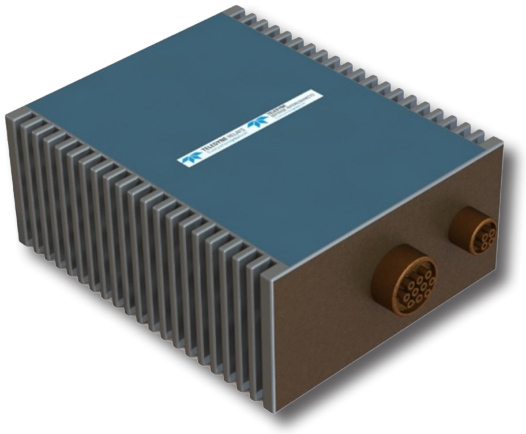
TELEDYNE RELAYS
Everywhereyoulook™

SPC Series
Smart Power Controller
10-100A - 270 VDC



FEATURES

- Silicon Carbide Power MOSFETS
- Low ON Resistance
- Single, Dual or Quad Channels
- 10A, 25A, 50A or 100A
- Bus: CAN
- Durable Aluminum Package
- 1,000 Vdc Withstand Test Voltage
- Current and Switch Voltage Drop Protection
- Constant Current Limited
- Selectable Short Current and Overvoltage Protection
- Overtemperature Protection
- Trip Status
- ESD Safe Handling (2 kV rating)
- Capacitive Load Starting

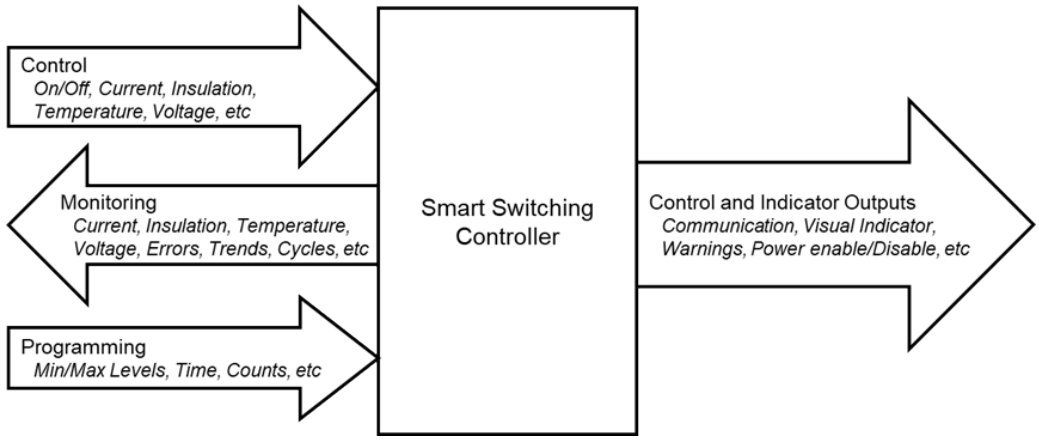
DESCRIPTION

This controller can be used in power applications that require the monitoring of critical system inputs and outputs. It contains logic to assess the signal integrity, bounds and duration. After assessing the input signals the protective relay shall then output the appropriate signals in the form of on/off conditions in the output bus.
Other requirements and specification may apply. Monitoring and programming inputs are isolated. Outputs are isolated from the control logic.

Solid State power controllers are electronic replacements for conventional Solid State and Electromechanical relays. Used to control electrical power to a downstream load and to protect the power bus and feeder cabling from a faulty load.

Remote control features allow the SSPC to replace the electromechanical circuit breakers as well as a load switching relay while providing fault current limiting thereby reducing component count, system weight and cost and increasing system reliability.

BLOCK DIAGRAM



PART NUMBERING SYSTEM

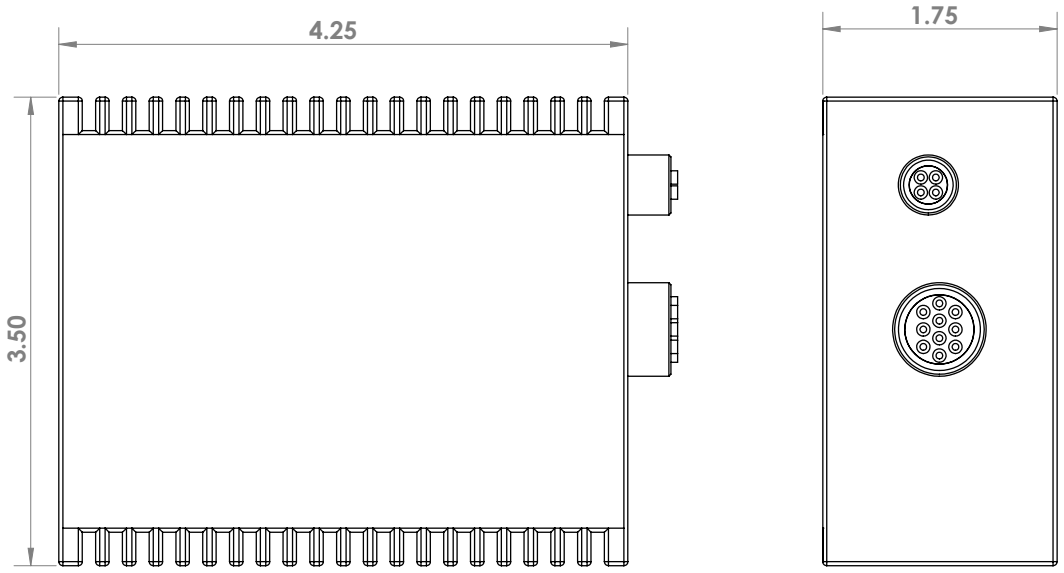
SPC 270 D 50

Series	Voltage Range	# of Channels	Current
	• 270 = 210-330 Vdc	• S = Single • D = Dual • Q = Quad	• 10 = 10A • 25 = 25A • 50 = 50A • 100 = 100A

ELECTRICAL CHARACTERISTICS

ITEM	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Rated Output Voltage	V_{LOAD}	210	270	330	V	I_{LOAD} = 100A
Rated Load Current	I_{LOAD}			100	A	V_{LOAD} = 270 VDC
Output Leakage Current	I_{LEAK}			2	mA	V_{LOAD} = 270 VDC
Output On-Resistance	Rds_{on}			10	mΩ	I_{LOAD} = 100 A
Input Bias Voltage	V_{BIAS}	4.5	5.0	5.5	V	
Input Bias Current	I_{BIAS}			50	mA	V_{BIAS} = 5 VDC
Control Voltage (High)	V_{CTRL}			2.0	V	V_{BIAS} = 5 VDC
Control Voltage (Low)	V_{CTRL}	0.8			V	V_{BIAS} = 5 VDC
Control Current (High)	I_{CTRL}			50	mA	V_{CTRL} = 2.4 VDC
Control Current (Low)	I_{CTRL}			10	mA	V_{CTRL} = 0.8 VDC
Turn-On Delay				10	msec	V_{LOAD} = 270 VDC
Turn-Off Delay				1	msec	V_{LOAD} = 270 VDC
Shorted Output Trip Time		0.5		2	msec	
Trip Reset Time				50	msec	
Max Junction Temperature				+175	ºC	
Operating Temperature		-55		+125	ºC	
Storage Temperature		-55		+125	ºC	

OUTLINE DRAWING



Dimension in inches

OVERVIEW

Monitoring Command and Monitoring Signals Isolation and Conditioning

Provides isolation against transient and high voltage events. Inputs needs to be selected depending on the type of signal to monitor. Logic Level, DC Voltage, AC voltage, DC Current, AC Current, On/OFF, Thermocouple, Resistive, Inductive, Capacitive, RF, etc.

- FET Temperatures
- Case Temperature
- Load Current
- Load Voltage
- Load Power Factor (Depends on Voltage availability).
- Capture Load Voltage/Current Transients (Only current transients if Voltage cannot be accessed independently)

Programming/Setting Inputs Isolation

Provides isolation of the programming inputs against transients and high voltage events
Programming and control bus: CAN
Programming:

- Max Temperatures (Trip points Max temperature)
- Max Current (Trip points Max Current)
- Max Voltage
- Brownouts
  - » High current vs time
  - » High Temp vs Time
- Special Trip Points
  - » Combine Duration, Temp, Voltage, Current, Trends, etc.

Assessment Logic

It provides comparison and evaluation capabilities against limits, minimums, maximums, thresholds, acceptance and rejection windows, delays, timing, etc.
It provides the capability of combining and comparing multiple inputs.
It activates outputs depending on signal conditions and/or combinations of input signals.

Output Isolation and Drivers

It isolates the Assessment Logic outputs from transients and high voltage events.
Provides power to drive outputs to specific current and voltage levels.

Opto-Isolated Hardware-Only Override/Disable Bus

It provides the option to force the output OFF. It bypasses the software control and is based on simple hardware. It gives authoring capabilities to a remote-control center if necessary.

Optional Auditing Capabilities

Real Time stamped exception event log.
Transient capture optional with extend memory.