



Submittal Data Information

301-2691

TSS - Taco Standard Starter

EFFECTIVE: DECEMBER 11, 2014

SUPERSEDES: NEW

JOB _____ ENGINEER _____

CONTRACTOR _____ REP. _____

ITEM NO. _____



TSS - TACO STANDARD STARTER

3Ø, 200-600V, 1/10-100HP

HOA Keypad

⏻ SMARTSTART® Technology protection

FEATURES

Integrated ⏻ SMARTSTART® electronic pump protection

- Enhanced class 10 electronic overload with underload protection
 - Specifically designed protection for pumps
 - Built-in 1.15 service factor compensation
- Current phase unbalance protection
- Cycle fault protection
- Locked rotor and stall protection
- Out of calibration
 - Detects if overload FLA dial is improperly set

Multi-voltage operating range with automation I/O

- Accepts 200-600 VAC directly, true plug and play
- Includes a dry contact auto-run input and fault relay output

Industrial grade construction

- Door mounted heavy-duty HOA switch or keypad
- Housed in an indoor rated NEMA N1 or outdoor rated NEMA 3R enclosure
- NEMA/IEC rated magnetic contactors feature 2.5 million electrical cycles at full rated current

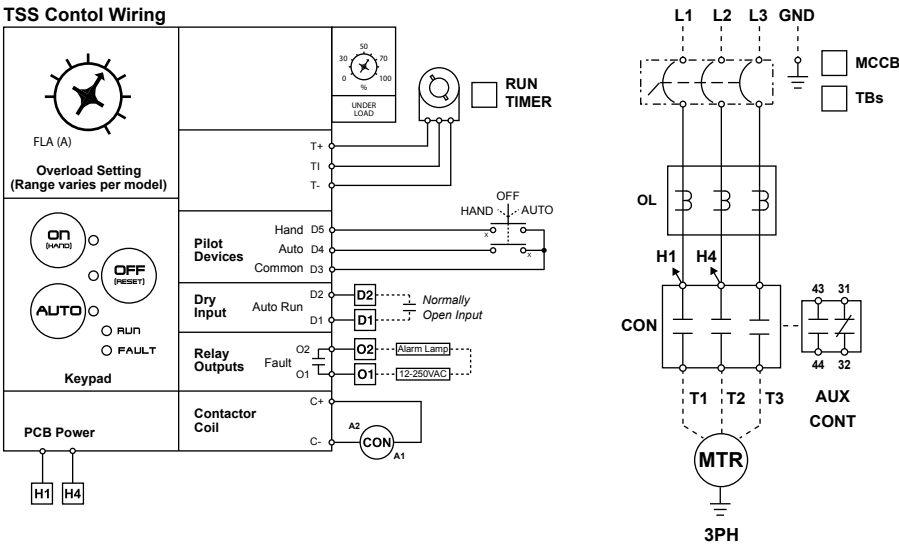
Combination versions include disconnect

- Motor Circuit Protection or Molded Case Circuit Breaker disconnect provides short circuit protection
- High interrupting ratings for maximum electrical system compatibility
- No fuses required
- Lockable handle for safety

TSS SPECIFICATIONS

Starter Type			
TSS - Taco Standard Starter			
Standard or Combination (MCP or MCCB Disconnect)			
NEMA Type 1 or 3R Enclosed			
User Interface			
Settings Adjustments		Internal	
Hand-Off-Auto		NEMA 3R Enclosed - Door mounted switch or keypad (model dependent), NEMA 1 Enclosed - Hand-Off-Auto keypad	
Standard Control Operations			
Inputs	Dry Auto Run	N.O. dry contact closure	
Output	Fault Relay	N.O. 12-240VAC	
Operational	Overload Type	Electronic, I ² t thermal trip curve	
	Fault Reset	Manual	
	Power Fail Modes	Selectable: Return to Off mode or return to last mode (Hand, Off, or Auto)	
Environmental			
Ambient Operating Temp		-5° to 140° F (-20° to 60° C)	
Ambient Storage Temp		-5° to 185° F (-20° to 85° C)	
Relative Humidity		5% to 95% non-condensing	
Motor Protection		Adjustment / Description	Default Setting
Overload Current Setting Range		Differs per model	Per SFA
Overload Trip Class		Class 10	Always on
Underload		Adjustable Trip: 0%-100% of FLA	35%
Cycle Fault		Trip if cycle rate exceeds 20 starts/minute	Always On
Stall		Trips within 0.5 seconds (disabled during startup)	Always On
Protection		Adjustment / Description	Default Setting
Current Phase Unbalance		Trips within 3 sec @ 25% current unbalance. *Trip threshold changes to 80% unbalance when switched to Off	On
Locked Rotor		Trips within 0.5 seconds	
Out of Calibration		Trips after 10 seconds if the FLA dial setting is incorrect (set above calculated FLA range), ie. Start current is outside of an acceptable range (fla setting * 5 < inrush < fla setting * 14).	
Max Time to Start		Regardless of FLA or I ² t curve, always trip at start if starting current is outside of an acceptable range (inrush / 5) and still decreasing after 10 seconds.	

TSS WIRING DIAGRAM



Standard wiring schematic shown, actual product wiring may vary depending on options selected

150AF	
MRC-85LA	MRC-150LA
Lug	
3 pole	
690V	
1000V	
50/60Hz	
6kV	8kV
1800 operations per hour	
12 mil. operations	5 mil. operations
2 mil. operations	1 mil. operations
135	210
25	45
85	150
45	75
85	150
45	70
75	100
45	50
45	60
135	210
7.5	15
15	25
30	40
40	50
60	100
75	75
3	4
3.53 lbs	5.29 lbs
2.76 x 5.51 x 5.35 in	0.15 x 0.24 x 0.20 in
5.73 lbs	
2.76 x 5.51 x 6.78 in	
1NO & 1NC	
MA-1	
CA-2, CA-4	



SUBMITTED EQUIPMENT SCHEDULE

QTY	TAG	TSS PART#	NEMA SIZE	HP	VOLTAGE	PHASE
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3-POLE CONTACTOR SPECIFICATIONS



Frame size			
Type			
Terminal Type			
Number of poles			
Rated operation voltage, Ue			
Rated insulation voltage, Ui			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Max. operating rate in operating cycles per hour (AC3)			
Durability	Mechanical		
	Electrical		
Current and power	AC-1, Thermal current		A
	AC-3	200/240V	kW A
		380/440V	kW A
		500/550V	kW A
		690V	kW A
	Continuous current		A
	Single Phase	110~120V	HP
		220~240V	HP
UL rating (50/60Hz)	Three Phase	200~208V	HP
		220~240V	HP
		440~480V	HP
		550~600V	HP
	NEMA size		
Size and weight	MRC	Weight Size (WxHxD)	lbs in
	MRD	Weight Size (WxHxD)	lbs in
Auxiliary (standard)			
Auxiliary	Side mount		
	Front mount		

*Minimum conduct current of auxiliary contactor is DC 17V 5mA

**10A max, Not motor duty rated.

22AF	
MRC-9B	MRC-18B
Screw	
3 pole	
690V	
690V	
50/60Hz	
6kV	
1800 operations per hour	
15 mil. operations	
2.5 mil. operations	
25	40
2.5	4.5
11	18
4	7.5
9	18a
4	7.5
7	13
4	7.5
6	9
25	40
0.5	1
1.5	3
2	5
3	7.5
5	10
7.5	15
00	0
0.73 lbs	
1.77 x 2.89 x 3.39 in	
1.12 lbs	
1.77 x 2.89 x 4.63 in	
1NO & 1NC	
MA-1	
CA-2, CA-4	

40AF	
MRC-32A	MRC-50LA
Screw	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
50	70
7.5	15
32	55
15	22
32	50
18.5	30
28	43
18.5	30
20	28
50	70
2	3
5	10
7.5	20
10	25
20	40
25	50
1	2
0.88 lbs 1.77 x 3.27 x 3.54 in	1.98 lbs 2.17 x 4.17 x 4.69 in
1.32 lbs 1.77 x 3.27 x 4.61 in	2.65 lbs 2.17 x 4.17 x 5.76 in
1NO & 1NC	
MA-1	
CA-2, CA-4	

MANUAL MOTOR STARTER SPECIFICATIONS

Frame Size	Rated operational current I _e (A)	Magnetic release operating current (A)	Branch Motor Protection (UL508)								
			1-phase [HP] (50/60Hz)		3-phase [HP] (60Hz)				KAIC Ratings [kA]		
			115V	230V	200V	230V	460V	575V	240V	480V	600V
32AF	0.16	2.1	-	-	-	-	-	-	100	50	10
	0.25	3.3	-	-	-	-	-	-	100	50	10
	0.4	5.2	-	-	-	-	-	-	100	50	10
	0.63	8.2	-	-	-	-	-	-	100	50	10
	1	13	-	-	-	-	-	1/2	100	50	10
	1.6	20.8	-	1/10	-	-	3/4	3/4	100	50	10
	2.5	32.5	-	1/6	1/2	1/2	1	1.5	100	50	10
	4	52	1/8	1/3	3/4	3/4	2	3	100	50	10
	6	78	1/4	1/2	1	1.5	3	5	100	50	10
	8	104	1/3	1	2	2	5	5	100	50	10
	10	130	1/2	1.5	2	3	5	7.5	100	50	10
	13	169	1/2	2	3	3	7.5	10	100	50	10
	17	221	1	3	3	5	10	15	100	50	10
	22	286	1.5	3	5	7.5	15	20	100	30	10
	26	338	2	3	7.5	7.5	15	20	100	30	10
	32	416	2	5	7.5	10	20	30	100	30	10
	40	520	3	7.5	10	10	30	30	100	30	10
63AF	10	130	1/2	1.5	2	3	5	7.5	100	50	10
	13	169	1/2	2	3	3	7.5	10	100	50	10
	17	221	1	3	3	5	10	15	100	50	10
	22	286	1.5	3	5	7.5	15	20	100	50	10
	26	338	2	3	7.5	7.5	15	20	100	50	10
	32	416	2	5	7.5	10	20	30	100	50	10
	40	520	3	7.5	10	10	30	30	100	50	10
	50	650	3	10	15	15	30	40	100	50	10
	63	819	5	10	20	20	40	60	100	50	10
	65	845	5	10	20	20	40	60	100	50	10
100AF	17	221	1	3	3	5	10	15	100	50	10
	22	286	1.5	3	5	7.5	15	20	100	50	10
	26	338	2	3	7.5	7.5	15	20	100	50	10
	32	416	2	5	7.5	10	20	30	100	50	10
	40	520	3	7.5	10	10	30	30	100	50	10
	50	650	3	10	15	15	30	40	100	50	10
	63	819	5	10	20	20	40	60	100	50	10
	75	975	5	15	20	25	50	60	100	50	10
	90	1170	7.5	20	25	30	60	75	100	50	10
	100	1300	10	20	30	30	75	100	100	50	10



CMS-32HI



CMS-63HI



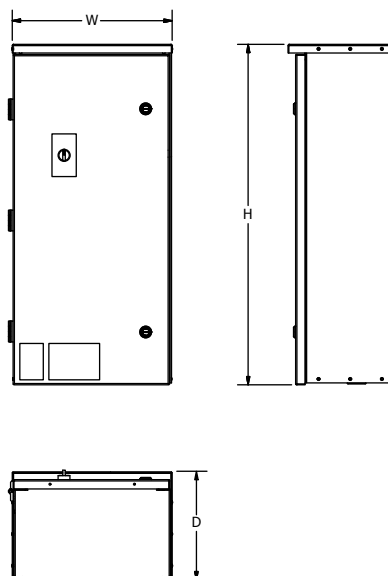
CMS-100HI

DIMENSIONS

NEMA 3R Dimensions

**All measurements shown in inches*

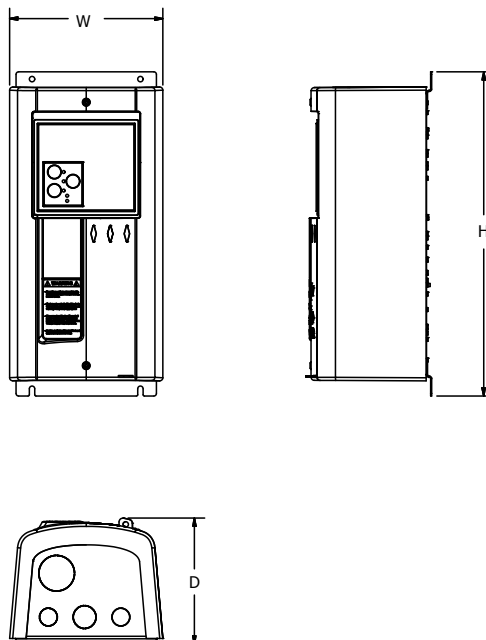
Combination Starter	H	W	D
TSS3R9JG1.6 - TSS3R40JG40	14	7.5	6
TSS3R50JG50	22	15	8
TSS3R85JG63 - TSS3R150JG200	32	15	8
Standard Starter	H	W	D
TSS3R9J9-TSS3R32J32	14	7.5	6
TSS3R50JG52-TSS3R100J80	16	12	8
TSS3R150J130	22	15	8



NEMA 1 Dimensions

**All measurements shown in inches*

Combination Starter	H	W	D
TSS19JG1.6-TSS140JG40	16	7.5	6
Standard Starter	H	W	D
TSS19J9-TSS15J52	16	7.5	6



Smartstart® is a registered trademark of Franklin Control Systems Inc.

Do your best work.®

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Printed in USA

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