LDC1000

Laser Diode Controller

Laser Diode Driver

- 600, 1.000 or 1.500 W laser diode driver
- Up to 300 A laser diode current
- Up to 60 V laser diode voltage
- CW and pulse operation
- Extern analogue modulation
- External trigger input and -output
- Interlock function
- RS232 PC Interface

TEC Driver

- Integrated TEC driver ±48V / ±13A
- Second TEC driver ±5V / ±3A optional

Parameter	Unit	Value									
Specifications											
Max. Power Laser Diode	W	600									
Max. Laser Diode Current	A	10	13	18	27	43	53	120			
Max. Laser Diode Voltage	V	60	48	36	24	15	12	5			
Max. Power Laser Diode	W	1000									
Max. Laser Diode Current	A	17	22	29	44	70	88	200			
Max. Laser Diode Voltage	V	60	48	36	24	15	12	5			
Max. Power Laser Diode	W	1500									
Max. Laser Diode Current	A	3,3	5	6	7,5	12	15	24	36	48	60
Max. Laser Diode Voltage	V	300	300	250	200	125	70	65	42	32	25
Current Limit Range		0 ... Max. Laser Diode Current									
Current Adjustment Accuracy	mA	100									
Temperature Coefficient	ppm/ °C	< 100									
Short Term Stability (1 hr)	ppm	< 30									
Long Term Stability (24 hr)	ppm	< 75									
Repetition Rate	Hz	0 ... 100									
Pulse Width (*)	ms	> 5									
Rise- / Fall- Time (*)	ms	< 2 (10 % – 90 % of Max. Current)									
Analog Modulation											
Input (BNC Connector)		0 ... 5 V, 1 kΩ									
Transfer Function		20 A/V up to 70 A Max. Laser Current 40 A/V above 70 A Max. Laser Current									
Bandwidth	Hz	0 ... 100									
Trigger											
Input (BNC Connector)	V	TTL-Level (High: U>2.4 V, Low: U<0.8 V)									
Output (BNC Connector)	V	TTL-Level (High: U>2.4 V, Low: U<0.8 V)									
Transfer Function for TTL High	A	Iout = I set									
Transfer Function for TTL Low	A	Iout = 0 A									
Bandwidth	Hz	0 ... 100									
Pilot Laser											
Pilot Laser Voltage		5 V									
Pilot Laser Current	mA	Max. 300									
Pilot Laser Power Adjustment	ppm/ °C	1 ... 100 %									

Power Monitor		
Input (BNC Connector)	V	0 ... 10,00
Transfer Function	MΩ	1
TEC Controller		
Temperature Range	°C	0 ... 50
Temperature Stability	K	< 0,1
Temperature Adj. Accuracy	K	0,1
Control Loop		PID
Output Cooler 1		
TEC Output Power (Corresponding Order)	W	600
TEC Current	A	0.. ±13
TEC Voltage	V	0.. ±48
TEC Current Limit Range	A	0.. 13
Ripple	mA	100
Fan Voltage Adjustment Range (Manual)	V	6 ... 12
Fan Current	A	Max. 1
Output Cooler 2 (Optional)		
TEC Output Power	W	15
TEC Current	A	0 ... ±3
TEC Voltage	V	0 ... ±5
TEC Current Limit Range	A	0 ... 3
Ripple	mA	50
Temperature Sensors		
Sensor Types		Thermistor / PT100 / PT1000
Thermistor		NTC, 10 kΩ @ 25°C, Current: 100 µA
Power Supply		
Line Voltage	V	85 - 264 AC, Auto Ranging
Frequency	Hz	50 - 60
Power Consumption	W	1.500
Fuses Rating for 115 V AC		16 A Slow Acting (5x20 mm)
Fuses Rating for 230 V AC		8 A Slow Acting (5x20 mm)
General Characteristics		
Ambient Temperature, Operating	°C	0 ... 30
Relative Humidity, Operating	%	30 ... 70
Weight	kg	11,1
Dimensions	mm^3	465 x 150 x 500 (W x H x D)

Notes:
(*) The rise time, the fall time and the pulse width may be prolonged by long cables between the power supply and the laser diode.

The signal ground (shielding) of the BNC-connectors of the trigger input, the trigger output and the analogue modulation input BNC-connector are isolated from the chassis ground (earth).

Attention:
The output pin „laser diode anode, plus, „+" „ which is connected to the anode (A) of the laser diode is internally connected to any internal power supply voltage of the instrument.

Please be aware that most of all medium and high-power laser diodes have their housing electrically connected to the anode of the laser diode.

Therefore, in order to avoid any grounding loops when applying external instruments to the Laser Diode Controller unit it is recommended to isolate the housing of the laser diode from the chassis (earth).

Remark:
If the laser diode is mounted to the heat spreader of the heat sink provided by LASER ELECTRONICS it is already isolated from chassis ground (earth).

LASER ELECTRONICS

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