Data Sheet

Symphony Plus
S+ Turbine: Turbine Protection Module TP800

Highlights

The Turbine Protection TP800 provides a complete set of functions for comprehensive turbine protection. The functions include Overspeed Trip, Overspeed Protection (with Acceleration Protection), Trip Anticipation, Load Drop Anticipation, and three different variations of Power Load Unbalance. The TP800 may be installed in a centralized or remote location. The TP800 integrates into DCS systems or operates standalone. Communication to the module is accomplished through the on-board Profibus interface for DCS operation or the serial interface for standalone configuration Monitoring and configuration are available via both communication ports.

Turbine Protection Module TP800

Specifications

Property	Characteristic/Value
Electrical	
Supply voltage	+24VDC +/-5%
Operating Current (no field I/O)	210 mA typical, 300 mA maximum
Power consumption (no field I/O)	5.0 W typical, 7.2 W maximum
Field I/O	+24VDC (fused @ ¼ amp)
ROM810v2 (no field I/O)	+24VDC +/-5% @ 0.02 A typical de-energized (both coils) +24VDC +/-5% @ 0.17 A typical energized (both coils)
Operating	
Low Voltage (LV1-6)	Up to 48 volts
High Voltage (HV1-2)	Up to 150 VAC/VDC
Digital Inputs (DI1-2)	Up to 220 VAC/VDC
Digital Outputs (DO1-6)	Dry Relay Contact (2-Form C), 3 A @ 150 VDC / 5 A @ 120 VAC
Performance	
Speed Input Precision	
Full Cycle Average (reported via Profibus or Modbus)	0.05 Hz (0-4000 Hz) 0.15 Hz (4000-8000 Hz) 0.35 Hz (8000-12000 Hz)
Internal Protection Functions	0.125 Hz (0-12000 Hz)
Speed Update Rate	
Full Cycle Average (reported via Profibus or Modbus)	4 ms
Full Cycle Average Internal Protection Functions	4 ms
Analog Input Precision	0.26 % Full Scale
Analog Input Update Rate	20 ms
Diigital Input Update Rate	10 ms
Digital Output Update Rate	4 ms
Profibus Process Variables In	20 ms
Overspeed Trip	< 8 ms (measured at I/O terminals, from speed input to relay driver output)

S+ Turbine: Turbine Protection Module TP800

Specifications

Property	Characteristic/Value
Performance cont.	
Trip Anticipator Protection	< 18 ms (measured at I/O terminals, from speed input to relay driver output)
Load Drop Anticipation:	< 18 ms (measured at I/O terminals, from speed input to relay driver output)
Acceleration Protection	100 ms
Power Load Unbalance	TBD
Environmental	
	CE Mark (when installed in a cabinet)
	EMC96 Directive (89/336/EEC))
Low Voltage Directive (73/23/EEC	EN50082-2 Part 2 EN61010-1 Part 1
	CSA certification (non-hazardous location)
Ambient Temperature	0° to 55° C (32° to 131° F)
Humidity	5 % to 90 % RH (±5 %) up to 55°C (non condensing) 5 % to 40 % RH (±5 %) up to 70°C (non-condensing)
Atmospheric Pressure	Sea level to 3 km (1.86 miles)
Air Quality	Non-corrosive
Installation Category	Category II per ANSI/ISA-S82.01-1994
General	
Dimensions	123 mm width, 186 mm height, 122 mm depth 4.84 in. width, 7.32 in. height, 4.8 in. depth
Microprocessors	MCF5272 with 16 MB Flash, 25 MHz, 16 MB DRAM
System Communications	Profibus DP, Modbus
Module Mounting	Each module occupies one slot in a Termination Base Unit (TBU810)
I/O Termination	Termination Base Unit (TBU810)
TBU810 Cabinet Mounting	Standard 35 mm DIN Rail
TU Terminal Blocks 24 A / 250 V Compression	 0.2–4 mm^2 [solid] / 0.2–2.5 mm^2 [stranded] / 24–12 AWG

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
Symphony and Symphony Plus are registered or pending trademarks of ABB.

ABB Inc.
Power Generation
Wickliffe, Ohio, USA
Phone: +1 440 585 3087
Email: powergeneration@us.abb.com

ABB AG
Power Generation
Mannheim, Germany
Phone: +49 621 381 3000
Email: powergeneration@de.abb.com

ABB Pte. Ltd.
Power Generation
Singapore
Phone: +65 6776 5711
Email: powergeneration@sg.abb.com

ABB S.p.A
Power Generation
Genoa, Italy
Phone: +39 010 607 3512
Email: powergeneration@it.abb.com

www.abb.com/symphonyplus
www.abb.com/powergeneration

Power and productivity
for a better world™