DOBLE PROTECTION TESTING

F8 COMMAND MODULE

Instrument control, communication, and synchronization

The Command Module is embedded in each F8 chassis and drives all system operations controlled from either Protection Suite or RTS software. This powerful interface provides connectivity for instrument communication and synchronization functions and can be easily expanded for digital testing with available firmware that supports protocols based on IEC 61850.

Communications

- 2 x SFP (copper & fiber) ports (1 Gbps each)
- 3 x Ethernet ports (10/100/1000 Mbps each)
- 1 x 40 W Power over Ethernet (PoE) port
- 1 x USB 3.0 port (Type C)

Time synchronization

- Pulse-per-second (PPS)
- IRIG-B modulated & unmodulated
- Simple Network Time Protocol (SNTP)
- Network Time Protocol (NTP)
- IEEE 1588 / IEC 61850-9-3 Precision Time Protocol (PTP)
- Global Navigation Satellite Systems (GNSS)

IEC 61850

- Sampled Values - IEC 61850 9-2 Amendment 1 (includes IEC 61869-9 & 9-2 LE profiles)
- GOOSE / R-GOOSE (publishing & subscribing)

Available Firmware Options:

- F8850 GOOSE & Sampled Values
- F8860 GOOSE
- F8870 Sampled Values

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F8 Command Module Technical Data		
Communications	SFP	Ports 1 & 2 Copper/fiber selectable 1 Gbps each
	Ethernet	Ports 3, 4 & 5 Port 5 PoE at 40 W (57 V) 10/100/1000 Mbps each
	USB	1 x 3.0 Type C
Time Synchronization	PPS	NTP GNSS (Global Navigation Satellite Systems): GPS, QZSS, GLONASS, BeiDou
	IRIG-B	Modulated B120 Unmodulated B000
	PTP	1588 v.2 as Grandmaster or subscriber IEC 61850-9-3 Power Profile and Power Utility Profile as subscriber only
	SNTP	IP v.4 and IP v.6 Networks
IEC 61850	Performance	Type 1A Class P2/3 (IEC 61850-5)
	Certifications	IEC 61850 Edition 2 with Amendment 1 Parts 6, 7-1, 7-2, 7-3, 7-4, 8-1, 9-2, and IEC 61869 First Edition Part 9 Conformance Blocks: 9a: GOOSE publish 9b: GOOSE subscribe 11a: Sampled Values publish 13a: Time Sync SNTP 13b: Time Sync PTP Certificates available upon request.
	VLAN Support	Selectable priority and VLAN-ID
	Publishing - Sampled Values	IEC 61850 9-2 Amendment 1 (includes IEC 61869-9 and 9-2 LE profiles) 12 streams 64 sources* *The maximum of 12 streams cannot contain more than the maximum of 64 total available sources. Apply sources in your test cases in consideration of the following: • For 61869-9, maximum of 24 sources per stream. • For 9-2 LE, fixed quantity of 8 sources per stream. • I/O expends only one source regardless of quantity of analog and/or digital I/O signals.
	Publishing - GOOSE / R-GOOSE	> 1024 configurable virtual outputs (128 messages)
	Subscribing - GOOSE / R-GOOSE	1024 configurable virtual inputs
Other	Future Use	1 x USB 3.0 Type A
		1 x EXP Port
General	Display	Diagnostics at boot up
	Weight	2.25 lbs. (1.02 kg)

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