

D25 Product Specifications

Technical Specifications

Port Configurations

AC Analog Inputs	0, 3, 6, 9, 12 or 15 inputs
DC Analog Inputs	0, 8 or 16 inputs
Digital Status Inputs	0 to 96 inputs in increments of 32
Control Outputs	0, 8, 16 or 32 trip/close pairs
Host Comm Ports	2 serial (38.4 Kbps) or 2 Ethernet (10 Mbps)
IED Comm Ports	2 (38.4 Kbps)
Time Sync	1 IRIG-B Input
Configuration Port	1 Maintenance port
Display	1 D25 Display Port (9600 bps)

Power Requirements

Input Options	<ul style="list-style-type: none"> ----- 20-60 Vdc (not available with graphic display) ~~~~~ 60-150 Vdc/85-135 Vac 50/60 Hz (CE) ===== 150-350 Vdc/187-265 Vac 50/60 Hz (CE)
Maximum Power Consumption	65 W
Maximum Inrush Current on Cold Start	18 A (peak Amps)
Maximum Inrush Current under Dynamic Conditions of 5 Seconds on and 1 Second off	45 A (peak Amps)

Communication Ports

Maintenance Port	WESMAINT II+ DB-9-F, RS-232 @ 9600bps
D25 Display Port	DB-9-F, RS-485 @ 9600bps
UTC Time Port	DB-9-F, RS-232/RS-422
Standard Serial Communication Ports (2)	DB-9-F, RS-232/485 up to 38400bps
Optional Communication Ports (2)	DB-9-F, RS-232/485 up to 38400bps, software configurable or Ethernet/802.3 10BASE2, 10BASE-T or 10BASE-FL

AC Analog Value Measurement

Configuration Options	Direct AC analog inputs from CTs and PTs. Supports up to six 3-phase circuits
Analog Inputs	15 AC analog inputs organized in groups of three (3) inputs, Transformer isolated
Sampling Rate	64 samples per Power Line Cycle
A/D Resolution	13 bits plus sign

AC Voltage Inputs

Nominal PT Input Options	63.5 Vrms, 69.3 Vrms, 110 Vrms, 120 Vrms, 220 Vrms
Measurement Range	0% to 250% of nominal
Overload Voltage	250% of nominal continuous 350% of nominal for one (1) minute
Burden	Less than 0.1 VA @ nominal input
Accuracy (Refer to PRPI-040 for Details)	±0.5 % of nominal

AC Current Inputs

Nominal CT Input Options	1 A rms or 5 A rms
Measurement Range	2% to 1600% of nominal for value measurement; 2% to 4200% (asymmetrical) of nominal for DFR and protection
Thermal Overload	4 times nominal – continuous 30 times nominal – 10 seconds 100 times nominal – 1 second 10 minute duty cycle for inputs greater than 4 times nominal
Burden	16x 1A & 5A CT – Less than 0.2VA @ nominal input. 42x 1A CT – Less than 0.05 VA @ nominal input. 42x 5A CT – Less than 0.1 VA @ nominal input.
Accuracy (Refer to PRPI-040 for Details)	16x 1A & 5A CT- ±0.5% of nominal 42x 1A & 5A CT- ±0.3% of nominal

General AC Features

RMS Data	RMS magnitudes and phase angles for measured inputs. Supports L-L or L-N PT connections with calculation of L-L or L-N magnitudes and phase angles
Metering	Electrical Power supports 1, 2, 21/2 and 3 element metering providing active, reactive, and apparent power; power factor per phase and circuit totals. Also provides displacement power factor angle per phase
Power Quality	THD and harmonic spectrum data to the 21st harmonic for each AC input
Electrical Energy	Import and export accumulators for kWh, kVAh, kVArh
Unbalance Detection	Symmetrical component circuit unbalance detection and maximum deviation from average methods
Alarming	High and low alarms on any analog data with qualifications of one power cycle or more
Line Frequency	50/60 Hz
Oscillography	Waveform and event recording on up to 15 AC analog channels simultaneously with concurrent capture of up to 250 digital input points Analog sample rate: 64 samples/cycle Record length: 240 cycles with programmable pre- and post-capture times
Protection	3-step definite time over-current protection and breaker failure protection on all configured circuits

DC Analog Value Measurement

Analog Inputs	16 DC analog optically isolated differential inputs
Sampling Rate	40 samples/second @ 50 Hz; 50 samples per second @ 60 Hz; 2 samples are averaged before captured in the database (effective reporting rate is 20 samples/sec @ 50 Hz, 25 samples/sec @ 60 Hz)
A/D Resolution	14 bits plus sign

DC Voltage

Nominal Input Range	±5 Vdc
Measurement Range	±6 Vdc
Overload Voltage	±30 Vdc (NM) continuous, ±200 Vdc (CM) continuous
Input Impedance	More than 10 MΩ
Accuracy	±0.05% of full scale
Temperature Coefficient	±15 ppm/°C

DC Current

Nominal Input Range Options	±1 mA, ±5 mA, ±10 mA, or ±20 mA
Input Burden	5K to 250Ω (1 to 20 mA)
Accuracy	±0.10% of full scale
Temperature Coefficient	±30 ppm/°C



specification sheet

Digital Inputs

General	Up to 96 optically isolated (5000 Vrms), organized in cards of 32 inputs
Digital Input Options	One of: 12, 24, 48, 120, 250 Vdc \pm 20%, bipolar inputs
Burden	2 to 6 mA, maximum power dissipation is 0.5 W per input
Contact Debounce	Three-level programmable software filtering for debounce and chatter
Configurable Input Types	Digital input, Sequence of Events with time-tagging accuracy of 1 ms, Change of State, Up to 8 digital inputs as Pulse Accumulator
On-Board Wetting Supply (not available with graphical display)	24 Vdc or 48 Vdc (depends on supply ordered), isolated, external wetting optional

Digital Outputs (D25KE)

Standard Digital Outputs	8, 16, 24 or 32 relay outputs switch one side of the controlled load; single component failure protection and detection preventing false control of any coil driver output; select-check-before execute security; master trip/master close bus scheme
Configurable Output Types	Latching (On/Off), Trip/Close, Raise/Lower, Programmable pulse duration from 5 to (231-1) ms in 1 ms intervals
Output Relay Contacts	1 Form A
Maximum Switching Power	60 W or 125 VA (resistive)
Maximum Switching Voltage	75 Vdc or 50 Vac (DB-25) 120 Vdc (FACE-40)
Maximum Switching Current	2 A
Maximum Carrying Current: 2 A	Operate Time: 5 ms
Release Time	5 ms
Breakdown Voltage	1500 Vac for one minute (coil to contact)
Isolation between Adjacent Outputs	300 Vdc (with compression terminal block), 100 Vdc (with DB-25 connectors)
Interposing Relay Option	Groups of 8 digital outputs can be directly interfaced to D20KI module

Auxiliary Digital Outputs

Radio Keying Output Relay Contact	1 Form A
Auxiliary Control Output Relay Contacts	1 Form A
System Fail Relay Contacts	1 Form B
Maximum Switching Power	60 W (resistive), 125 VA
Maximum Switching Voltage	75 Vdc or 50 Vac
Maximum Switching Current	2 A
Maximum Carrying Current	2 A
Breakdown Voltage	1500 V (coil to contact)

Available Displays

Alphanumeric	Backlit LCD with keypad
Graphical	Backlit LCD with touch screen, 320 X 240 pixels, 4.76" X 3.58"

Physical Specifications

Dimensions	19" (48cm) Width, 8.75" (22cm) Height, 9" (23cm) Depth
Weight	31 lbs. (14.1kg) maximum
Operational Temperature	-20°C to +70°C (without display), 0°C to +60°C (with alphanumeric display), 0°C to +50°C (with graphical display)
Storage Temperature	-40°C to +90°C (without alphanumeric display), -20°C to +70°C (with alphanumeric display), 0°C to +70°C (with graphical display)
Humidity Rating	0 to 95% relative humidity, non-condensing
Environmental Rating	IP20
Installation/Over-voltage category	Class II
Pollution Degree	2

D25 Generation 4 Product Compliance Table

EN55011	Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment
EN61000-3-2	Limits for Harmonic Current Emissions (applicable for AC power supply only)
EN61000-3-3	Limitation of Voltage Fluctuations and Flicker in Low-voltage Supply Systems for Equipment with Rated Current \leq 16 A (applicable for AC power supply only)
EN61000-4-2	ESD/Immunity Test
EN61000-4-3	Radiated, radio-frequency, electromagnetic field immunity Test
EN61000-4-4	Electrical Fast Transient/Burst Immunity Test
EN61000-4-5	Surge Immunity Test
EN61000-4-6	Immunity to conducted disturbances induced by radio-frequency fields
EN61000-4-8	Power frequency magnetic field immunity test
EN61000-4-11	Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests (applicable for AC power supplies only)
EN61000-4-12	Oscillatory Waves Immunity Test
EN61010-1	Product safety
IEC® 68-2-1	Cold
IEC 68-2-2	Dry heat
IEC 68-2-6	Vibration
IEC 68-2-30	Damp heat, cyclic (12+12-hour cycle)
IEC 68-2-31	Drop and topple
EN60255-5	Dielectric Test Impulse Voltage Test Insulation Resistance
EN61000-4-16	Test for Immunity to Conducted, Common Mode Disturbances in the Frequency Range 0 Hz to 150 kHz (steady state frequency)
EN61000-4-16	Test for Immunity to Conducted, Common Mode Disturbances in the Frequency Range 0 Hz to 150 kHz (dynamic frequency)

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