

TECHNICAL REFERENCE MANUAL

IOLITE® V26-1



4.3.5. IOLITE: Multi channel device

IOLITE multi-channel modules are fully compatible with the DIN rail mount. The chassis offers an easy clip-in mechanism for mounting to all standard industrial DIN rail mounts.

IOLITE DAQ devices use RJ45 connectors which allow easy connection of modules with standard low-cost Ethernet/EtherCAT cables.



Important

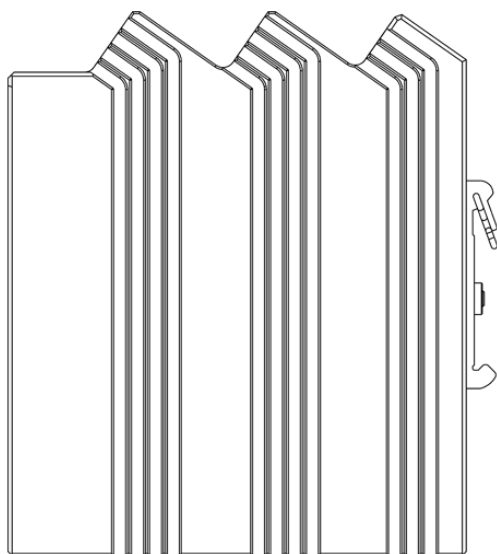
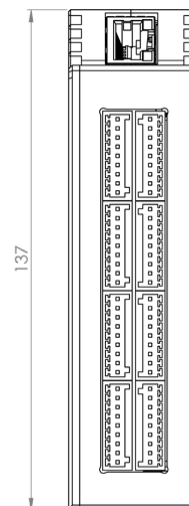
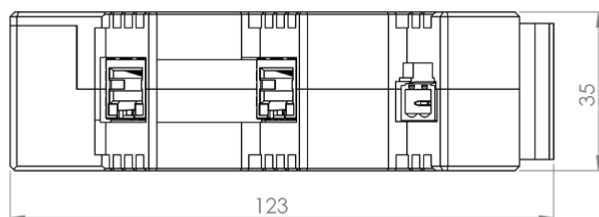
For the power supply we have two terminal block connectors so the devices can be daisy chained with each other.

4.3.5.1. IOLITE - Multi channel: Renders



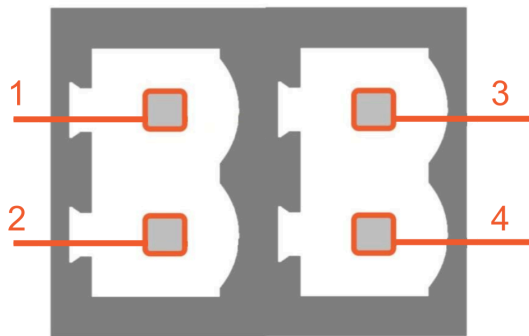
IOLITE multi channel device

4.3.5.2. IOLITE - Multi channel: Dimension



4.3.5.3. IOLITE - Multi channel: Connectors

4.3.5.3.1. IOLITE - Multi channel: PWR IN

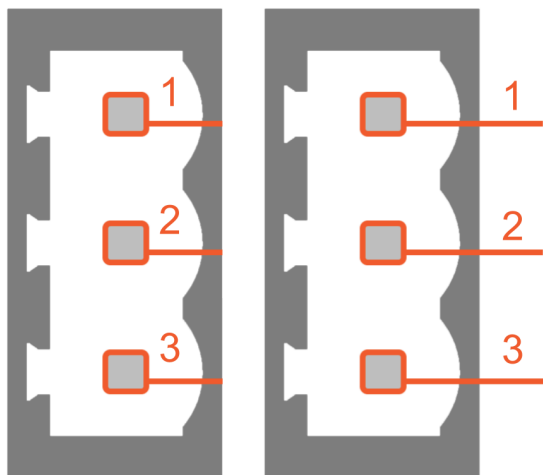


Power in connector: pin-out (4-pin male)

Pin	Name	Description
1	+	PWR +
2	-	PWR -
3	+	PWR +
4	-	PWR -

Connector (on the device):
SCDN-THR 3.81/04/90G 3.2SN BK BX

Mating Connectors (for the cable):
BCF 3.81/02/180 SN BK BX



Power in connector: pin-out (two 3-pin connectors)

Pin	Name	Description
1	Chassis	Connected to chassis
2	-	PWR-
3	+	PWR +

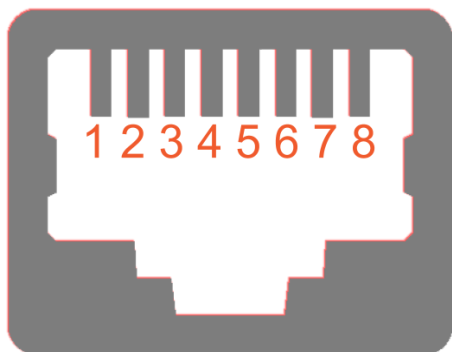
Connector (on the device):
2x3 OMNIMATE SC 3.81/03/180

Mating Connectors (for the cable):
2x3 OMNIMATE BCF 3.81/03/180;

4.3.5.3.2. EtherNET - IN (Data, Sync)

The connector used on the device is a standard Ethernet connector (RJ45).

Standard ethernet cable with standard connector can be used to connect IOLITE - Multi channel to PC.



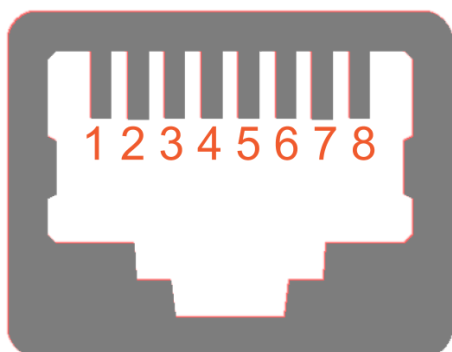
EtherCAT connector: pin-out (RJ-45 female)

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	-	-
5	-	-
6	RX_N	Reception -
7	-	-
8	-	-

4.3.5.3.3. EtherNET - OUT (Data, Sync)

The connector used on the device is a standard Ethernet connector (RJ45).

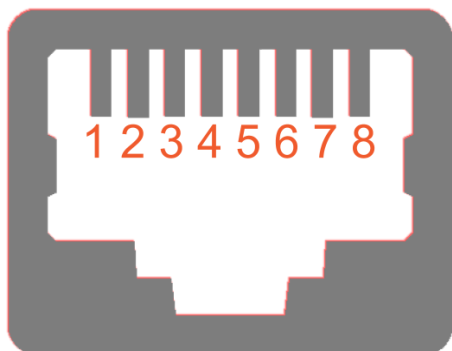
Standard ethernet cable with standard connector can be used to connect IOLITE Multi channel device with an additional IOLITE Multi channel device



EtherCAT connector: pin-out (RJ-45 female)

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	-	-
5	-	-
6	RX_N	Reception -
7	-	-
8	-	-

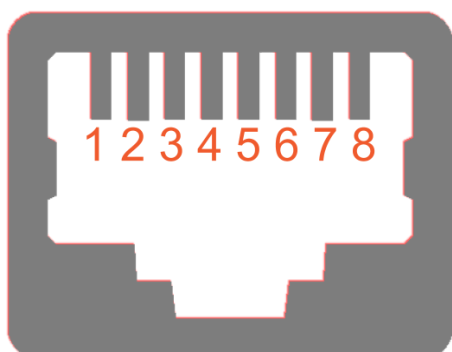
4.3.5.3.4. PoE - ECAT - IN (Data, Sync, PWR)



EtherCAT connector: pin-out (RJ-45 female)

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	DC +	PoE +
5	DC +	PoE +
6	RX_N	Reception -
7	DC -	PoE -
8	DC -	PoE -

4.3.5.3.5. PoE - ECAT - OUT (Data, Sync, PWR)



EtherCAT connector: pin-out (RJ-45 female)

Pin	Name	Description
1	TX_P	Transmission +
2	TX_N	Transmission -
3	RX_P	Reception +
4	DC +	PoE +
5	DC +	PoE +
6	RX_N	Reception -
7	DC -	PoE -
8	DC -	PoE -

Caution



If the device is supplied on PWR IN, PoE voltage (DC+ / DC- on ECAT OUT) is equal to Vin (PWR+ / PWR-) on PWR IN (max. current 3 A). If you chain the devices, the voltage on ECAT OUT is the same as connected to the ECAT IN. There is no protection.

If PoE with power and PWR IN are connected at the same time, PWR IN power will be chosen, but only if it is within the specifications (9-48 V).

Be sure to check the connection possibilities in chapter [3.2. Connecting IOLITE®](#).

6.3. CURRENT MEASUREMENT

IOLITE includes an 8-channel isolated module dedicated for current measurement:

- IOLITEir-8xLA (rack version), IOLITEi-8xLA (modular version)
- IOLITEir-8xLA-T2A2f (rack version), IOLITEi-8xLA-T2A2f (modular version)

6.3.1. IOLITEi 8xLA

The IOLITEi 8xLA is a multi channel low current measurement module. It is a perfect device for data acquisition in control applications requiring an input current range of ± 20 mA. It features channel to channel isolation and comes with either BNC (IOLITEir-8xLA, IOLITEi-8xLA) or terminal block (IOLITEir-8xLA-T2A2f, IOLITEi-8xLA-T2A2f) connectors.



IOLITEir-8xLA



IOLITEi-8xLA



IOLITEir-8xLA-T2A2f



IOLITEi-8xLA-T2A2f



IOLITEir-8xLA-T3A2f



IOLITEi-8xLA-T3A2f

6.3.1.1. IOLITEi 8xLA: Specifications

Analog input			
Input type	Isolated current		
Number of channels	8		
ADC Type	24-bit oversampled SAR		
Sampling Rates	Simultaneous 20k, 10k, 5k, 2k, 1k, 500, 200, 100 S/s (software-selectable)		
Current Mode			
Ranges	±20 mA	±2 mA	
Accuracy	±0.05 % of reading ±10 µA	±0.05 % of reading ±2 µA	
Typical noise floor @ 10 kS/sec	-100 dB	-100 dB	
Crosstalk (20 kS/sec, -1 dBFS @ 1 kHz)	-121 dB	-128 dB	
Gain Drift	Typical 10 ppm/K, Max. 40 ppm/K		
Offset Drift	Typical 5 ppm of range/K, Max. 15 ppm of range/K		
Gain Linearity	< 0.05 %		
Input Coupling	DC		
Input Impedance	50 Ω		
Overvoltage Protection	In+ to In-: 30 V continuous		
Overcurrent Protection	In+ to In-: 70 mA continuous		
Analog input performance			
Bandwidth (-3 dB)	0.49 fs		
Alias-free Bandwidth	DC to 0.453 fs		
Alias Rejection	-100 dB (all sample rates)		

Delay Through ADC	37 / fs	
Oversampling	32	
Additional Specifications		
Power supply	9 - 48 V DC	
Isolation Voltage	450 Vpeak channel to ground & channel to channel	
Power Consumption	Typ. 2.8 W, Max. 3.5 W	
Input Connectors	BNC	Terminal block 2 pole
Weight	310 g	270 g
Slice Dimensions	128.4 x 127.6 x 30.1 mm	128.4 x 115.4 x 30.1 mm
Rev: 1632117100		

6.3.1.2. IOLITEi 8xLA: Connectors

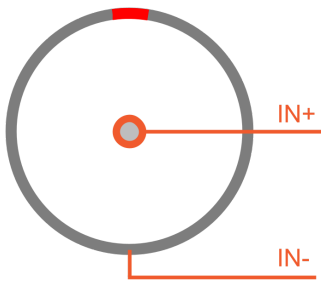
IOLITEi 8xLA (rack and standalone version) is available with BNC and terminal block connectors.

6.3.1.2.1. IOLITEi 8xLA: BNC Connector



IOLITE-8xLA Front

6.3.1.2.1.1. IOLITEi 8xLA: BNC Connector: Pinout

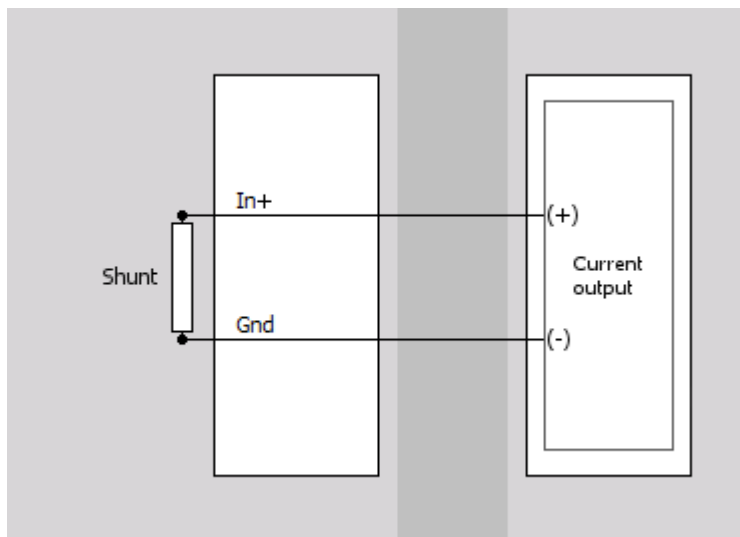


IOLITEi 8xLA connector: pin-out (BNC)

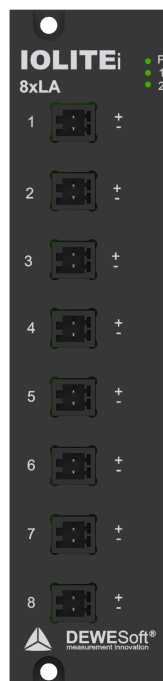
Pin	Name	Description
1	IN+	Analog input +
2	IN-	Analog input -

6.3.1.2.1.2. IOLITEi 8xLA: BNC Connector: Wiring diagram

Current



6.3.1.2.2. IOLITEi 8xLA: T2A2f Connector: OBSOLETE



IOLITE-8xLA-T2A2f front