4.10. SIRIUS-R2/R4

R2/R4 is a compact data acquisition system with up to 64 analog inputs, 32 counter inputs and 32 analog outputs with built-in high-performance, highly reliable data processing computer and SSD data logger.

SIRIUS-R4

Main features

- **HIGH-END SIGNAL CONDITIONING**: R2/R4 data acquisition systems are built around SIRIUS DAQ technology and feature the same versatile and powerful amplifiers for world-leading signal conditioning. Visit SIRIUS product page for detailed SIRIUS DAQ technology overview.
- **POWERFUL AND RELIABLE COMPUTER**: R2/R4 DAQ system offers powerful built-in data processing computer and fast and reliable SSD data logging capabilities for a stand-alone operation.
- **UP TO 64 ANALOG INPUTS**: System can be configured with up to 4 SIRIUS DAQ slices for a total of 64 analog inputs for connecting virtually any sensor.
- **UP TO 32 COUNTER/ENCODER INPUTS**: System can hold up to 32 counter/encoder inputs or 96 digital input channels, all equipped with our patented SUPERCOUNTER® technology.
- **UP TO 4 ISOLATED CAN PORTS**: Configure up to 4 high speed CAN 2.0b channels with 1 Mbit/sec data throughput with additional support for CCP, OBDII, J1939, and CAN output.
- **ETHERCAT MASTER PORT**: R2/R4 DAQ systems include EtherCAT master port with built-in synchronization for easy connection and extension of any of our EtherCAT based DAQ systems like KRYPTON DAQ modules or SIRIUS DAQ system.
- **ALL INTERFACES**: Interfaces for Wireless LAN, dual GLAN, 4x USB 3.0, GPS, HDMI, 2x synchronization are available.
- **100 Hz GPS WITH RTK**: Optional 10Hz or 100Hz GPS receiver with additional RTK support can be built straight into R2/R4 DAQ system.

4.10.1. SIRIUS-R2: Specifications

Computer	
Processor	Intel® Core™ i7; 2x 2.6 GHz base, 3.4 GHz max; 4 threads
Memory	8 GB (optional up to 32 GB)
Storage	Non-removable M2 250 GB (500 GB, 1 TB as option)
Interfaces and options	
USB Front	4x USB 3.0
Ethernet	2x GLAN (RJ45) 2x front, 1x WLAN (RP-SMA Female Jack)
EtherCAT®	1x EtherCAT® 100 Mbps Full Duplex, 8-pin LEMO female
Synchronisation	2x SIRIUS® SYNC
Video	1x HDMI
GPS (option)	10 Hz or 100 Hz or 100 Hz + RTK
GPS display (option)	External on DSUB-9 female connector + remote power on
Power	
Power supply	9 - 36 V DC
Power consumption	Typ. 30 W (Max. 35 W) (excl. SIRIUS® slices)
Power out & EtherCAT® Power out	
Type	Switched input supply on 2-pin LEMO female & EtherCAT® connector, 8-pin LEMO female
Maximum power	60 W (combined Power out & EtherCAT® Power out)
Output Voltage	12 - 36 V DC
R2rt optional EtherCAT® slave port	
Minimum delay (analog input to EtherCAT® bus)	70 µs
Minimum EtherCAT® cycle time	100 µs
Environmental	
Operating Temperature	-10 to 50 °C
Storage Temperature	-40 to 85 °C
Humidity	95 % RH non condensing @ 50 °C
IP rating	IP20
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008)\ Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Physical	
Dimensions	276 x 172 x 142 mm
Weight	2.34 kg (excl. SIRIUS® slices)

4.10.2. SIRIUS-R2-HUB: Specifications

Interfaces and options	
USB Front	1x USB 2.0, USB Mini B
Synchronisation	2x SIRIUS® SYNC
USB 2.0 hub	
Bandwidth	Minimum 20 MB/sec Typical 25 MB/sec Maximum 28 MB/sec
SIRIUS Dual Core	32 AI Channels at 200 kS/sec @ 25.6 MB/sec
SIRIUS HS	32 AI Channels, 450 kS/sec @ 28.8 MB/sec 8 AI Channels + 1 Counter, 1000 kS/sec @ 20 MB/sec
Power	
Power supply	9 - 36 V DC
Connector	3-pin LEMO male
Power consumption	Typ. 4.8 W (Max. 6.8 W) (excl. SIRIUS® slices)
R2rt optional EtherCAT® slave port	
Minimum delay (analog input to EtherCAT® bus)	70 µs
Minimum EtherCAT® cycle time	100 µs
Environmental	
Operating Temperature	-10 to 50 °C
Storage Temperature	-40 to 85 °C
Humidity	95 % RH non condensing @ 50 °C
IP rating	IP20
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008)\ Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Physical	
Dimensions	276 x 172 x 142 mm
Weight	2.77 kg (excl. SIRIUS® slices)

4.10.3. SIRIUS-R4: Specification

Computer	
Processor	Intel® Core™ i7; 2x 2.6 GHz base, 3.4 GHz max; 4 threads
Memory	8 GB (optional up to 32 GB)
Storage	Non-removable M2 250 GB (500 GB, 1 TB as option)
Interfaces and options	
USB Front	4x USB 3.0
Ethernet	2x GLAN (RJ45) 2x front, 1x WLAN (RP-SMA Female Jack)
EtherCAT®	1x EtherCAT® 100 Mbps Full Duplex, 8-pin LEMO female
Synchronisation	2x SIRIUS® SYNC
Video	1x HDMI
GPS (option)	10 Hz or 100 Hz or 100 Hz + RTK
GPS display (option)	External on DSUB-9 female connector + remote power on
Power	
Power supply	9 - 36 V DC
Power consumption	Typ. 30 W (Max. 35 W) (excl. SIRIUS® slices)
Power out & EtherCAT® Power out	
Type	Switched input supply on 2-pin LEMO female & EtherCAT® connector, 8-pin LEMO female
Maximum power	60 W (combined Power out & EtherCAT® Power out)
Output Voltage	12 - 36 V DC
R4rt optional EtherCAT® slave port	
Minimum delay (analog input to EtherCAT® bus)	70 µs
Minimum EtherCAT® cycle time	100 µs
Environmental	
Operating Temperature	-10 to 50°C
Storage Temperature	-40 to 85°C
Humidity	95 % RH non condensing @ 50 °C
IP rating	IP20
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008)\ Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Physical	
Dimensions	276 x 251 x 150 mm
Weight	3.2 kg (excl. SIRIUS® slices)

4.10.4. SIRIUS-R4-HUB: Specification

Interfaces and options	
USB Front	1x USB 2.0, USB Mini B
Synchronisation	2x SIRIUS® SYNC
USB 2.0 hub	
Bandwidth	Minimum 20 MB/sec Typical 25 MB/sec Maximum 28 MB/sec
SIRIUS Dual Core	32 AI Channels at 200 kS/sec @ 25.6 MB/sec
SIRIUS HS	32 AI Channels, 450 kS/sec @ 28.8 MB/sec 8 AI Channels + 1 Counter, 1000 kS/sec @ 20 MB/sec
Power	
Power supply	9 - 36 V DC
Connector	3-pin LEMO male
Power consumption	Typ. 4.8 W (Max. 6.8 W) (excl. SIRIUS® slices)
R4rt optional EtherCAT® slave port	
Minimum delay (analog input to EtherCAT® bus)	70 µs
Minimum EtherCAT® cycle time	100 µs
Environmental	
Operating Temperature	-10 to 50°C
Storage Temperature	-40 to 85°C
Humidity	95 % RH non condensing @ 50°C
IP rating	IP20
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008)\ Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Physical	
Dimensions	276 x 251 x 150 mm
Weight	2.75 kg (excl. SIRIUS® slices)

4.10.5. SIRIUS-R2/R4: Front side

SIRIUS-R4 Front side (SBOX R4)

On the front side of the SIRIUS-R4 or SBOXse you can find these connectors:

Name	Description
LAN	2x Ethernet 1 Gbps, RJ45 connector
Wi-Fi	RP-SMA Female WLAN antenna: WiFi 802.11 b/g/n
HDMI	HDMI Video out
GPS ANT	SMA Female GPS antenna
EtherCAT	8-pin LEMO female connector
PWR	To switch the SBOX on or off.
GPS	DSUB-9 female GPS connector
OUT	Power out 2-pin LEMO female connector
SYNC	2x 4-pin LEMO male sync connector
IN	Power in 3-pin LEMO male connector
USB 3.0	4x USB 3.0

4.10.6. SIRIUS-R2/R4: Rear side

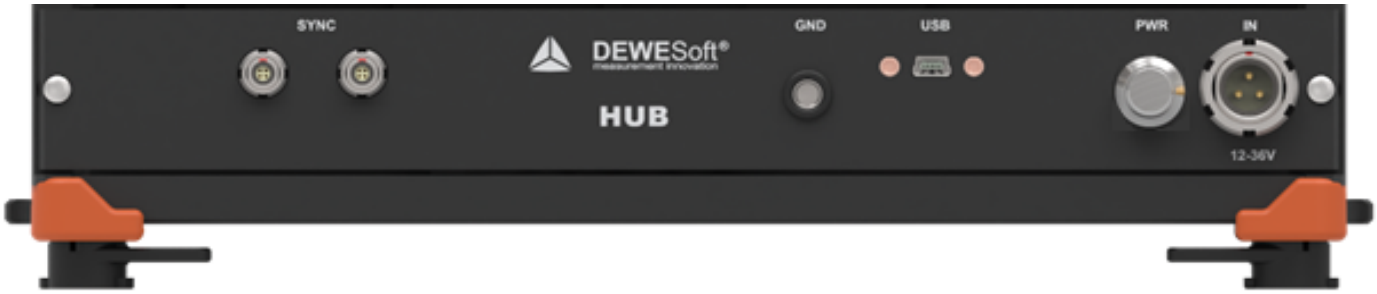
SIRIUS-R4rt rear side

On the back side of the SIRIUS-R4 you can find these connectors:

Name	Description
AO 1 to 8	Analog out BNC connectors (optional)
EtherCAT IN	EtherCAT® slave port (optional) 8-pin LEMO male connector
EtherCAT OUT	EtherCAT® slave port (optional) 8-pin LEMO female connector

Important
See chapter “EtherCAT® slave port” for details.

4.10.7. SIRIUS-R2-HUB/R4-HUB: Front side



SIRIUS-R4-HUB

Name	Description
SYNC	2x 4-pin LEMO male sync connector
GND	Protective Ground banana plug and screw connector
USB	USB 2.0, USB Mini B
PWR	To switch the System on/off.
IN	Power in 3-pin LEMO male connector