

Product Details and Certifications

Cross Reference RA Part Number: PN-73180

 **Product: 150-SB1NUD**

Description: SMC-50, Smart Motor Controller, 200...600V, 90 A Line,
155 A Delta Normal Duty



Representative Photo Only (actual product may vary based on configuration sections)

CONTROLLER DATA

Bulletin Number	150-S Smart Motor Controller
Enclosure Type	Open
Input Line Voltage	200...690V AC, 50/60Hz
Control Voltage	100...120V AC
Phase	3 PH
Amperage Rating	90 A Line, 155A Delta ND

CERTIFICATIONS AND APPROVALS

UL
EN/IEC
cULus

OPTIONS

Control Options	None
-----------------	------



Bulletin 150 — SMC™-50 Smart Motor Controller

The SMC-50 Smart Motor Controller provides microprocessor-controlled, solid-state (SCR, no bypass) starting for standard three-phase squirrel-cage induction or Wye-Delta (6-lead) motors.

Features

- 90...520 A range
- Nine standard start modes
- Rated voltage: 200...690V AC
- Three expansion ports to install option modules
- Fully solid-state, continuous SCR control
- Built-in electronic motor overload protection
- Current and voltage sensing on each phase
- Metering
- DPI Communication Protocol
- Parameter configuration options
- Energy saver mode
- Logging of the last 100 events with time stamp
- Network communication (option)
- External bypass as an option
- Conformally-coated PCBs

Table of Contents

- Modes of Operation... 4
- Features..... 9
- Cat. No. Explanation.. 14
- Product Selection 15
- Accessories..... 30
- Specifications..... 34
- Approx. Dims..... 49

Standards Compliance

- UL 508
- EN 60947-4-2

Certifications

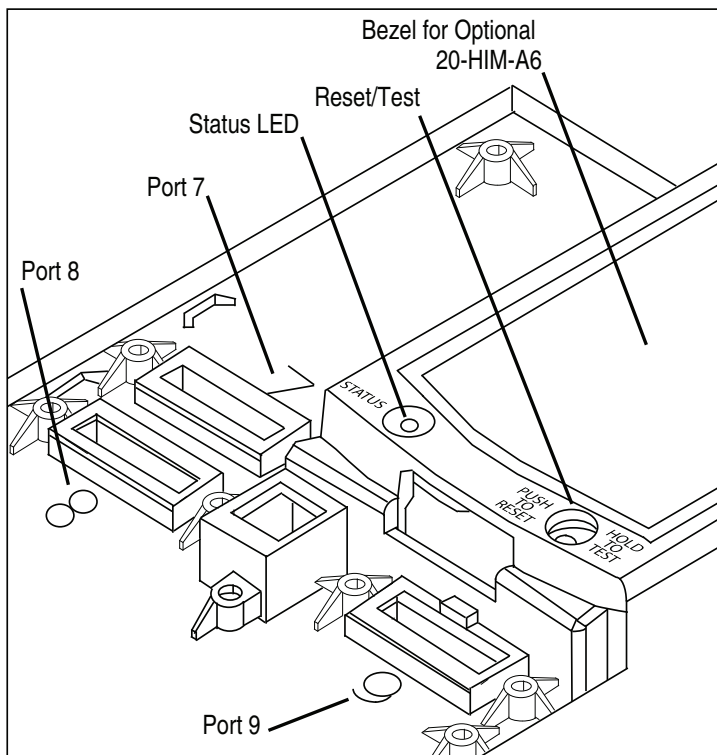
- cULus Listed (Open Type) (File No. E96956)
- CE Marked per EMC Directive and Low Voltage Directive
- CCC★
- C-Tick★
- GOST-R
- KCC★
- ABS

★ For updated certification status of controllers with 24V DC control power, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Selection Guide

This selection guide/catalog provides minimum information needed to select the proper SMC-50 Smart Motor Controller according to the motor ratings used in the application. For normal duty applications (e.g., pumps, compressors, and short conveyors), refer to the Normal Duty Product Selection tables on page 15 and page 21. For high inertia, heavy duty applications (e.g., rock crushers, wood chippers, centrifugal fans, and long conveyors), refer to the Heavy Duty Product Selection tables on page 18 and page 23. For best selection results in all cases, especially where there is frequent starting and stopping or when it is unclear if the application is Normal Duty or Heavy Duty, it is highly recommended that the free selection tools be used (available at <http://www.rockwellautomation.com>). For additional assistance, please visit www.rockwellautomation.com or contact Industrial Controls Technical Support by email at raictechsupport@ra.rockwell.com or by phone at 440-646-5800.

Product Overview



The SMC-50 Smart Motor Controller is a micro-processor based soft starter designed to maximize the efficiency of motor starts and stops. Featuring a fully solid-state design, the SMC-50 uses six SCRs (two per phase), which are always engaged (no internal bypass) to vary the conduction period and control the voltage (torque) to the motor during starting, running, and stopping. The starter has many advanced power monitoring and motor/starter protection features to help increase overall reliability. Product scalability is enabled by its three connection ports (Port 7, 8, & 9) to house additional I/O, network communication, or parameter configuration modules (a maximum of three modules). Scalability continues into the configuration of the controller via three different options: (1) a parameter configuration module with limited configuration capability using DIP and selector switches, (2) a multilingual 20-HIM-A6 controller or a panel-mount keypad with LCD display featuring more advanced configuration features, and (3) software that is PC based and network capable (e.g., Connected Components Workbench) with optimal configuration features. The SMC-50's front panel features a single, multi-colored LED status indicator which provides both diagnostics and controller status information as well as a Push-to-Reset/Hold-to-Test push button which allows manual reset of an actual fault condition, and initiates a tuning cycle or test for fault.

SMC™-50 Smart Motor Controllers

Catalog Number Explanation

Open and Non-Combination Enclosed Controllers

➔
150-S
B1
N
U
D
-

a
b
c
d
e
f

a

Bulletin Number — Product Type	
Code	Description
150-S	SMC-50 Solid-State Motor Controller
150B-S	Solid-State Motor Controller with Isolation Contactor

c

Enclosure Type	
Code	Description
F	NEMA Type 4/12 (IP65)
N	Open

e

Control Voltage	
Code	Description
D	100...240V AC (two 24V DC inputs and two relay outputs standard)
R	24V DC (two 24V DC inputs and two relay outputs standard)

b

Controller Ratings	
Code	Description
B1	90 A
B2	110 A
B3	140 A
B4	180 A
C1	210 A
C2	260 A
C3	320 A
D1	361 A
D2	420 A
D3	520 A

d

Line Voltage	
Open Type	
Code	Description
B	200...460V AC, 3-phase, 50 and 60 Hz
U	200...690V AC, 3-phase, 50 and 60 Hz
Non-Combination Enclosed Only	
Code	Description
H	200...208V AC, 3-phase, 50 and 60 Hz
A	230V AC, 3-phase, 50 and 60 Hz
B	400...460V AC, 3-phase, 50 and 60 Hz
C	500...575V AC, 3-phase, 50 and 60 Hz

f

Options - Non-combination enclosed only; see page 29 for a full list of available options

Code	Description
8L	Line-Mounted Protective Module
8M	Load-Mounted Protective Module
8B	Line- and Load-Mounted Protective Modules

Load-side MOVs are not available with pump, braking, and linear acceleration or deceleration starting and stopping modes. They should also not be used with inside-the-delta-connected motor configurations. MOVs can be field installed for open type units.

Combination Enclosed Controllers

152H-S
B1
F
BD
-
41
-
8B

a
b
c
d
e
f

a

Bulletin Number — Product Type	
Code	Description
152H-S	Solid-State Controller with Fusible Disconnect
152B-S	Solid-State Controller with Fusible Disconnect and Isolation Contactor
153H-S	Solid-State Controller with Circuit Breaker
153B-S	Solid-State Controller with Circuit Breaker and Isolation Contactor

d

Line Voltage	
Code	Description
HD	200...208V AC, 3-phase, 50 and 60 Hz
AD	230V AC, 3-phase, 50 and 60 Hz
BD	400...460V AC, 3-phase, 50 and 60 Hz
CD	500...575V AC, 3-phase, 50 and 60 Hz

f

Options - See page 29 for a full list of available options

Code	Description
8L	Line-Mounted Protective Module
8M	Load-Mounted Protective Module
8B	Line- and Load-Mounted Protective Modules

Load-side MOVs are not available with pump, braking, linear acceleration, or linear deceleration starting and stopping modes. Load-side MOVs should also not be used with inside-the-delta-connected motor configurations. MOVs can be field installed for open type units.

b

Controller Ratings	
Code	Description
B1	90 A, 60 Hp @ 460V AC
B2	110 A, 75 Hp @ 460V AC
B3	140 A, 100 Hp @ 460V AC
B4	180 A, 150 Hp @ 460V AC
C1	210 A, 150 Hp @ 460V AC
C2	260 A, 200 Hp @ 460V AC
C3	320 A, 250 Hp @ 460V AC
D1	361 A, 300 Hp @ 460V AC
D2	420 A, 400 Hp @ 460V AC
D3	520 A, 450 Hp @ 460V AC

e

Horsepower	
Code	Hp Rating
41	10
42	15
43	20
44	25
45	30
46	40
47	50
48	60
49	75
50	100
51	125
52	150
54	200
56	250
57	300
58	350
59	400
60	450
61	500

c

Enclosure Type	
Code	Description
F	NEMA Type 4/12 (IP65)
J	NEMA Type 12 (IP54)

