

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 |
| Digital 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

© Copyright 2015 ABB

All rights reserved. Specifications subject to change without notice. Pictures, schematics, and other graphics contained herein are published for illustration purposes only and do not represent product configurations or functionality. User documentation accompanying the product is the exclusive source for functionality descriptions.

Symphony is a registered or pending trademark of ABB S.p.A.
All rights to other trademarks reside with their respective owners