SHERLOG CRX 1232 | 2032

SPECIFICATIONS

General description

SHERLOG CRX 1232|2032 are multi-functional measurement and analysis systems for comprehensively monitoring and assessing equipment in electricity supply systems. They combine the monitoring functions of high-resolution digital fault recorders, power quality analysers, phasor measurement units, continuous data recorders and event recorders in one device.

Individual devices can be networked via an Interlink interface to monitor extensive installations.

Multi-processor system	Digital signal processor (DSP) for processing signals and processes in real time Communication processor for mass data storage, simultaneous data communication using different interfaces and protocols, web server functionality and stand-alone operation
User controls and displays	8 status LEDs for alarm, trigger and status display 3.5" colour graphical display with touch screen and 4 function keys

	SHERLOG CRX 1232	**SHERLOG CRX 2032**
Number of measurement inputs	12 analog inputs 32 binary inputs	20 analog inputs 32 binary inputs

Data memory	32 GB flash RAM for reliable data storage
Quality system	Developed and manufactured to DIN ISO 9001
Calibration	Software-controlled calibration Recommended calibration cycle: check every 5 years
Operating software	SHERLOG operating software for Windows 7, Windows 8.1 (32 and 64 bit), Windows 10 (32 and 64 bit), Windows Server 2012 R2

Function overview

Recording functions	Digital fault recorder, 2 sampling rates from 500 Hz…30 kHz RMS fault recorder, sampling rate from 1 Hz...120 Hz Continuous data recording Event data recording Power quality analysis, class A (optional) Phasor measurement unit/PMU (optional)
Standards for measurement and analysis	IEC 61000-4-30 class A IEC 61000-4-7 harmonics and interharmonics IEC 61000-4-15 flicker EN 50160, IEEE 519, IEEE 1159 IEEE C37.118

Analog inputs	General information	Resolution	16 Bit, S/R: 92 dB typical	
		Sampling frequency	200 kHz per channel	
		Accuracy	0.05% of range	
		Protection	Galvanic isolation Channel-channel: 2.5 kV; channel-device: 2.5 kV	
	Voltage inputs	Number of measurement inputs	8 inputs	
		Measuring ranges	Channel 1…8: 300 VAC / ± 424 VDC; impedance 6.0 MΩ	
		Overload	1000 VAC sustained	
		Frequency range	DC…10 kHz	
	Current inputs		**SHERLOG CRX 1232**	**SHERLOG CRX 2032**
		Number of measurement inputs	4 high-current inputs for connection to protection or instrument transformers	12 high-current inputs for connection to protection or instrument transformers
		Measuring range	100 AAC; impedance 0.002 Ω	
		Overload	40 AAC sustained 200 AAC for 5 seconds 500 AAC for 1 second	
		Frequency range	10 Hz…10 kHz	
Binary inputs		Number of measurement inputs	32 inputs Galvanically isolated in 8 groups of 4 inputs	
		Response threshold	Response threshold configurable via software: 24 VDC, 48 VDC, 110 VDC, 220 VDC	
		Voltage range	0…300 VDC for all response thresholds	
		Resolution	0.1 ms	
		Protection	Transient protection Polarity protection Galvanic isolation up to 2.5 kV	
Switching outputs	Mechanical relays	Number	6, freely configurable for status and alarm signals	
		Contact type	Potential-free relay contact, 4 x changeover contact, 2 x normally open contact	
		Switching capacity	Max. 220 VAC, 8 AAC, max. 60 W Max. continuous current: 2 AAC Required fuse: 2.5 A slow blow	

Interfaces	Time synchronisation	Internal real-time clock	Accuracy 2.5 ppm without external time synchronisation
		NTP/SNTP	Synchronisation over Ethernet network
		Interlink interface	Master-slave time synchronisation between several SHERLOG CRX devices
		GPS receiver	Internal GPS receiver with SMA antenna connection Accuracy of internal seconds pulse: <60 ns
		Telegram input	Electrical inputs for connecting time telegrams of external sources - GPS time telegram: NMEA-0183-RMC, 4800 Baud - DCF 77 – pulse telegram - IRIG-B telegram to B001-, B002- and B003
		Pulse input for seconds pulses	PPS impulse input 5…12 V / 24…80 V , min. pulse width 5 ms
	Data communication	Front panel	1x USB-A 1x USB-B 1x RS232
		Back panel	1x RS232 / RS485 3x electric Ethernet (RJ 45) 1x optical Ethernet (SC)
		Division of Ethernet interfaces	MAC/IP address 1: 1x electrical MAC/IP address 2: 2x electrical, 1x optical
	Interlink interface		Electric 2-wire interface for networking a number of SHERLOG CRX devices Enables cross-triggering and master-slave time synchronisation over distances of up to 500 m
	Protocols	Standard: TCP/IP, Modbus TCP, IEC 60870-5-103, GSM, GPRS Optional: IEC 61850, IEEE C37.118 (PMU)	
Power supply	Operating voltage	Wide-range power supply unit, nominal range 100...250 VDC and 90...250 VAC; 47...63 Hz Working range: +6% / -10% of the nominal range	
	Power consumption	Max. 20 VA	

Complete system	Mechanical properties	Weight	2.5 kg
		Housing	19" housing for rack mounting, 84 HP/3 U
		Protection class	IP 52 (front panel)
		Dimensions	483 mm x 132.5 mm x 150 mm
	Environment	Storage temperature	-20…70°C
		Maximum temperature limit	-5…55°C, minimum switch-on temperature 0°C
		Relative humidity	5…95%, non-condensing
		Other	RoHS-compliant
	Generic standards	Safety	EN 61010-1, 300 V CAT III
		EMC emissions	EN 61000-6-4 (replaces EN 50081-2)
		Susceptibility	EN 61000-6-2 (replaces EN 50082-2)
	Measurement category		300 V CAT III; 150 V CAT IV
EMC standards	IEC 60255-1		Measuring relays and protection equipment - Part 1
	IEC 60255-5	IEEE C37.90	Dielectric test, 2.5 kV, 50 Hz Insulation test, 500 V, 50 Hz Impulse voltage test, 5 kV, 0.5 Joule
	EN 55011	CISPR 11 CISPR 16 CISPR 22	Radiated radio disturbances 30…230 MHz at 10 m, 40 dB (µV/m) 230…1000 MHz at 10 m, 47 dB (µV/m)
	EN 55011	CISPR 11 CISPR 16 CISPR 22	Conducted radio disturbances 0.15…0.5 MHz, 79 dB (µV) Q, 66 dB (µV) A 0.5…5 MHz, 73 dB (µV) Q, 60 dB (µV) A 5…30 MHz, 73 dB (µV) Q, 60 dB (µV) A
	IEC 61000-4-2	IEC 60255-22-2	Electro-static discharge test, class 4 8 kV contact, 15 kV air
	IEC 61000-4-3	IEC 60255-22-3	Radiated susceptibility 10 V/m, 80…3000 MHz, AM 10 V/m, 900 MHz, PM
	IEC 61000-4-4	IEC 60255-22-4 IEEE C37.90.1	Electrical fast transient burst 4 kV, 2.5 kHz, 5 kHz, 100 kHz
	IEC 61000-4-5	IEC 60255-22-5	Surge test, class 4 4 kV common mode 2 kV differential mode
	IEC 61000-4-6	IEC 60255-22-6	Conducted susceptibility 10 V, 150 kHz…80 MHz
	IEC 61000-4-8	IEC 60255-6	Power frequency magnetic field 30 A/m, 50 Hz, x, y, z axis
	IEC 61000-4-11	IEC 60255-11	Supply voltage dips and interruptions, class 3
	IEC 61000-4-18	IEC 60255-22-1	Damped oscillatory waves 2.5 kV, 1 MHz common mode 1.0 kV, 1 MHz differential mode
Vibration Standards	IEC 60068-2-6	IEC 60255-21-1	Vibration test 5.2 g, 5…55 Hz, x, y, z axis
	IEC 60068-2-27	IEC 60255-21-2	Vibration test 5 g / 11 ms, x, y, z axis
Climatic standards	IEC 60068-2-1		Cold storage test Storage at -45°C for 96 hours, Operation at -5°C for 16 hours
	IEC 60068-2-2		Cyclic temperature test, dry heat 16 hours, 55°C, operating condition 96 hours, 70°C, power off condition