

ABB Ability™ Symphony® Plus

SD Series PROFIBUS Interface PDP800



ABB Ability Symphony Plus SD Series PROFIBUS interface module PDP800 provides seamless integration of intelligent field devices into Symphony Plus system via PROFIBUS protocol to reduce overall cost.

Highlights

Included in ABB Ability Symphony Plus is a comprehensive suite of standards-based control hardware and software that meets the requirements of total plant automation. SD Series PROFIBUS interface module PDP800 provides connection between the Symphony Plus controllers and PROFIBUS DP communication channels. This allows for easy integration of intelligent devices such as smart transmitters, actuators and intelligent electronic devices (IEDs). Each device's resident information can then be used in control strategies and higher level applications.

In addition to producing tighter and more reliable process control solutions, PDP800 PROFIBUS solutions lower installation costs by reducing wiring and system footprint. System

costs are further reduced by using S+ Engineering to configure and maintain PROFIBUS networks and devices and their related control strategies.

PDP800 PROFIBUS Interface Module features include:

- Support module redundancy
- Support PROFIBUS DP line redundancy
- Supports PROFIBUS DP V0, V1, V2
- Supports PROFIBUS PA devices through DP/PA linking device
- Supports 1 msec time stamping of devices by PROFIBUS DP V2
- Supports electric and fiber optic media for PROFIBUS DP link
- Up to 12 Mbps rate of PROFIBUS DP link
- Up to 15 km by fiber optic PROFIBUS DP link
- Up to 125 slave devices

Specifications

Property	Characteristic/Value
Mounting	Standard 35mm wide DIN-rail horizontally Key positions to PTU810 mounting base 1 = A, 2 = A
Microprocessor	ColdFire 32-bit processor running at 160 MHz
Memory	128 Mbytes RAM; 4 Mbytes ROM; 4 Mbytes Flash
Power requirements	24 VDC \pm 10% at 150 mA; 3.6 W typical Support redundant power inputs
Overvoltage category	Tested according to IEC/EN 61010-1 I for power
Module redundancy	Yes
Communication and Ports HN800 PROFIBUS Diagnostic service port	Redundant 4 Mbps I/O bus 2x redundant PROFIBUS DP 9-pin D-Sub connectors on PTU810 base 1x mini-USB port on module front plate
Capacity HN800 ^{1,2,3,4}	Up to 8 redundant pairs of PDP800 to one HPC800 controller Up to 2 redundant pairs of PDP800 to one SPC700 controller Up to 4 redundant pairs of PDP800 to one SPBRC400/410 controller Up to 2 redundant pairs of PDP800 to one SPBRC300 controller Up to 64 devices in total per electrical bus, up to 8 horizontal Bus Segments per electrical bus, up to 24 devices per horizontal Bus Segment Up to 30 meters total electrical bus length (includes cables + module bases) Extendable up to 3 km by fiber-optic links via cRBX01 remote bus extenders, up to 4 fiber-optic links in Star topology.
PROFIBUS	Up to 125 slave devices Supported protocols: DP-V0, DP-V1, DP-V2, PA (through DP/PA linking device) Supported baud rate: 9.6k, 19.2k, 93.75k, 187.5k, 500k, 1.5M, 3M, 6M, 12M Distance up to 15 km by fiber-optic
Dimensions	
PDP800 (with base)	124 mm width, 186 mm height, 127 mm depth (4.88 in. width, 7.32 in. height, 5 in. depth)
HBX01L (HN800 horizontal bus extender, left)	33mm width, 190 mm height, 46 mm depth (1.3 in. width, 7.48 in. height, 1.82 in. depth)
HBX01R (HN800 horizontal bus extender, right)	33 mm width, 190 mm height, 31 mm depth (1.3 in. width, 7.48 in. height, 1.2 in. depth)
cHBX01L (HN800 compact horizontal bus extender left)	30 mm width, 127 mm height, 48 mm depth (1.18 in. width, 5 in. height, 1.89 in. depth)
cHBX01R (HN800 compact horizontal bus extender right)	30 mm width, 127 mm height, 31 mm depth (1.18 in. width, 5 in. height, 1.2 in. depth)



Specifications (continued)

Property	Characteristic/Value
Weight	
PDP800 (non-redundant with base)	0.61 kg (1.34 lbs)
PDP800 (redundant with base)	0.79 kg (1.74 lbs)
HBX01L	0.136 kg (0.300 lbs)
HBX01R	0.113 kg (0.250 lbs)
cHBX01L	0.094 kg (0.207 lbs)
cHBX01R	0.082 kg (0.181 lbs)
Ambient temperature range	
Operational	0° to 55°C (32° to 131°F). Tested according to IEC/EN 60068-2-1, IEC/EN 60068-2-2
Storage	-40° to 85°C (-40° to 185°F). Tested according to MIL-STD-810G
Relative humidity	20% to 95% @ 40°C (104°F) non-condensing. Tested according to IEC/EN 60068-2-78, IEC/EN 61298-3
Vibration (operational sinusoidal)	5 to 60 Hz 0.137 mm (0.0054 in.) 60 to 150 Hz 1.0 G. Tested according to IEC/EN 60068-2-6
Vibration (transportation)	10 to 500 Hz. Tested according to MIL-STD-810G
Shock (storage)	15 G, 11 msec. Tested according to IEC/EN 60068-2-27
Drop	100 mm. Tested according to IEC/EN 60068-2-31
Altitude	
Operational	Sea level to 3,048 meters (10,000 ft.) Tested according to MIL-STD-810G
Storage	Sea level to 12,192 meters (40,000 ft.) Tested according to MIL-STD-810G
Air quality	ISA S71.04 G1 ISA S71.04 G3 compliance version PDP800A is also available
ESD Immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-2, Severity level 3
Surge immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-5, Severity level 3
Electrical fast transient immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-4, Severity level 3
Radiated RFI immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-3, Severity level 3
Conducted immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-6, Severity level 3
Magnetic field immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-8, Severity level 4
Radiated emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipment
Conducted emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipment
Voltage dips and interruption immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-11
Certification	
Canadian Standards Association (CSA)	Certified for use as process control equipment in a non-hazardous (ordinary) location
CE Mark	CE Mark EMC Directive 2004/108/EC & Low Voltage Directive 2006/95/EC

Notes:

¹ A Bus Segment is defined as the collection of HN800 devices physically connected between a pair of local Bus Extenders.

² A redundant pair of SD Series I/O modules counts as 2 HN800 devices.

³ A single or a redundant pair of cRBX01 counts the same as 4 HN800 devices.

⁴ Besides limitation of maximum number of devices, the power consumption of all devices in a Bus Segment (horizontal or vertical) cannot exceed 2.5 A.
Refer to product user manuals for detailed calculation.

Note:

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