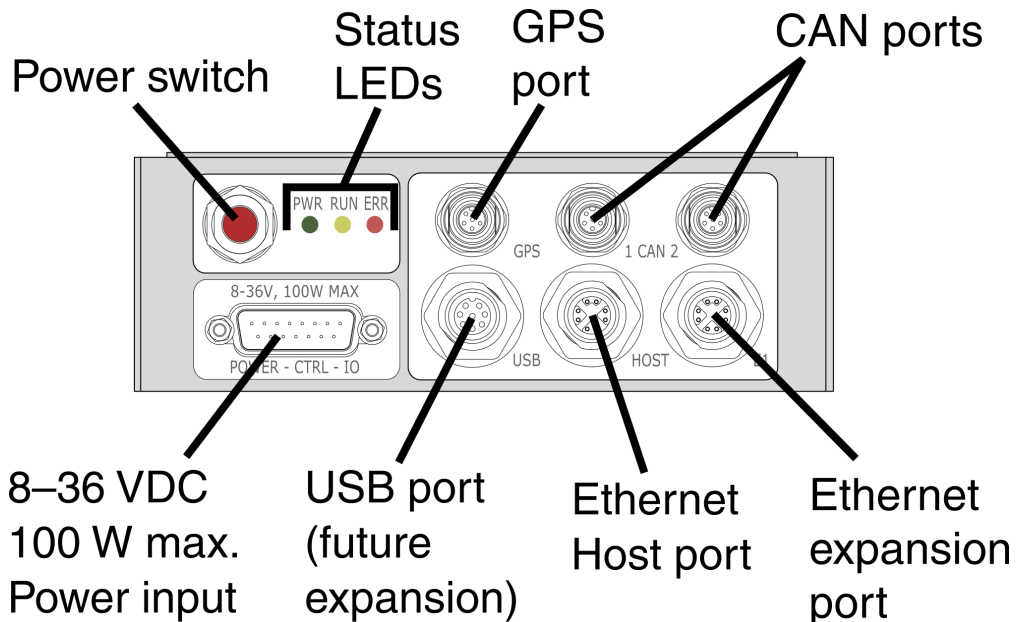


# EXRLCPU

## Main Processor Layer

- Small footprint
- Designed for harsh environments
- Supports up to 8 signal conditioning layers (ELNTB, ELBRG, ELHLS or ELDIO)
- Wide range of inputs
- Wide thermal range: -40 to +80 °C
- 8 to 36 V DC input power
- 1 GPS (5 Hz / 200 Hz)
- 2 CAN ports
- Internal capacitors to protect data if power is lost
- 1 Gigabit Ethernet, PTPV2 capable
- Rugged: IP57, MIL202
- Secure test setup and control through a web browser



## Specifications

General Specifications		
Parameter	Unit	Value
Dimensions (H x W x D)	mm	85 x 174 x 127 with base and lid
Weight	g [lb]	1,670 [3.68] with base and lid
Data storage capacity (SD FLASH) storage file type	GB -	64 SIE
Processing features	-	auto power fail test restart, storage full protection
Power button (push contact)	-	power on/off switch, password and IP address reset control
Input power supply voltage range current (maximum) over voltage/reverse voltage protection	- V <sub>DC</sub> A -	- 8 ... 36 (on 10V, off 8V) 10 Yes
System power (maximum)	W	100 (system configuration; 8 layers, transducer power, CPU power, etc. must be under 100W)
Power consumption (without CAN power) <sup>1)</sup>	W	15
Ethernet protocol connection crossover maximum cable length	- - - - m	100Base-TX/1000Base-T TCP/IPv6 or TCP/IPv4 M12 X-code shielded twisted pair cable (CAT-5E) Auto MDI/-X 95 at -40 °C, 85 at 20 °C, 75 at 75 °C <sup>2)</sup>
Ethernet ports HOST E1	- - -	- 1 Gigabit, connection to PC, router or WiFi device Connection to MX module, or networking two eDAQXR-lite systems
Precision timing protocol (PTP) (expansion module port) device type protocol accuracy	- - - ns	Version 2 (IEEE 1588) ordinary clock IPv6 multicast <200
USB 2.0	-	for future expansion
Storage temperature range	°C [°F]	-40 ... +85 [-40 ... +185]
Operating temperature range Altitude de-rating maximum temperature a 0 m maximum temperature a 2500 m maximum temperature a 5000 m	°C [°F] - °C [°F] °C [°F] °C [°F]	-40 ... +80 [-40 ... +176] <sup>3)</sup> - +80 [+176] +70 [+158] +55 [+131]
Relative humidity range	%	5 ... 100
Protection class	-	III
Degree of protection -	- -	IP57 per EN 60529:2005 (When the EXRLCPU is attached to eDAQXR-lite layers)
EMC requirements	-	CE conformity test per EN 61326-1:2012
Evaluated for safety according to	-	IEC61010-1:2010

General Specifications		
Parameter	Unit	Value
Mechanical test	-	-
Vibration acceleration	m/s <sup>2</sup> [g]	accord. MIL-STD202G, Method 204, Test Condition D 196 [±20]
Shock acceleration	m/s <sup>2</sup> [g]	accord. MIL-STD202G, Method 213B, Test Condition H 736 [±75]
Load dump	-	ISO 16750-2:2010 Test B 63 V <sub>peak</sub>
Internal I/O Specifications		
Sample rates <sup>4)5)</sup>	Samples/s Samples/s	Decimal: 0.1 ... 100,000; Binary: 0.1 ... 98,304 (legacy only); HBM Classic: 0.1 ... 96,000
Control I/O	-	2 inputs (pins 3, 4, pulled up to V <sub>in</sub> , pins 10, 11 ground), 3 outputs (pins 5, 12, 13)
connector	-	female 15-pin D-Sub
isolation (signal/ground to chassis)	V	500 <sup>6)</sup>
input voltage limit	V	8 ... 36
threshold level	mV	1/3 V <sub>in</sub> threshold, 1.5V Hysteresis
output current sink	mA	350
output voltage	V	±60
output update rate	Hz	1 to 100 Hz (based on frame rate)
CAN	-	2 CAN connectors
Channels per connector	-	unlimited
CAN standards	-	ISO 11898 CAN 2.0A and 2.0B, CAN FD ready
CAN protocols	-	No
connector	-	female 6-pin M8
isolation (signal/ground to chassis)	V	500 <sup>6)</sup>
baud rates	bps	1M, 800k, 666.6k, 500k, 400k, 250k, 125k, 100k, 50k, 41.6k
termination	Ω	120 or unterminated
CAN supply voltage (shared power)	V	12
CAN current limit	A	1
GPS	-	1 GPS
connector	-	female 6-pin M8
isolation (signal/ground to chassis)	V	500 <sup>6)</sup>
power supply voltage	V	0, 5, or 12 (auto selected) ±5%
power supply current limit	A	1
baud rate	bps	300 ... 1M (default of 38.4k)
compatible with 1-EGPS-5HZ-2	-	NMEA PPS 5 Hz updates
compatible with 1-EGPS-200-B-2 / P-2	-	NMEA PPS 200 Hz updates
Status LEDs	-	-
POWER (green)	-	system power indicator
RUN (yellow)	-	test running (data processing) indicator
ERROR (red)	-	system alert or error

<sup>1)</sup> Power consumption measurements include the efficiency of the power supply.

<sup>2)</sup> Based on shielded cable lengths. Cable lengths up to or over 100 m possible using unshielded solid conductor twisted pair at 25°C.

<sup>3)</sup> When used with ELNTB, ELBRG, ELHLS or ELDIO layers, de-rate operating temperature to -25°C ... +65°C [-4°F ... +149°F].

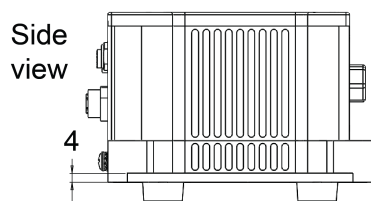
<sup>4)</sup> Internal data sources only. For external data sources, refer to the appropriate data sheet.

<sup>5)</sup> Sample rate has no lower limit with use of Down Sampler computed channels.

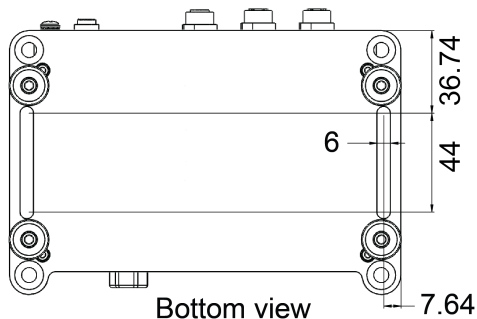
<sup>6)</sup> There is no ground to chassis isolation when eDAQ-lite layers are used.

Data Processing Parameter	Value
Data sources (EXRLCPU connectors)	1 Power-Control-IO (2 in, 3 out), 1 GPS, 2 CAN and 1 USB (future expansion)
Computed channels - - -	Anomaly detect, Bitmap trigger, Directional velocity, Down sampler, Function generator, Integrator, Interactive trigger, Over range detector, Pulse frequency, Run stopper, Signal calculator, Smoothing filter, State mapper, Statistics, Time base shifter, Time channel, Timed Trigger, Track, Triggered latch, Triggered zero suppression, Up sampler
Storage modes (Somat DataModes™) -	Time History, Burst History, Time at Level, Peak Valley, Peak Valley Matrix, Rainflow, Event Slice, Burst Message Logger, Message Logger
Run-time data visualizations -	single channel and multi-channel strip chart plots, digital meters, min/max/alarm digital trackers, single channel frequency spectrum charts and analog gauges

### Mounting diagram



All measurements are in millimeters.



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