

## Enclosure Weights And Dimensions



Teco Part Number				h (height) in Inches	w (width) in Inches	d (depth) in Inches	Weight (lbs)			
W/O Circuit Breaker		With Circuit Breaker					W/O Circuit Breaker		With Circuit Breaker	
NEMA 1	NEMA 4/12	NEMA 1	NEMA 4/12				Nema 1	Nema 4/12	Nema 1	Nema 4/12
TMSF17N1	TMSF17N12BYP	TMSF17CBN1	TMSF17CBN12BYP	24	20	12	92	103	97	108
TMSF30N1	TMSF30N12BYP	TMSF30CBN1	TMSF30CBN12BYP	24	20	12	92	103	97	108
TMSF45N1	TMSF45N12BYP	TMSF45CBN1	TMSF45CBN12BYP	24	20	12	92	103	97	108
TMSF60N1	TMSF60N12BYP	TMSF60CBN1	TMSF60CBN12BYP	24	20	12	94	107	99	112
TMSF75N1	TMSF75N12BYP	TMSF75CBN1	TMSF75CBN12BYP	24	20	12	95	109	100	114
TMSF85N1	TMSF85N12BYP	TMSF85CBN1	TMSF85CBN12BYP	24	20	12	101	115	106	120
TMSF110N1	TMSF110N12BYP	TMSF110CBN1	TMSF110CBN12BYP	30	24	12	127	144	132	149
TMSF145N1	TMSF145N12BYP	TMSF145CBN1	TMSF145CBN12BYP	30	24	12	127	144	133	149
TMSF170N1	TMSF170N12BYP	TMSF170CBN1	TMSF170CBN12BYP	36	30	12	184	203	194	213
TMSF210N1	TMSF210N12BYP	TMSF210CBN1	TMSF210CBN12BYP	42	30	12	217	236	227	246
TMSF250N1	TMSF250N12BYP	TMSF250CBN1	TMSF250CBN12BYP	42	30	12	219	241	229	251
TMSF310N1	TMSF310N12BYP	TMSF310CBN1	TMSF310CBN12BYP	48	36	12	320	342	330	352
TMSF370N1	TMSF370N12BYP	TMSF370CBN1	TMSF370CBN12BYP	60	36	12	326	443	336	463
TMSF450N1	TMSF450N12BYP	TMSF450CBN1	TMSF450CBN12BYP	60	36	12	415	454	435	474
TMSF570N1	TMSF570N12BYP	TMSF570CBN1	TMSF570CBN12BYP	60	48	18	746	785	766	805
TMSF710N1	TMSF710N12BYP	TMSF710CBN1	TMSF710CBN12BYP	60	48	18	752	796	772	816
TMSF835N1	TMSF835N12BYP	TMSF835CBN1	TMSF835CBN12BYP	60	48	18	803	847	823	867
TMSF1000N1	TMSF1000N12BYP	TMSF1000CBN1	TMSF1000CBN12BYP	60	48	18	821	861	841	881

**TECO**  **Westinghouse**

5100 North IH-35  
Round Rock, Texas 78681  
1-800-279-4007

[www.tecowestinghouse.com](http://www.tecowestinghouse.com)

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## Solid State Starters



**TECO**  **Westinghouse**





# Solid State Starters

Standard and Combination Packages

# Solid State Starters

MSF Chassis unit

# Solid State Starter Panel Options

Solid State Starters provide ramped starting for induction motors by either reduced voltage or torque control at start. Either method creates a soft start for motors, and reduces inrush currents.

**COMBINATION PANELS COMPRISING:**

- NEMA Rated Panel
- Torque Controlled Soft Starter Type MSF
- ATL Rated Bypass Contactor in All NEMA 4/ 12 Units
- NEMA 1 Includes Installed Fan & Filter Kits
- Customer Terminals for Motor Connections
- Control Power Transformer
- Motor Start/ Stop and Run Pilot Device (door mounted)
- NEMA 4/ 12 Units are Rated for Crusher Duty
- NEMA 4/ 12 Units includes Emergency Bypass Switch (For Across-the-Line) Start

**MSF – COMBINATION PANELS**

The MSF Combination Soft Starter Panel will comprise the following standard features:

- NEMA enclosure
- Circuit Breaker Disconnect with thru the Door Handle Mechanism
- MSF Soft Starter
- Bypass Contactor (except NEMA 1)
- Customer terminals for motor connection

**Notes:** Additional functionality can be accommodated by selecting the appropriate devices from the “Solid State Starter Options” section.

**NEMA 4/ 12 Units are Designed for Crusher Applications**

MAX HP BY VOLTAGE				MSF AMP RATING	NEMA 1 Part Number		NEMA 4/ 12 Part Number	
208V	230V	460V	575V		W/O Circuit Breaker	With Circuit Breaker	W/O Circuit Breaker	With Circuit Breaker
5	5	10	15	17	TMSF17N1	TMSF17CBN1	TMSF17N12BYP	TMSF17CBN12BYP
7.5	10	20	30	30	TMSF30N1	TMSF30CBN1	TMSF30N12BYP	TMSF30CBN12BYP
10	15	30	40	45	TMSF45N1	TMSF45CBN1	TMSF45N12BYP	TMSF45CBN12BYP
15	20	40	60	60	TMSF60N1	TMSF60CBN1	TMSF60N12BYP	TMSF60CBN12BYP
20	25	50	75	75	TMSF75N1	TMSF75CBN1	TMSF75N12BYP	TMSF75CBN12BYP
25	30	60	75	85	TMSF85N1	TMSF85CBN1	TMSF85N12BYP	TMSF85CBN12BYP
30	40	75	100	110	TMSF110N1	TMSF110CBN1	TMSF110N12BYP	TMSF110CBN12BYP
40	50	100	125	145	TMSF145N1	TMSF145CBN1	TMSF145N12BYP	TMSF145CBN12BYP
50	60	125	150	170	TMSF170N1	TMSF170CBN1	TMSF170N12BYP	TMSF170CBN12BYP
60	75	150	200	210	TMSF210N1	TMSF210CBN1	TMSF210N12BYP	TMSF210CBN12BYP
75	100	200	250	250	TMSF250N1	TMSF250CBN1	TMSF250N12BYP	TMSF250CBN12BYP
100	125	250	300	310	TMSF310N1	TMSF310CBN1	TMSF310N12BYP	TMSF310CBN12BYP
-	150	300	350	370	TMSF370N1	TMSF370CBN1	TMSF370N12BYP	TMSF370CBN12BYP
-	175	350	450	450	TMSF450N1	TMSF450CBN1	TMSF450N12BYP	TMSF450CBN12BYP
-	200	450	550	570	TMSF570N1	TMSF570CBN1	TMSF570N12BYP	TMSF570CBN12BYP
-	-	500	700	710	TMSF710N1	TMSF710CBN1	TMSF710N12BYP	TMSF710CBN12BYP
-	-	600	800	835		TMSF835CBN1		TMSF835CBN12BYP
-	-	800	1000	1000	Consult Factory	TMSF1000CBN1	Consult Factory	TMSF1000CBN12BYP
-	-	1000	1400	1400		TMSF1400CBN1		TMSF1400CBN12BYP

These units are suitable for retrofits in existing installations or as components in larger system projects

MODEL / AMPS	MOTOR / CONTROL VOLTAGE
TMSF 17	200-525 / 100-240 V
TMSF 30	200-525 / 100-240 V
TMSF 45	200-525 / 100-240 V
TMSF 60	200-525 / 100-240 V
TMSF 75	200-525 / 100-240 V
TMSF 85	200-525 / 100-240 V
TMSF 110	200-525 / 100-240 V
TMSF 145	200-525 / 100-240 V
TMSF 170	200-525 / 100-240 V
TMSF 210	200-525 / 100-240 V
TMSF 250	200-525 / 100-240 V
TMSF 310	200-525 / 100-240 V
TMSF 370	200-525 / 100-240 V
TMSF 450	200-525 / 100-240 V
TMSF 570	200-525 / 100-240 V
TMSF 710	200-525 / 100-240 V
TMSF 835	200-525 / 100-240 V
TMSF 1000	200-525 / 100-240 V
TMSF 1400	200-525 / 100-240 V



Operator Interface Controls - Mounted & Wired 30mm devices	
(TSS)	Start-Stop Pushbutton
(TOS)	On-Off Selector Switch
(TJG)	Jog Pushbutton
(TRST)	Reset Pushbutton
(TSA)	SS-Off-ATL Selector Switch for use with across the line contractors
(THA)	Hand-Off-Auto Selector Switch
(THS)	Hand-Off-Auto with Start-Stop Pushbutton
(TPS)	Parameter Set Selector Switch
(TES)	Emergency Stop Pushbutton
(TRL)	'Run'Green indicator light
(TPL)	'Power On' Red indicator light
(TFL)	'Fault'Amber indicator light
(T2L)	'Run'+ 'Power On' (2 segment) indicator light
(T3L)	'Run'+ 'Power On'+ 'Fault' (3 segment) indicator light
(TR)	Relays & Timers General Purpose Control relay, 2Form contacts
(TR1)	Relay as above wired to Fault Circuits
(TT1)	On Delay Timer
(TT2)	Off Delay Timer
(TSOL)	Standard overload Relay for ATL option, w/CT's
(TEOL)	Electronic Overload Relay for ATL option, w/CT's
(TKP)	Mounting of MSF keypad to the Panel Door (includes PPU)
Inline Contactor	
(TNL)	Includes IEC series contactor rated for the FLA of the motor
Change Panel rating from NEMA 4/12 to 3R	
(T3R)	Installation of Drip Shield to top of enclosure. Price applicable to all panel sizes
Fieldbus Communication Modules (Installed)	
(TMCOM)	Modbus RS232/485
(TTPCOM)	Profibus DP
(TICOM)	Interbus-S
(TDCOM)	DeviceNet
(TLCOM)	Lonworks
(TFCOM)	FIP IO