

TECHNICAL REFERENCE MANUAL

IOLITE® V26-1



Physical			
Dimensions	483 x 148 x 133 mm	266 x 169 x 139 mm	321 x 155 x 151 mm
Weight	IOLITE-RACK: 2.85 kg IOLITE-GATE (4× RJ45): 260 g IOLITE-GATE-L (2× LEMO, 2× RJ45): 280g	2.6 kg	2.6 kg
1) Extended operating temperature range depends of module configuration			

Hint



For detailed explanation of IOLITE-R8 and IOLITE-R8r chassis shock and vibration specifications check this [LINK](#).

Interface	IOLITE Single channel	IOLITE Multi channel
Data interface	EtherCAT	EtherCAT
Data Rate	100 Mbps Full Duplex bus speed	100 Mbps Full Duplex bus speed
Sync Accuracy	< 200 ns within same EtherCAT chain < 2 µs using sync for multiple EtherCAT chains below 1 sample to Sirius®	< 200 ns within same EtherCAT chain < 2 µs using sync for multiple EtherCAT chains below 1 sample to Sirius®
Bus connectors	Ethernet RJ45	Ethernet RJ45
Max. cable length between devices	100 m	100 m
Max. Throughput per Chain	From 6 MB/s to 10 MB/s (see 1)	From 6 MB/s to 10 MB/s
Data interface connection	Ethernet RJ45, Single cable for data, power and sync, daisy chainable	Ethernet RJ45, single cable for data, power and sync, daisy chainable (see 2)
Power		
Power supply	9 V - 48 V	9 V - 48 V
Power consumption	~2 W (see individual modules)	~4 W (see individual modules)
Power supply connector	-	SCDN-THR 3.81/04/90G 3.2SN BK BX
Environmental		
Operating Temperature	-20 to 60 °C	-40 to 85 °C
Storage Temperature	-20 to 60 °C	-40 to 85 °C
Humidity	95 %, no condensation	95 %, no condensation
IP rating	IP20	IP20
Physical		
Dimensions	82 x 62 x 52 mm (might differ for different modules)	137 x 119 x 35 (might differ for different modules)
Weight	130 g (might differ for different modules)	530 g (might differ for different modules)
1) 55 per chain (@ 20 kS/s total sample rate per device), multiple chains possible. Additional power injectors are necessary.		
2) Passive PoE is supported for devices produced after September 2024.		

6.3.2. IOLITE 16xLA

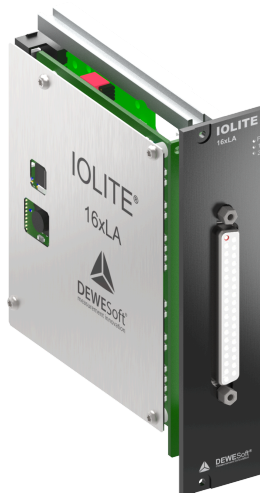
IOLITE 16xLA modules have terminal block connectors for analog input. The 16-channel low current input module comes with channel-to-ground isolation and an input current range of ± 20 mA.



IOLITEr-16xLA



IOLITE-16xLA



IOLITEr-16xLA-D37



IOLITE-16xLA-D37

6.3.2.1. IOLITEr-16xLA: Specifications

Analog input	
Input type	Current External loop-powered 4-20 mA
Number of channels	16
ADC Type	24-bit oversampled sigma-delta
Sampling Rates IOLITE	Simultaneous 20k, 10k, 5k, 2k, 1k, 500, 200, 100 S/s (software-selectable)
Sampling Rates OBSIDIAN	Simultaneous 5k, 2k, 1k, 500, 200, 100 S/s (software-selectable)
Current Input Mode	
Ranges	±20 mA
Accuracy	±0.05 % of reading ±10 µA
Typ. SNR (10 kS/s, -1 dBFS sine wave @ 1 kHz)	112 dB
Typical noise floor @ 10 kS	-91 dB
Crosstalk @ 1 kHz	-120 dB
Gain Drift	Typical 3 ppm/K, Max. 9 ppm/K
Offset Drift	Typical 4 ppm of range/K, Max. 12 ppm of range/K
Gain Linearity	< 0.02 %
Input Coupling	DC
Input Impedance	100 Ω
Overvoltage Protection	In+ to In-: 30 V continuous
Overcurrent Protection	In+ to In-: 50 mA continuous
Analog input performance	
Bandwidth (-3 dB)	0.433*fs
Alias-free Bandwidth	DC to 0.45*fs (DC to 0.499*fs @ 20 kS/s)
Alias Rejection	-105 dB (all sample rates)
Delay Through ADC	34 / fs
Oversampling	128
Additional Specifications	
Rack	IOLITEr-16xLA
Input Connectors	Terminal block 9 pole (OMNIMATE SL 2.50 / BLF 2.50/180), D-SUB37 female
Power supply	9 - 48 V DC
Isolation Voltage	250 Vpeak channel to ground (functional isolation)
Power Consumption	Typ. 2.9 W (Max. 3.3 W)
Weight	310 g
Slice Dimensions	128.4 x 115.4 x 30.1 mm
Modular	IOLITE-16xLA
Input Connectors	Terminal block 9 pole (OMNIMATE S2L 3.50/18/180F), D-SUB37 female

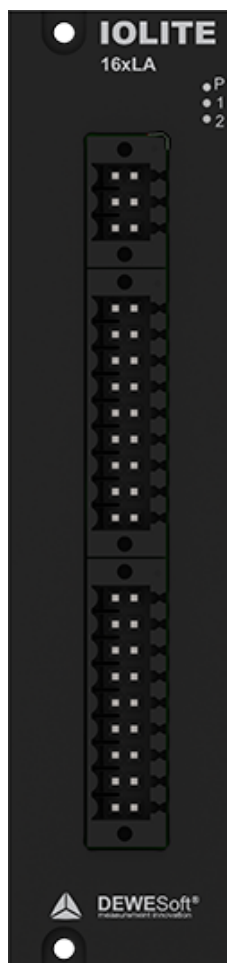
Power supply	9 - 48 V DC
Isolation Voltage	250 V _{peak} channel to ground (functional isolation)
Power Consumption	Typ. 2.9 W (Max. 3.3 W)
Weight	560 g
Slice Dimensions	136.75 x 115.0 x 35.0 mm
Rev: 1705294800	

6.3.2.2. IOLITE 16xLA: Connectors

6.3.2.2.1. IOLITE 16xLA: Connectors: Terminal block

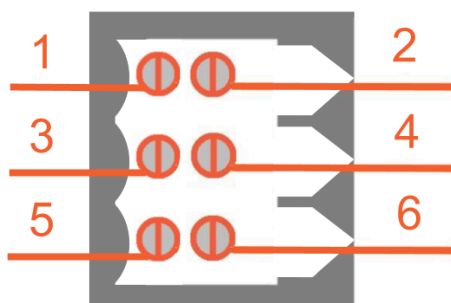
IOLITEr-16xLA and IOLITE-16xLA modules have two 18-pin terminal block connectors (2T3B18f).

Additionally, there is a 6-pin terminal block connector for the additional option of external supply connection.



IOLITEr-16xLA front

6.3.2.2.2. IOLITE 16xLA: 2T3B6f Sensor supply Connector: Pinout



Sensor supply connector: pin-out (TBLOCK male)

Connector (on the device): OMNIMATE S2L 3.50/06/180F 3.5SN BK BX

Pin	Name	Description	Pin	Name	Description
1	Vsup +	External V_{supply} input	2	iGND	Isolated Ground
2	Vsup +	External V_{supply} input	4	iGND	Isolated Ground
3	Vsup +	External V_{supply} input	6	iGND	Isolated Ground

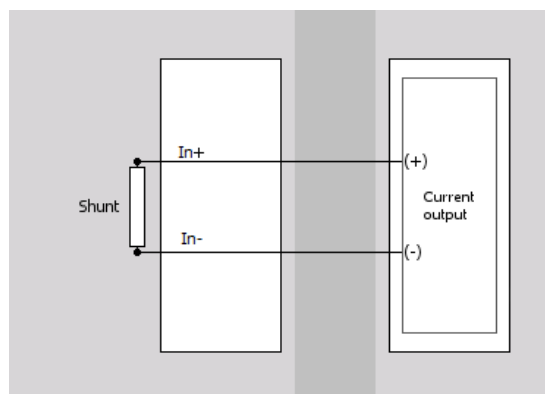


Caution

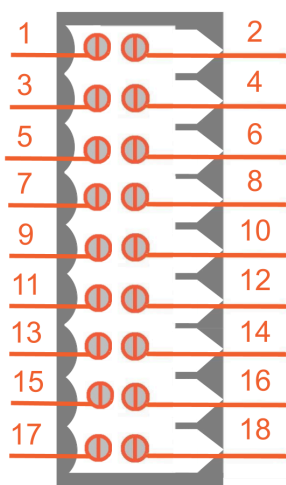
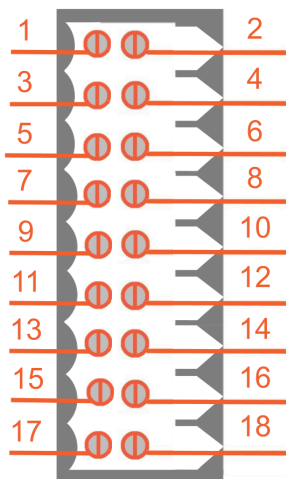
Vsup pins are not connected to the amplifier. Vsup+ and Gnd are meant for a connection of the external supply that is connected to the pins 17 and 18 on both Analog input connectors.

6.3.2.2.4. IOLITE 16xLA: 2T3B18f Connector: Wiring diagram

Current



6.3.2.2.3. IOLITE 16xLA: Analog input: 2T3B18f connector: Pinout



Pin	Name	Pin	Name
1	AIN 1 +	2	AIN 1 -
3	AIN 2 +	4	AIN 2 -
5	AIN 3 +	6	AIN 3 -
7	AIN 4 +	8	AIN 4 -
9	AIN 5 +	10	AIN 5 -
11	AIN 6 +	12	AIN 6 -
13	AIN 7 +	14	AIN 7 -
15	AIN 8 +	16	AIN 8 -
17	*Vsup+	18	*iGND
1	AIN 9 +	2	AIN 9 -
3	AIN 10 +	4	AIN 10 -
5	AIN 11 +	6	AIN 11 -
7	AIN 12 +	8	AIN 12 -
9	AIN 13 +	10	AIN 13 -
11	AIN 14 +	12	AIN 14 -
13	AIN 15 +	14	AIN 15 -
15	AIN 16 +	16	AIN 16 -
17	*Vsup+	18	*iGND

AI connector (on the device): OMNIMATE S2L 3.50/18/180F 3.5SN BK BX



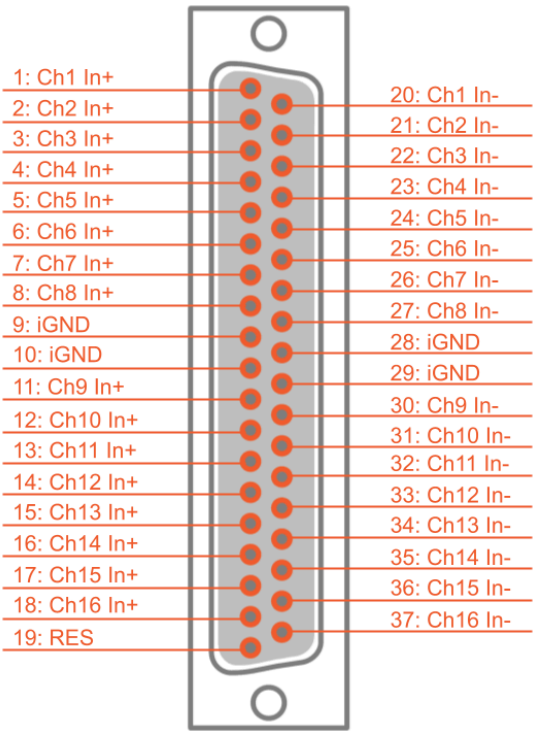
Caution

*Vsup pins are not connected to the amplifier. Vsup+ and iGND are directly connected to the 6-pin connector for external input voltage supply.

6.3.2.2.5. IOLITE 16xLA: DSUB Connector: Pinout



IOLITE 16xLA-D37 front



IOLITE 16xLA-D37 connector: Pin-out



Caution

6.3.2.2.6. IOLITE 16xLA: D37 Connector: Wiring diagram

Current

