SM2/SM4 QUICK START GUIDE

Input Voltage/Motor Base Frequency Selection: Always check these parameters at first power up, set to a value based on mains voltage and Motor nameplate Base frequency.

P199 = "4" for motor nameplate base frequency = 50Hz
P107 = "0" for mains voltage = 120, 200, 400, 480 (VAC)

P199 = "3" (default) for motor nameplate base frequency = 60Hz
P107 = "1" (default) for mains voltage = 120, 240, 480, 600 (VAC)

Password: If **"PASS"** is displayed enter **"225"** and press **"M"** button.

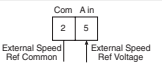
Analog Control Wiring

Internal Voltage Control

P100 = 0, 1, 2, 4 or 5
P101 = 1

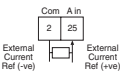
External Voltage Control

P100 = 0, 1, 2, 4 or 5
P101 = 1 for 0 -10V input



Current Source Speed Control

P100 = 0, 1, 2, 4 or 5
P101 = 2 for 4-20mA input
P163 (TB-25 current loss action)
0 = No action
1 = "F.FoL" fault message when input is less than 2mA
2 = Go to Preset Speed

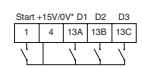


Digital Input Logic Control Wiring

The digital inputs can be configured for positive logic or negative logic, by setting switch (ALsw) (see picture opposite)
P120 must also be set to match the configuration.
P120 = "1" (Negative logic/Active low/NPN)
P120 = "2" (Positive logic/Active High/PNP) (Default)
(Incorrect setting will result in "F.AL" fault message)

TB-1 = Drive Start/Stop (note that **P**100 must be set to 1,4 or 5)
TB-13A = Configured using **P**121 (Default = 0 : No function)
TB-13B = Configured using **P**122 (Default = 0 : No function)
TB-13C = Configured using **P**123 (Default = 0 : No function)

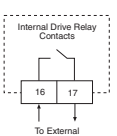
10 = Rev rotation	11 = Start fwd	12 = Start rev
13 = Run fwd	14 = Run rev	15 = Jog fwd
16 = Jog rev	17 = Accel/Decel 2	18 = DC brake
19 = Aux ramp to stop	20 = Clear fault	21 = Ext fault
22 = Inverse Ext fault	(0 to 9-Please refer to operating instructions)	



*Dependant on logic selected - Negative/Positive

Relay Terminal Wiring

Relay contact state when :
P140 = 0 (Always Open)
P140 = 1 (Closed = drive running)
P140 = 2 (Closed = drive running in reverse)
P140 = 3 (Open = drive tripped)
P140 = 4 (Closed = drive tripped)
P140 = 5 (Open = restart attempts failed if **P**110 =3 to 6)
P140 = 6 (Closed = output frequency =commanded frequency)
P140 = 7 (Closed = output frequency is >**P**136)
P140 = 8 (Closed = motor current = **P**171)
P140 = 9 (Closed = 4-20mA signal is below 2mA)
P140 = 10 (Closed = motor load is below **P**145)
P140 = 11 through to 22 (Please refer to operating instructions)



QSSV01-C

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SM2/SM4 QUICK START GUIDE

Parameter Settings:

P100: **Start Control Source (Default = '0')**
0 = Local keypad : Run button on front of drive
1 = Terminal strip : Terminal strip start/stop circuit

P101: **Standard reference source (Default = '0')**
0 = Keypad (local or remote) : Speed/torque reference from keypad buttons
1 or 2 : See "Frequency Control Wiring" section.
3 = Preset #1 : Speed/torque reference = Preset #1*
4 = Preset #2 : Speed/torque reference = Preset #2*
5 = Preset #3 : Speed/torque reference = Preset #3*
6 = Network : Speed/torque reference from network*

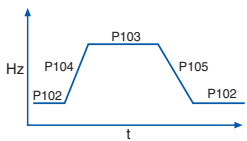
*Only if no Auto reference is selected using digital inputs

P102: **Minimum Output Frequency (Default = '0Hz')**
Set to minimum Frequency for Application

P103: **Maximum Output Frequency (Default = '60Hz')**
Set to Maximum Frequency for Application

P104: **Acceleration Time (Default = '20s')**
Set to required Acceleration Time

P105: **Deceleration Time (Default = '20s')**
Set to required Deceleration Time



P108: **Motor overload protection (Default '100%')**
Calculate **P**108 = (motor rated current / SM2/4 output current rating) x 100

P300: **Operating Mode (Default = '0')**
0 = Constant V/Hz → Constant torque V/Hz, for general applications
1 = Variable V/Hz → Variable torque V/Hz, for centrifugal fan and pump applications
2 = Enhanced Constant V/Hz → For single or multiple motor applications that require better performance than settings 0 or 1 but cannot use vector mode as no motor data is available or vector mode causing motor instability.
3 = Enhanced Variable V/Hz
4 = Vector Speed → Single motor applications requiring high starting torque and speed regulation
5 – Vector Torque → Single motor applications requiring torque control independent of speed

Vector speed and torque control setup (P300 = 4 or 5)

If P300 = 4 or 5, a motor auto-calibration must be carried out, ensure motor nameplate data is programmed first (detailed below), failure to do so will result in a F.n Id fault message.

P302 = Motor rated voltage
P303 = Motor rated current
P304 = Motor rated frequency
P305 = Motor rated speed
P306 = Motor Cosine Phi

Set **P**399 to 1 and provide a start command (see "start control source" above) to start the motor auto-calibration, the display will show "CAL" for up to 40 sec's and then "StoP" once completed.

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