MI-START

Soft Starters

SOFT STARTER SELECTION SUMMARY

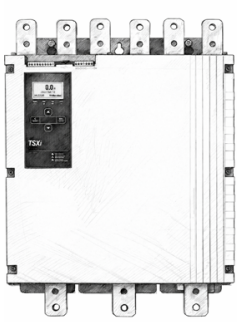
YOUR APPLICATION

Industry:
Application:
Environment:

Line Voltage:
Motor Size:

MODEL SELECTION

Series: TSXi
Model Number: TSXi-0202E-V12



Max Motor FLC:
Start Current:
Start Duration:

NOTE: If the expected operational duty exceeds stated starter capability shown above contact your local representative who will verify correct starter selection.

OPTIONAL ACCESSORIES

Remote HMI

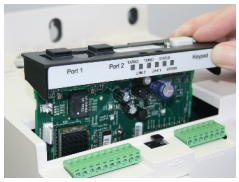
includes

- Status Indication
- Start/Stop/Reset
- Programming
- Graphical Display
- Hot Keys

Finger Guards

- 202E – 1092E

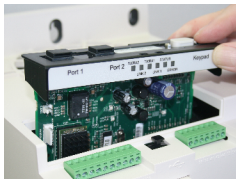
Fieldbus



protocols

- Profibus *
- ProfiNet
- Modbus TCP *
- Modbus RTU *
- DeviceNet
- Ethernet IP *

Smart Cards



options

Pump Card

* Ground fault option available

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STANDARD FEATURES

INTERFACE

Plain Language display	8 Languages	LED Status Indication	Graphing

START / STOP FUNCTION

Voltage Ramp Start	Constant Current Start	Adaptive Start/Stop	D.C. Brake
Kick Start	Current Ramp Start	Voltage Ramp Stop	Soft Braking
Scheduled Start / Stop	Reverse Direction		

MOTOR AND SYSTEM PROTECTIONS

Motor Overload	Current imbalance	Phase Loss	Underpower
Motor Connection Fault	Overcurrent	Phase Sequence	Overpower
Instant Over Current (Jam)	Undercurrent	Undervoltage	SCR Overload (ITSM)
Excess Start Time (Stall)	External Trip Inputs	Overvoltage	
Too many starts	Motor Thermistor	Line Frequency	

MONITORING

Phase currents	Current phase imbalance	Motor Power	*With PUMP SMART CARD*
Average current	Thermal Capacity: starter	Power Factor	▪ Pump Pressure
Hours Run	Thermal Capacity: motor	High current flag	▪ Pump Flow
Start Counter	Analogue Output Value	Low current flag	▪ Well depth
Line frequency	Line-to-line voltage	Motor temperature flag	▪ Pump Temperature
Last Start Details	Average voltage	Ground Fault (Option)	

ANCILLARY FUNCTIONS

Jog	Emergency Mode	Dual Motor Sets	Programable Protection Action
Inside Delta Operation	Power-Through Mode	Pump Clean	▪ Soft Stop Trip
Motor Reverse Control	Second Motor Set	Run Timers	▪ Soft Stop Trip + Auto Reset
Restart Delay: Antibackspin	Auto Reset	Weekly Scheduling	▪ Trip
Auto-Start/Stop	Soft Brake Control	Simulation Tools	▪ Trip + Auto Reset
			▪ Warn and Log
			▪ Log Only
			▪ Trip + Shunt relay Trip

ACTIVITY LOGS – 384 EVENTS

Date and Time	Average Current	Motor Thermistor State	Rating Capacity
Event type	Phase 1 Current	Ambient Temp	Voltage
Event Source	Phase 2 Current	Start Heatsink Temp	Power Factor
Event Action Detail 1	Phase 3 Current	Motor Thermal Models	MI-START Support App
Event Action Detail 2	Frequency	SCR Temp	
Started in (s)	Starter State At Event	Bypass Contactor Temp	

SPECIFICATIONS

SUPPLY

Main Voltage L1,L2,L3	TSXi-xxxxE-V12	1200 VAC (+10 % / - 20%)
Control Voltage A1,A2,A3	TSXi-xxxxE-V12-C1 (A1, A2)	110~120 VAC (+10 %/-15 %), 600 mA
	TSXi-xxxxE-V12-C1 (A2, A3)	220~240 VAC (+10 %/-15 %), 600 mA
	TSXi-xxxxE-V12-C2 (A1, A2)	24 VAC/VDC (+/-20 %), 2,8 A
Mains Frequency	50 Hz~60 Hz (+/- 5%)	
Rated insulation	1200 VAC to earth	
Rated impulse withstand	6 kV	
Form designation	Bypassed semiconductor motor starter form 1	

SHORT CIRCUIT CAPABILITY

Coordination with semiconductor fuses	Type 1
Coordination with HRC fuses	Type 2

ELECTROMAGNETIC CAPABILITY (COMPLIANT WITH EU DIRECTIVE 2014/35/EU)

EMC Immunity	IEC 60947-4-2
EMC Emissions	IEC 60947-4-2 Class B

INPUTS

Input rating	Active 24 VDC, 8mA approx..
Motor thermistor (B4, B5)	Trip >3.6 kΩ, reset <1.6 kΩ

OUTPUTS

Relay Outputs	10 A @ 250 VAC resistive, 5A @ 250 VAC AC15 pf 0.3	
	Main Contactor (33,34)	Normally open
	Relay output A (41, 42, 44)	Changeover
	Relay output B (53, 54)	Normally open
	Bypass contactor output (03, 04)	Normally open
Analog Output (21, 22)	Maximum load	600Ω (12VDC @ 20 mA)
	Accuracy	+/- 5%

ENVIRONMENT

Operating Temperature	-10°C~60°C above 40°C with derating
Storage Temperature	-25°C~+60°C
Operating Altitude	0-1000m, above 1000m with derating
Humidity	5%~95% Relative Humidity
Pollution Degree	Pollution Degree 3
Vibration	IEC 60068-2-6
Protection	IP00

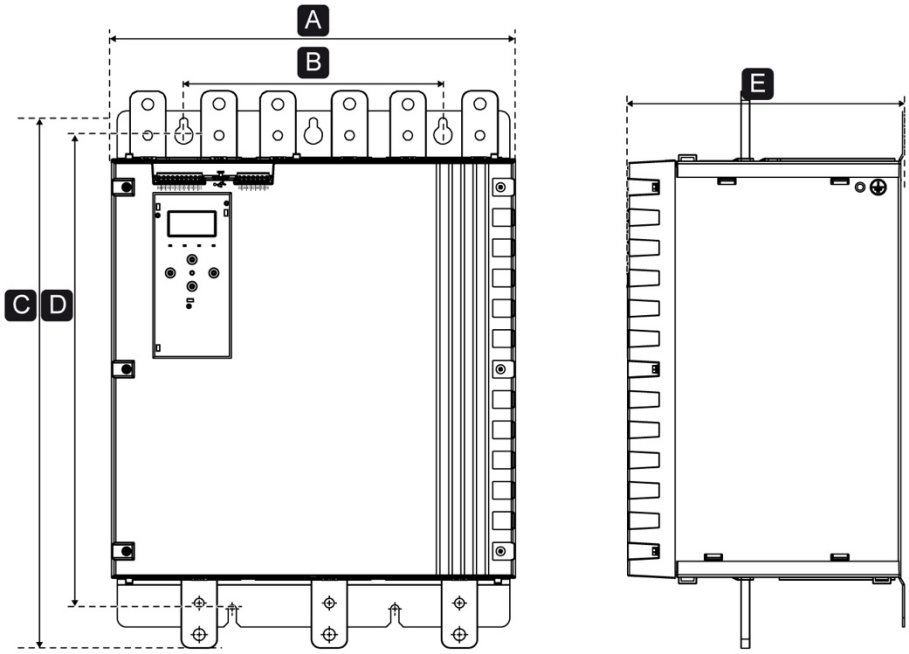
HEAT DISSIPATION

During Start	4.5 watts per ampere
During Run	≤ 35 Watts

APPROVALS

RCM	IEC 60947-4-2	**CE**	EN 60947-4-2

DIMENSIONS & WEIGHTS



	Width		Height		Depth	Weight
Model	**A**	**B**	**C**	**D**	**E**	
TSXi-0202E~1092E	447 (17.6)	287 (11.3)	662 (26.1)	585 (23.0)	306 (12.1)	61 (134.5)

mm (inches) kg (lbs)