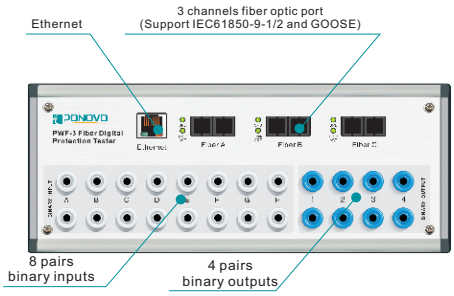
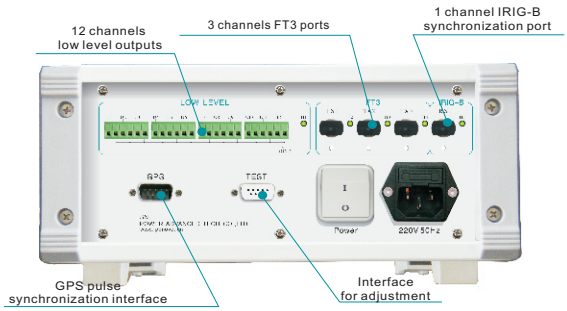
PWF-3 Fiber Digital Protection Tester

PWF–3

PWF-3 provide perfect testing solutions for intelligent substations.





PWF-3 Front and real panels

Features

- 3 channel fiber optical ports to transmit sampling value based on IEC61850-9-1/2.
- 3 channels FT3 ports to transmit sampling value based on IEC60044-8. Publish and subscribe GOOSE information or output and receive binary for closed-loop relay test application.
- Provide 12 channels low-level output ports for small signal relay application.
- IRIG-B or PPS port to make synchronization test.
- Synchronization triggering failure function to realize joint test between several substations.
- Analyze SCL (SCD, ICD and CID) documents to get automatic configuration of sampling value and GOOSE message. Sampling value and GOOSE configuration information are saved as a document.
- Simulate SV abnormal state, such as frame drop, abnormal data and serial number deviation, etc.
- Get setting value, sampling value and action report through MMS port.
- Manually and automatically simulate various faults.

Specifications

Ethernet port

Characteristic	10/100 base (10/100Mbit, twisted pair, crossover)
Number	1
Type	1 only
Cable	category 5 twisted pair
Status indication	LED green lighted: effective connection LED yellow flashing: data transfer in process

Fiber optic port

Characteristic	100 base-FX (100Mbit,fiber optic, full-duplex)
Number	3 pairs
Type	SC
Cable	62.5/125μm(multimode fiber, orange)
Wavelength	1300nm
Transmission distance	>1Km
Status indication	SPD green lighted: effective connection Link/AcT green lighted: effective connection; flashing: data transfer in process

FT3 Port

Standard	IEC60044-7/8
Number	3
Type	ST
Wavelength	850mm
Cable	62.5/125μm(multimode fiber, orange)
Transmission distance	1km
Status indication	H2,H3 and H4 green flashing, data transfer in process

Synchronization interface

GPS synchronizing interface	can connect to optional PGPS-02 (GPS) device
PIRIG-B01 (B-code) interface	ST
Type	connecting with multi mode fiber optic (62.5/125um) ST-ST.
Status indication	H5 green flashes at 1/s while receiveing B-code

Low level output

Signal amplitude

Output channel	12
Setting range	AC:0~7.07Vrms (effective value)
Max. output current	0-10 Vpk 1mA >0.1 Vpk: error<2% <0.1 Vpk: error<1%
Accuracy	0.07~7.07 Vrms: error<0.2% 0.01~0.07Vrms: error<1%
Resolution	250μV
Harmonic distortion THD%	<0.1%

Frequency

Sine signal	10~250Hz
Transient signal	DC~10.0kHz
Accuracy	0.002% (power frequency, error 1mHz)
Resolution	0.001Hz

Phase

Phase angle	-360~360°
Accuracy	<0.1°,50/60Hz
Resolution	±0.001°
Status indication	H1 green flashing: there is analog value output.

Binary Inputs

Number	8
Input characteristic	30V~250V(DC) threshold or potential free
Sample rate	10kHz
Time resolution	100μs
Max. measuring time	1.50×10^5 s
Time error	±1ms (0.001s~s) ±0.1%(1s~1.50×10^5 s)
Debounce/Deglitch time	0ms~25ms
Galvanic isolation	8 galvanicaly isolated
Threhold impedance para. (free potential)	5 kΩ…13kΩ

Binary outputs

Number	4
Type	potential free relay contacts, software controlled
Break capacity AC	Vmax:250V（AC）/Imax:0.5A
Break capacity DC	Vmax:250V（DC）/Imax:0.5A

Power supply

Nominal input voltage	220V（AC）
Permissible input voltage	100V~240V（AC）
Nominal frequency	50/60Hz
Permissible frequency	40~60Hz
Current	1A(max)

Dimension and weight

PWF-31	391mm×297mm×182mm(W×H×D) 7.4kg
PWF-3	260mm×120mm×370mm(W×H×D) 4kg

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ISO 9001 QMS
ISO 14001 EMS
OHSAS 18001