

TECHNICAL REFERENCE MANUAL

KRYPTON V26-1



6. KRYPTON CPU

Small, highly portable and extremely rugged IP67 data logger for data recording in harsh environments.

Main features:

IP67 DEGREE OF PROTECTION: KRYPTON CPU is designed for testing in extremely harsh environments. The unit is fully waterproof, dustproof and can withstand shocks up to 100G.

EXTREME OPERATING TEMPERATURE: KRYPTON CPU is able to operate in extreme temperatures ranging from -40 °C to 70 °C.

SMALLEST DATA LOGGER: KRYPTON CPU is a very small data logger and is ready to be placed in tight places and for applications where space is limited.

QUAD CORE CPU: KRYPTON CPU is equipped with powerful Intel Atom quad-core CPU and fast 4GB memory.

SSD STORAGE: Internal SSD drive provides fast and reliable data storage for all your measurement channels.

3 USB PORTS: KRYPTON CPU has 3 USB 2.0 ports for connecting USB peripheral devices or any of our USB data acquisition systems like DEWE-43-A and/or SIRIUS.

GLAN AND WiFi INTERFACES: One Gigabit LAN port with RJ45 connector and WiFi adapter ensure a fast and reliable network connection.

ETHERCAT INTERFACE: Built-in EtherCAT interface port with power output and synchronization for directly connecting EtherCAT DAQ devices like SIRIUS waterproof and KRYPTON.



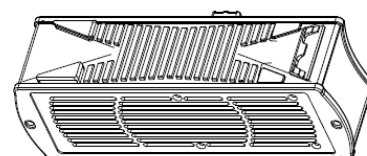
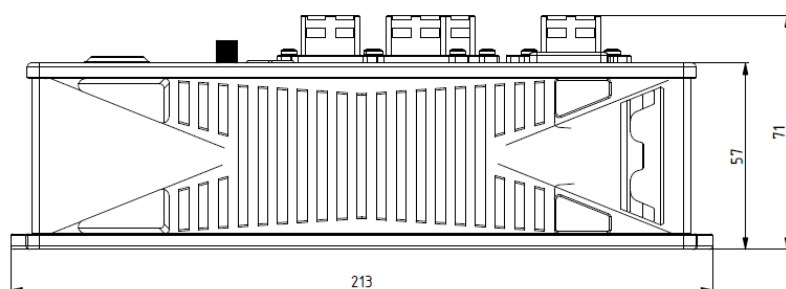
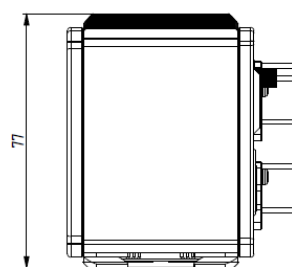
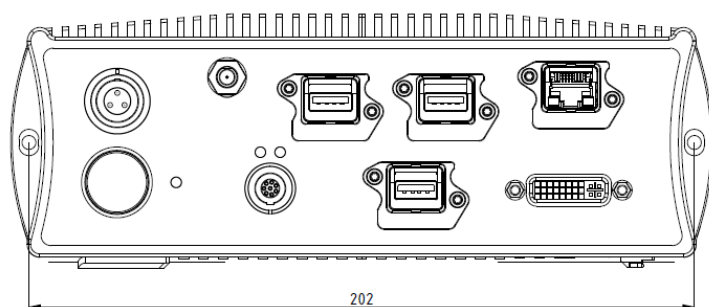
KRYPTON-CPU

6.1. KRYPTON CPU: Specifications

Computer	
Processor	Intel® Atom™ Quad Core at 1.91 GHz
Memory	4 GB
Storage	Non-removable 240 GB mSATA SSD
Interfaces and options	
USB	3x USB 2.0
Ethernet	1x GLAN (Push-Pull), 1x WLAN (RP-SMA Female Jack)
EtherCAT®	1x EtherCAT® 100 Mbps Full Duplex, LEMO 8pin female (Power Out: max. 10 A)
Video	DVI-D (See 1)
Power	
Power supply	9 - 48 V DC
Power consumption	Min. 7.7 W Max. 19.9 W
Environmental	
Operating Temperature	-40 °C to 70 °C
Storage Temperature	-40 °C to 85 °C
Humidity	5 to 100 % RH
IP rating	IP65 / IP67
Shock	Shock: SIST EN 60068-2-27:2009 100 g, 6 ms, half-sine 100x pos./neg in each axis 600x total
Vibration	Random: MIL-STD-202G Method 214A, test condition II-D Profile break points: 50 Hz - 0.025 g²/Hz 100 Hz - 0.1 g²/Hz 2000 Hz - 0.1 g²/Hz Profile RMS / Peak = 13.9 g / 41.7 g 8 hrs in each axis, 24 hrs total
Physical	
Dimension	213 x 77 x 57 mm
Weight	1.0 kg (1.5 kg before Q3 2018)
1) Only digital output. If using a VGA monitor, an adapter is needed.	

6.2. KRYPTON CPU: Dimensions

KRYPTON CPU



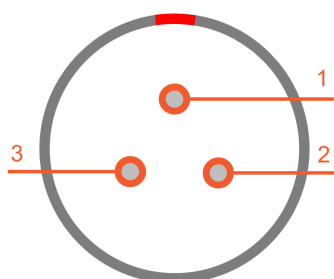
All dimensions are in mm.

Dimensions-KRYPTON CPU

6.3. KRYPTON CPU: Connectors

Name	Description
Power In	3-pin LEMO male connector
USB	3x USB 2.0 connector
Ethernet	RJ-45 connector
EtherCAT	8-pin LEMO connector
DVI	DVI connector
WiFi	RP-SMA Female WLAN antenna

6.3.1. KRYPTON CPU: Power In Connector: Pinout



Pin	Name	Description
1	V +	Supply
2	GND	Ground
3	Remote - On	Remote - On pin

Power in connector: pinout (3-pin LEMO male)

PWR IN connector (on the device): **EGJ.2T.303.CLA**
Mating connector (for the cable): **FGJ.2T.303.CLL75Z**



Hint

To power the system on, press the Power switch OR apply a voltage between 3 V to 30 V to the Remote-on pin. To power off the system press Power switch or reduce the voltage on Remote-on below 0.5 V for more than one second. If you hold the Power switch or force Remote-on below 0.5 V for more than 5 seconds the KRYPTON CPU will commence forced shut down.

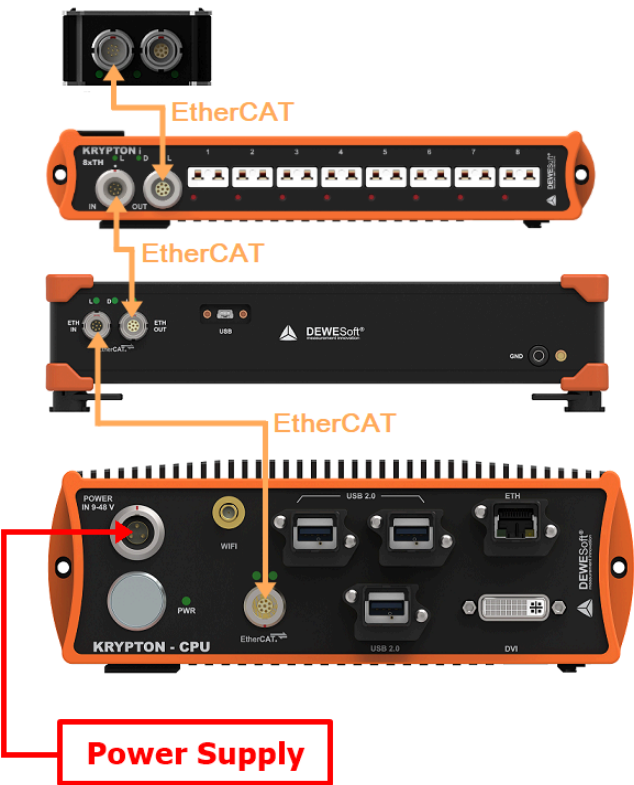


Important

When you lower the Voltage on the Remote - On, the KRYPTON CPU will start the shut-down procedure. If the KRYPTON CPU does not turn off in 60 seconds, it is suspected that something went wrong and the power is taken from the system (Forced shut-down).

9.1. Only EtherCAT devices

When you only use Dewesoft EtherCAT devices (KRYPTON or Sirius EtherCAT), the connection is straightforward via ECAT to ECAT cable.



A system with only ECAT devices (KRYPTON ONE, KRYPTON-8xTH, SIRIUSE, and KRYPTON-CPU)

List of required cables:

Function	Dewesoft order code
Power supply	PS-200-L2T3f
EtherCAT	EtherCAT to EtherCAT: LIT8m-LIT8f



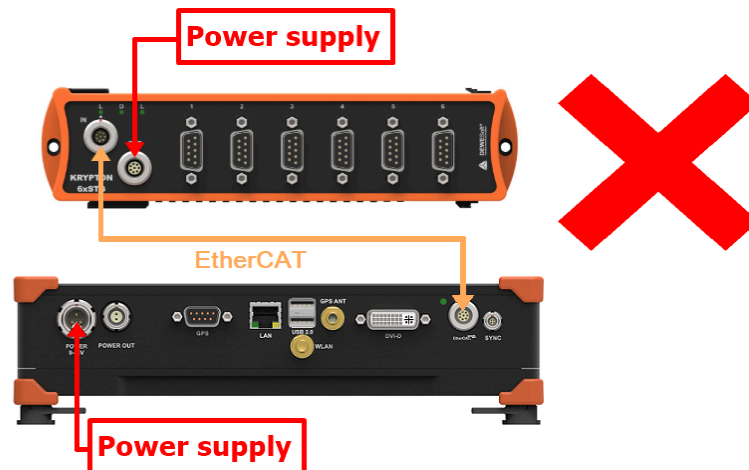
Hint

When you use EtherCAT Sirius devices, you can transfer the data through USB cable (Higher speed - 200 kS/s), but the configuration and control still run through ECAT cable - Speed boost mode. With speed boost mode the ECAT data line is less loaded.

13. Safety instructions

Your safety is our primary concern! Please be safe!

 **Caution** Be careful to not connect the power supply on both ends of the EtherCAT chain. This connection will permanently damage the devices.



How to **not** connect the PS in ECAT chain

13.1 Safety symbols in the manual

Safety reference manual for the IOLITE Data Acquisition Devices can be found in <https://dewesoft.com/download> section. Search for keyword: **Safety technical reference manual**

 **Warning** Calls attention to a procedure, practice, or condition that could cause the body injury or death

 **Caution** Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

13.2. General Safety Instructions

Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

13.2.1. Environmental Considerations

The product is an electronic instrument designed with consideration for environmental impact during its design and use phase. The materials and components used comply with the requirements of the RoHS Directive (2011/65/EU) and the REACH Regulation (EC No. 1907/2006), with no intentional use of restricted or prohibited hazardous substances. During normal operation, the product does not generate direct environmental emissions and features low power consumption. The device is designed for long-term use and serviceability, supporting an extended product lifetime. The product enclosure is made of aluminum, and selected components of the product are suitable for material recycling.

13.2.2. Product End-of-Life Handling

At the end of its service life, the product shall not be disposed of as unsorted municipal waste and shall be collected separately in accordance with the WEEE Directive (2012/19/EU).



The crossed-out wheeled bin symbol on the product, packaging, or accompanying documentation indicates that the equipment must be returned to an authorized collection point for waste electrical and electronic equipment. Recycling, recovery, and disposal activities shall be carried out by authorized operators in compliance with applicable local, national, and EU environmental regulations.

For proper treatment, recovery and recycling of old products and batteries, please take them to applicable collection points in accordance with your national legislation. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

13.2.3. General safety and hazard warnings for all Dewesoft systems

- Safety of the operator and the unit depend on following these rules.
- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!

- DO NOT use higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and -connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
- Maintenance must be executed by qualified staff only.
- During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals.
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.
- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are moisture or high humidity dust, flammable gases, fumes or dissolver, thunderstorm or thunderstorm conditions (except assembly PNA), electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is attended with dangers like short-circuiting, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- DO NOT service or adjust alone. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore if the system is damaged obviously or causes strange noises. The system does not work anymore. The system has been exposed to long storage in adverse environments. The system has been exposed to heavy shipment strain.
- DO NOT touch any exposed connectors or components if they are live wired. The use of metal bare wires is not allowed.
- There is a risk of short circuit and fire hazard!
- Warranty void if damages caused by disregarding this manual. For consequential damages, NO liability will be assumed!

- Warranty void if damages to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
- DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
- The measuring systems are not designed for use by humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already- lower level may damage your system.
- Please also consider the detailed technical reference manual as well as the security advice of the connected systems.

This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.