-W404T</b>		404T	64	-	-	-	-	-	-	-
<b>MTA-BASE-W405T</b>		405T	65	MTC-100-3BD18	-	-	-	Y575(-A774) Y517(-A775)	E213	E314
<b>MTA-BASE-W444T</b>		444T	69	MTC-125-3BD18	-	-	-	-	-	-
<b>MTA-BASE-W445T</b>		445T	70	MTC-150-3BD18	-	-	-	-	-	-
<b>MTA-BASE-W447T</b>		445/7T 447T	92	MTC-200-3BD18	-	-	-	-	-	-
<b>MTA-BASE-W449T</b>		449T	98	MTC-250-3D18 MTC-300-3D18	-	-	-	-	-	-

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

# STABLE AC Motor Slide Bases

## Dimensions – Mounting Slide Bases for NEMA Motors



Dimensions [inches, except as noted] - STABLE Motor Slide Bases															
MTA-BASE-Wxxxx	A	B	C	D	E	F	G	H	I	J	K(mm)	L	M	N	W
<b>56</b>	10-5/8	6-1/2	1-1/8	4-1/2	2-7/16	1-1/2	3-13/16	2-7/8	3/8	3	2 mm	7/8	5/16 x 1	3/8 x 4	n/a
<b>143T</b>	10-1/2	7-1/2	1-1/8	5-1/2	2-3/4	2	3-3/4	3-3/8	3/8	3	3 mm	13/16	5/16 x 1	3/8 x 4	n/a
<b>145T</b>	10-1/2	8-1/2	1-1/8	6-1/2	2-3/4	2-1/2	3-3/4	3-7/8	3/8	3	3 mm	13/16	5/16 x 1	3/8 x 4	n/a
<b>182T</b>	12-3/4	9-1/2	1-1/2	6-1/2	3-3/4	2-1/4	4-1/2	4-1/4	1/2	3	3.5 mm	1-1/2	3/8 x 1-3/4	1/2 x 6	4-1/2
<b>184T</b>	12-3/4	10-1/2	1-1/2	7-1/2	3-3/4	2-3/4	4-1/2	4-3/4	1/2	3	3.5 mm	1-1/2	3/8 x 1-3/4	1/2 x 6	5-1/2
<b>213T</b>	15	11	1-3/4	7-1/2	4-1/4	2-3/4	5-1/4	4-3/4	1/2	3-1/2	3.8 mm	1-1/2	3/8 x 1-3/4	1/2 x 6	5-1/2
<b>215T</b>	15	12-1/2	1-3/4	9	4-1/4	3-1/2	5-1/4	5-1/2	1/2	3-1/2	3.8 mm	1-1/2	3/8 x 1-3/4	1/2 x 6	7
<b>254T</b>	17-3/4	15-1/8	2	10-3/4	5	4-1/8	6-1/4	6-5/8	5/8	4	4.6 mm	1-7/16	1/2 x 1-3/4	5/8 x 6	5-5/16
<b>256T</b>	17-3/4	16-7/8	2	12-1/2	5	5	6-1/4	7-1/2	5/8	4	4.6 mm	1-7/16	1/2 x 1-3/4	5/8 x 6	7
<b>284T</b>	19-3/4	16-7/8	2	12-1/2	5-1/2	4-3/4	7	7-1/2	5/8	4-1/2	4.6 mm	1-11/16	1/2 x 2	5/8 x 6	7
<b>286T</b>	19-3/4	18-3/8	2	14	5-1/2	5-1/2	7	8-1/4	5/8	4-1/2	4.6 mm	1-11/16	1/2 x 2	5/8 x 6	8
<b>324T</b>	22-3/4	19-1/4	2-1/2	14	6-1/4	5-1/4	8	8-1/2	3/4	5-1/4	4.6 mm	2-3/16	5/8 x 2-1/2	3/4 x 9	7
<b>326T</b>	22-3/4	20-3/4	2-1/2	15-1/2	6-1/4	6	8	9-1/4	3/4	5-1/4	4.6 mm	2-3/16	5/8 x 2-1/2	3/4 x 9	8-1/2
<b>364T</b>	25-1/2	20-1/2	2-1/2	15-1/2	7	5-5/8	9	9-1/8	3/4	6	5.8 mm	2-1/16	5/8 x 2-1/2	3/4 x 9	7-3/4
<b>365T</b>	25-1/2	21-1/2	2-1/2	16-1/2	7	6-1/8	9	9-5/8	3/4	6	5.8 mm	2-1/16	5/8 x 2-1/2	3/4 x 9	8-3/4
<b>404T</b>	28-3/4	22-3/8	3	16-1/2	8	6-1/8	10	9-7/8	7/8	7	5.8 mm	2-1/2	3/4 x 3	3/4 x 11	8-3/4
<b>405T</b>	28-3/4	23-7/8	3	18	8	6-7/8	10	10-5/8	7/8	7	5.8 mm	2-1/2	3/4 x 3	3/4 x 11	10-1/4
<b>444T</b>	31-1/4	24-5/8	3	19-1/4	9	7-1/4	11	11	7/8	7-1/2	5.8 mm	2-1/2	3/4 x 3	3/4 x 11	11
<b>445T</b>	31-1/4	26-5/8	3	21-1/4	9	8-1/4	11	12	7/8	7-1/2	5.8 mm	2-1/2	3/4 x 3	3/4 x 11	13
<b>447T</b>	31-1/4	30-1/8	3	24-3/4	9	10	11	13-3/4	7/8	7-1/2	8 mm	3	3/4 x 3-1/2	3/4 x 11	16-1/2
<b>449T</b>	31-1/4	35-1/8	3	29-3/4	9	12-1/2	11	16-1/4	7/8	7-1/2	8 mm	3	3/4 x 3-1/2	3/4 x 11	21-1/2

- PLC Overview
- DL05/06 PLC
- DL105 PLC
- DL205 PLC
- DL305 PLC
- DL405 PLC
- Field I/O
- Software
- C-more HMIs
- Other HMI
- AC Drives
- Motors**
- Steppers/Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pushbuttons/Lights
- Process
- Relays/Timers
- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
- Part Index