Modicon Quantum automation platform
Power supply modules

Presentation

Quantum power supply modules serve two purposes - they provide power to the system rack and protect the system from noise and voltage swings. All power supply modules feature overcurrent and overvoltage protection. They operate in most electrically noisy environments without the need for external isolation transformers. In the event of an unforeseen loss of power, the power supply modules ensure that the system has adequate time for a safe and orderly shutdown. A power supply module converts the input voltage to regulated + 5 VDC for the requirements of the CPU, the I/O modules and those of all the communication modules installed in the rack. The power between the sensors/preactuators and the I/O points on the Quantum system is not provided by these power supply modules.

Three types of power supply module are available for use in local or remote (RIO) architectures:
- Low power standalone power supply modules
- High power summable power supply modules
- High power redundant power supply modules

For distributed I/O architectures on Modbus Plus, low power standalone power supplies are available. These are dedicated to distributed architectures and integrated in distributed I/O drop adaptors. Distributed power supplies are described in the pages on the distributed I/O architecture.

Functions

Standalone power supply modules

A standalone power supply module provides a 3 A current to the Quantum rack. When the system only requires low power, a standalone power supply module is an economical choice. These standalone power supply modules are available for 115/230 V ∿, 24 V ⎓ and 125 V ⎓ supply voltages.

Summable power supply modules

A summable power supply module provides an 8 A or 11 A current to the Quantum rack. These summable power supply modules can operate in either standalone or summable mode. When two summable power supply modules are installed in the same rack, they automatically operate in summable mode, providing a current of 16 A or 20 A (depending on the model). In summable mode, both power supply modules must be the same type and must be installed in the left and right end slots of the rack for maximum life. If one of the two power supply modules has a problem, power is lost to the rack.
If only one summable power supply module is installed in a rack, it operates in standalone mode, supplying a current of 8 A or 11 A to this rack.
Summable power supply modules are available for 115/230 V ∿, 24 V ⎓ and 48/60 V ⎓ supply voltages.

Redundant power supply modules

A redundant power supply module provides a current of 8 A or 11 A (depending on the model) to the Quantum rack. For high-availability applications, two redundant power supply modules will provide a redundant current of 8 A or 11 A.
If one of the two power supply modules is out of service, the one that remains operational maintains the supply of the required power. Each redundant power supply module has a status bit that can be monitored by the application program or by a supervision system, in order to react quickly if the power supply has a problem.
If an additional power supply module is necessary in a configuration with redundant power supply modules, a third redundant power supply module can be added to the rack, increasing the available capacity to 16 A or 20 A. If one of the three power supply modules has technical issues, those which remain operational supply a redundant current of 16 A or 20 A to the rack. If a second power supply module has a problem, power is lost to the rack.
A redundant power supply module can be used as a standalone power supply module.
Summable power supply modules are available for 115/230 V ∿, 24 V ⎓, 48/60 V ⎓ and 125 V ⎓ supply voltages.

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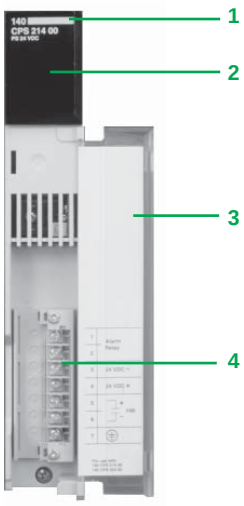

Description

140 CPS ●●● ●0 power supply modules have the following on the front panel:
1 Model number and colour code
2 A display block
3 A removable hinged door with a customizable identification label
4 A 7-way screw terminal block (degree of protection < IP 20)

To be ordered separately if required:
□ 7-way screw terminal block (degree of protection IP 20) **140 XTS 005 00**.

Compatibility of power supplies

Adhere to the following compatibility rules for applications that require the combination of two power supplies, possibly of different ∼ or ⎓ types, on the same rack.

Compatibility of summable power supplies

	Type	140 CPS 114 20	140 CPS 214 00	140 CPS 414 00
140 CPS 114 20	∼			
140 CPS 214 00	⎓			
140 CPS 414 00	⎓			

Compatibility of redundant power supplies

	Type	140 CPS 124 20	140 CPS 124 00	140 CPS 224 00	140 CPS 424 00	140 CPS 524 00
140 CPS 124 20	∼					
140 CPS 124 00	∼					
140 CPS 224 00	⎓					
140 CPS 424 00	⎓					
140 CPS 524 00	⎓					

: *Compatible power supplies*
: *Incompatible power supplies*

References

Power supply modules

Input voltage	Output current	Type	Safety	Reference	Weight kg
120/230 V ∼	3 A	Standalone	–	**140 CPS 111 00**	0.650
115/230 V ∼	11 A	Summable	–	**140 CPS 114 20**	0.650
115/230 V ∼	8 A	Redundant	–	**140 CPS 124 00**	0.650
115/230 V ∼	11 A	Redundant	Non-interfering	**140 CPS 124 20**	0.650
24 V ⎓	3 A	Standalone	–	**140 CPS 211 00**	0.650
	8 A	Summable	–	**140 CPS 214 00**	0.650
		Redundant	Non-interfering	**140 CPS 224 00**	0.650
48…60 V ⎓	8 A	Summable	–	**140 CPS 414 00**	0.650
		Redundant	–	**140 CPS 424 00**	0.650
125 V ⎓	3 A	Standalone	–	**140 CPS 511 00**	0.650
	8 A	Redundant	–	**140 CPS 524 00**	0.650

Separate part

Description	Degree of protection	Reference	Weight kg
7-way screw terminal block	IP 20	**140 XTS 005 00**	0.150

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