

Pearl[®] Water Systems

Variable Frequency Drives
for Submersible Pumps
MM-MT series



SSMARTTI VARIABLE FREQUENCY DRIVE

Applications

- Ideal for submersible pump applications
- Compatible with any 2-wire submersible motor $\leq 1\frac{1}{2}$ hp (excluding Franklin Electric's $\frac{1}{2}$ hp -115V motors)
- Suitable for use on all 3-wire submersible motors ≤ 2 hp (excluding Flint & Walling's $\frac{1}{2}$ hp & AY McDonald 2 hp motors)

Features

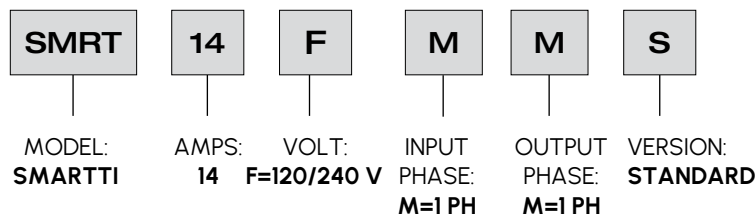
- Constant Pressure - Leading value
- Reduced tank size
- Quick & Simple Installation
- Easy Setup - Achieve constant pressure in just a few minutes
- Large Graphic Display - Bright, backlit screen visible in direct sunlight
- Rugged & Compact - NEMA 3R steel enclosure, rated up to 122° F
- Industry Best Lead Times
- ETL Listed - Complies with UL 61800-5-1 and CSA C22.2 No. 274-17
- Push Button Membrane Keypad with backlit graphic display



Technical Data

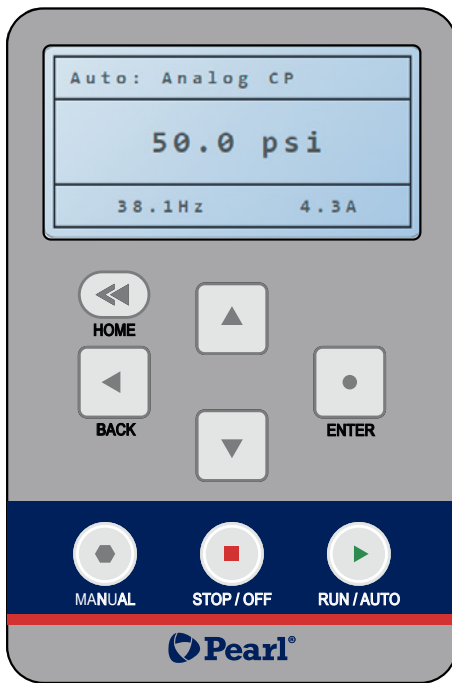
MODEL	AMP	HP	VOLT	PHASE
SMRT 14FMMS	14	1/3 - 2	120/240	1

Nomenclature



Technical Specifications

MODEL	MAX. POWER	INPUT POWER				OUTPUT POWER				
	HP	PHASE	VOLT.	VOLT. RANGE	FREQ.	PHASE	NOMINAL VOLT.	VOLT. RANGE	FREQUENCY	MAX. CURRENT
SMRT 14FMMS	2	1	120/240 V	90V - 160V 180V - 260V	60 Hz	1	EQUAL TO INPUT	90V - 160V 180V - 260 V	5 Hz - 120 Hz	14



DIGITAL INPUTS	
Quantity	Two Programmable
Ratings	<15 V 7 mA Galvanically Isolated
OPTIONAL ANALOG INPUTS	
Quantity	Two Programmable
Current Reference	4-20 mA (1 Input)
Voltage Reference	0 to 5 VDC (1 Input)
Terminal Block Size	24 to 16 AWG

ELECTRICAL DATA	
Short Circuit Withstand Rating	5 kA RMS Symmetrical Amps
Efficiency	95%
Startup Ramp Time	0 to 120 s
Shutdown Ramp Time	0 to 120 s or Coast To Stop
Overload Capacity	150% for 2 s

OPERATING CONDITIONS		
Operating Temperature Range	1/3 HP to 1-1/2 HP	-20 °C to 50 °C (-4 °F to 122 °F)*
	2 HP	-20 °C to 40 °C (-4 °F to 104 °F)*
Storage Temperature Range	-25 °C to 74 °C (-13 °F to 165 °F)	
Enclosure	NEMA Type 3R (Outdoor Rainproof)	
Altitude	Derate by 5 °C every 2000 ft over 5500 ft of elevation	

Applications

- Ideal for submersible pump applications
- Compatible with any 3 ph submersible motor up to 5 hp

Features

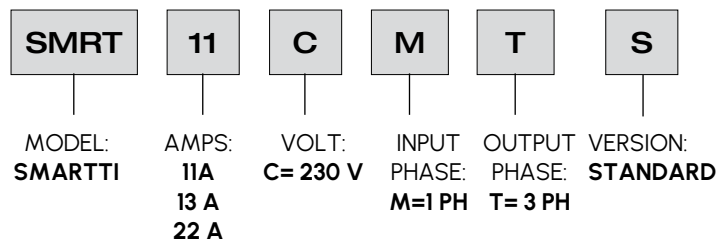
- Constant Pressure - Leading value
- Reduced Tank Size
- Quick & Simple Installation
- Easy Setup - Achieve constant pressure in just a few minutes
- Large Graphic Display - Bright, backlit screen visible in direct sunlight
- Rugged & Compact - NEMA 3R steel enclosure, rated up to 122° F
- Industry Best Lead Times
- ETL Listed - Complies with UL 61800-5-1 and CSA C22.2 No. 274-17
- Push Button Membrane Keypad with backlit graphic display



Technical Data

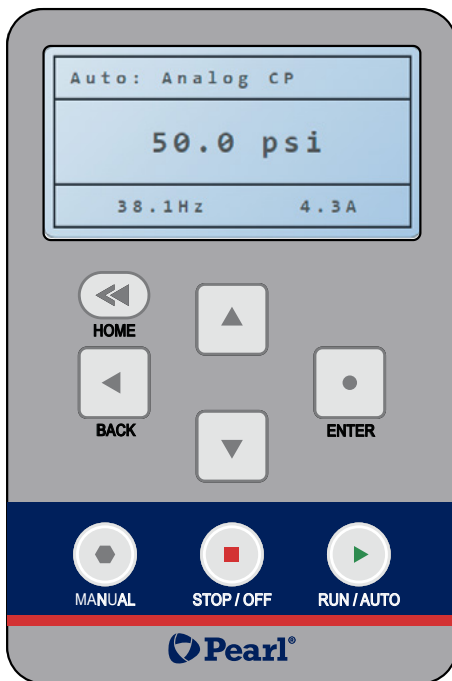
MODEL	AMP	HP	INPUT VOLT.	INPUT PHASE	OUTPUT PHASE
SMRT 11CMTS	11	2	230 V	1	3
SMRT 13CMTS	13	3	230 V	1	3
SMRT 22CMTS	22	5	230 V	1	3

Nomenclature



Technical Specifications

MODEL	POWER	INPUT POWER			FREQ.	OUTPUT POWER				
	HP	PHASE	VOLT.	VOLT. RANGE		PHASE	NOMINAL VOLT.	VOLT. RANGE	FREQUENCY	MAX. CURRENT
SMRT 11CMTS	2	1	208 - 240 V	190 - 275 V	60 Hz	3	240	190 - 275 V	5 - 300 Hz	11
SMRT 13 CMTS	3	1	208 - 240 V	190 - 275 V	60 Hz	3	240	190 - 275 V	5 - 300 Hz	13
SMRT 22 CMTS	5	1	208 - 240 V	190 - 275 V	60 Hz	3	240	190 - 275 V	5 - 300 Hz	22



ANALOG INPUTS	
Quantity	Two Programmable
Current Reference	4 – 20 mA (2 Inputs)
Voltage Reference	0.5 VDC (1 Input)
Terminal Block Size	26 - 12 AWG
DIGITAL INPUTS	
Quantity	Two Programmable
Ratings	< 5 V, galvanically isolated
Terminal Block Size	26 - 12 AWG
RELAY OUTPUTS	
Quantity	Two Programmable
Ratings	Relay 1: 5 vdc, 7 a at 250 VAC Relay 2: 5 vdc, 7 a at 250 VAC
Terminal Block Size	26 - 12 AWG

ELECTRICAL DATA	
Short Circuit Withstand Rating	5 kA RMS symmetrical amps
Efficiency	95%
Startup Ramp Time	1 – 120 S
Shutdown Ramp Time	1 – 120 s or Coast to Stop
Overload Capacity	120% for 60 s

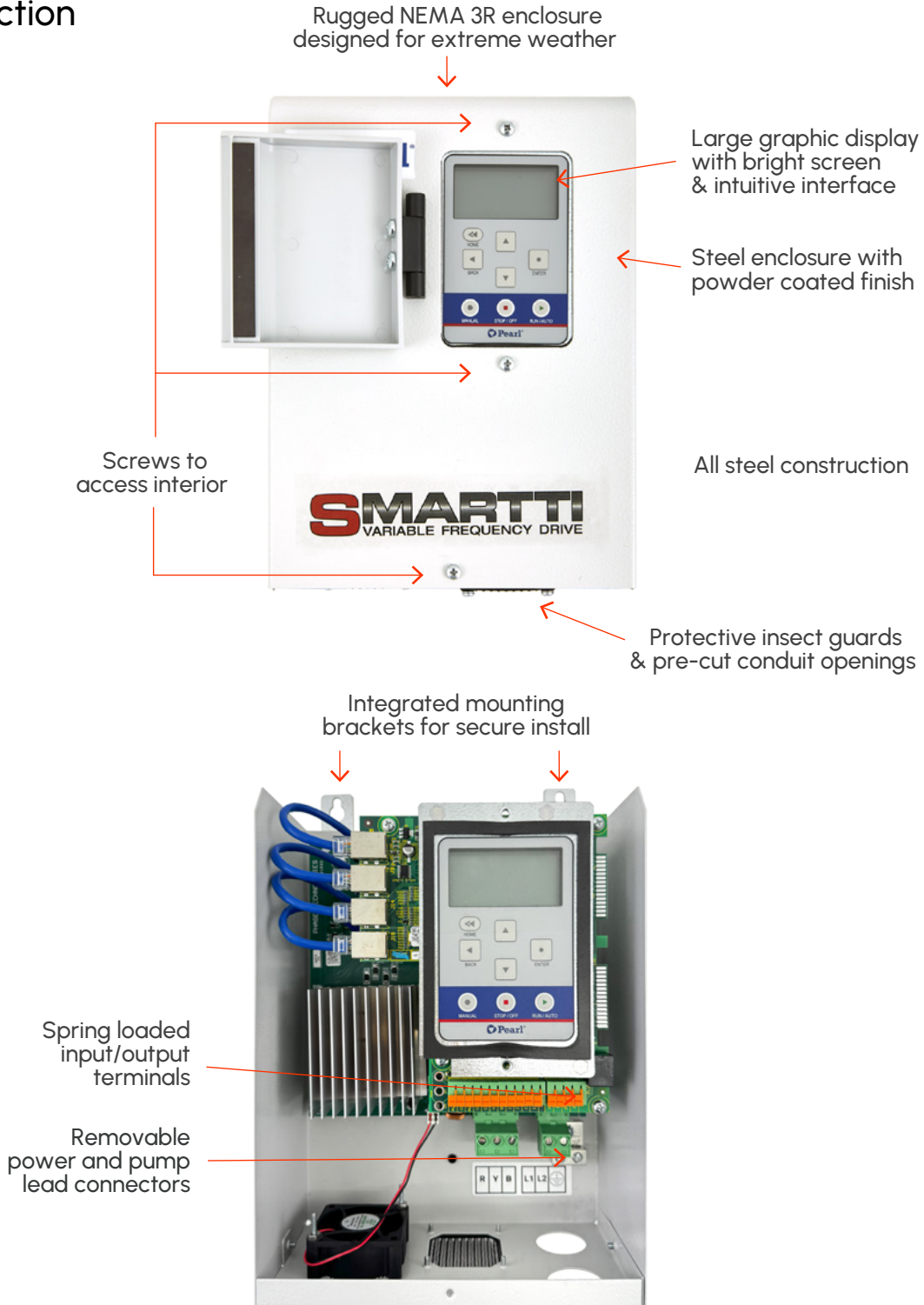
OPERATING CONDITIONS	
Operating Temperature Range	-40 °C to 50 °C (-40 °F to 122 °F)
Storage Temperature Range	-40 °C to 57 °C (-40 °F to 135 °F)
Enclosure	NEMA Type 3R (Outdoor Rainproof)
Altitude	Derate by 5 °C every 2000 ft over 5500 ft of elevation

SMARTTI

VARIABLE FREQUENCY DRIVE



Construction

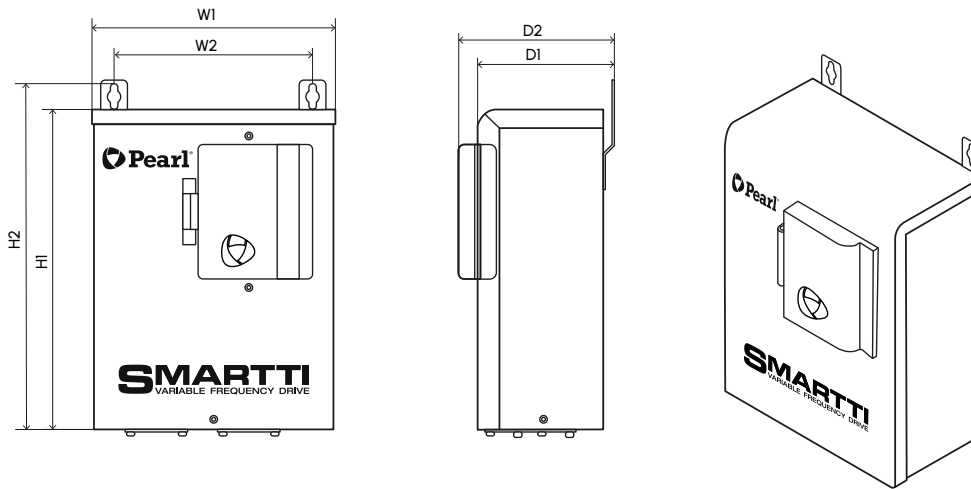


SMARTTI

VARIABLE FREQUENCY DRIVE



Dimensions



MODEL	H1 [in]	H2 [in]	W1 [in]	W2 [in]	D1 [in]	D2 [in]	WEIGHT [lbs]
SMRT 14FMMS	12.22	13.22	9.07	7.52	4.91	6.1	9.8
SMRT 11CMTS	12.22	13.6	9.07	7.52	5.02	5.86	9
SMRT 13CMTS	12.22	13.6	9.07	7.52	5.02	5.86	9
SMRT 22CMTS	17.017	-	9.20	7.47	4.8	5.04	13

Box Dimensions

MODEL	H [in]	W [in]	D [in]	WEIGHT [lbs]
SMRT 14FMMS	15.35	13.38	7.48	11.05
SMRT 11CMTS	15.35	13.38	7.48	10.25
SMRT 13CMTS	15.35	13.38	7.48	10.25
SMRT 22CMTS	20.07	14.56	8.66	14.5



SMARTTI

VARIABLE FREQUENCY DRIVE



VARIABLE FREQUENCY DRIVE FOR...

SINGLE AND THREE-PHASE
SUBMERSIBLE PUMPS

