Series: "dst11-t193xx-air" - optical output up to 120W, air cooled series

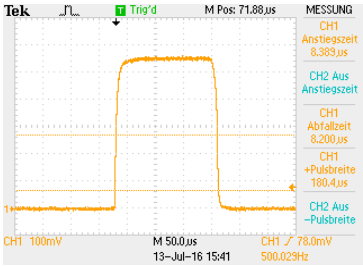
The product series dst11-t193-h2o combines the features and reliability of OsTech Laser- and TEC controllers with diode laser modules to a turn key laser source. It could be powered by an input voltage of 110~230VAC with power factor correction. Normally the optical power output is located at the back panel. The optical power could be chosen up to 120W cw lasers. Lasers are air cooled. Multiple laser protection features are incorporated.

As user interface we provide the front panel display, RS232 and an isolated industrial interface. The following modes are available: cw-mode, external analogue modulation, external digital modulation, internal modulation, internally generated pulses and pulse bursts, externally triggered internal pulses and bursts. Typical rise time is about 25µs, shorter rise times on request.

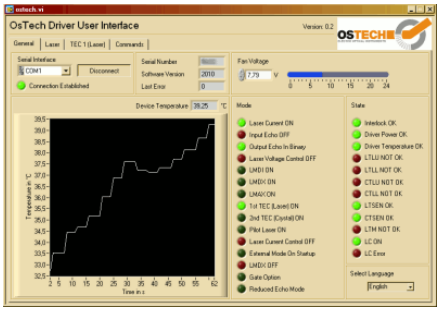
It is possible to provide your own laser diode to OsTech for integration. Otherwise we choose the best suited laser for your application.

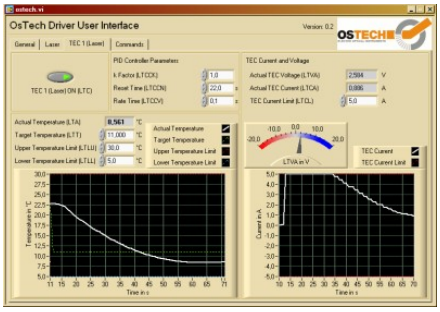
Any questions or requests are welcome to be discussed with our engineers.

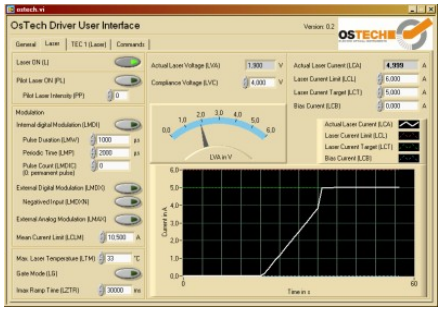
- front and back view of a typical configuration



- typical puls shape

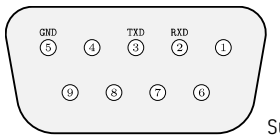
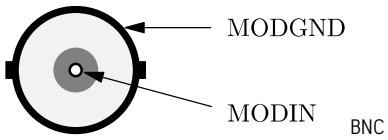
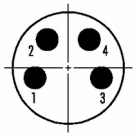




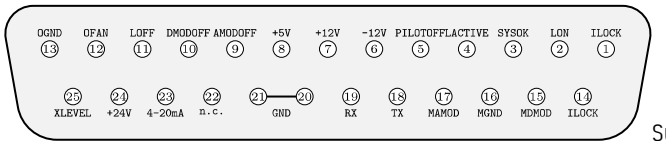


PC-LabVIEW interface for remote control. The list of serial commands you find here: "http://www.ostech.de/en/downloads/manuals/ds-en.pdf"

Features	Options
• up to 120W optical output power in cw-mode (qcw power up to 500W) • housing 19“rack mount, 3HU, depth 340mm(13"4) • input 110V-240V AC • typical optical output - NA 0.22; fiber core diameter 100, 200, 400 or 600µm; fiber receptacle SMA or D80 depending on power air or water cooled, others on request • key switch, emergency stop, Interlock and LaserOn signal • operation modes: cw, internal digital modulation, external analog or digital Modulation, pulse or pulse burst mode internally or externally triggered, gated mode • rise/fall-time typ. 25..50µsec • front panel display with touch keys • RS232-Interface, control software and labview VI is provided for download • isolated industrial interface, SysOk and LaserOn-Output, LaserOn-and modulation input and others • various protection features for safety of the laser diode • PC-interface for configuration and control by LabVIEW ™ • system includes air cooling	• dual wavelength • USB or Ethernet • low noise optical output • short rise- / fall-time (1..10µs) • pilot-laser if available on laser • optical power monitor • fiber detection sensor, depending on laser diode • metal armoured fiber cable, variable length • laser diode provided from customer • suitable industrial chillers in 19" 3HU • PLC compatible control voltages • metal armoured fiber cable, variable length, incorporating mode stripping with passive cooling, fibre breakage, connectivity and connector temperature sensing • laser diode provided from customer for integration
Application examples	
• Plastic welding • Soldering • Illumination • Selective laser melting • Heat treatment • Medicine	

RS232 Connector	AMOD/DMOD Connector	Interlock Connector
 SubD-9, female	 BNC	 M8-round connector Binder Sensor series 768 · 718 ordering# 09-3391-00-04 fits with ordering# 99-3376-00-04
Standard RS232-Connector connected to PC 9600-Baud-8N1(No Null-Modem Cable !)	Input-Impdanz 10kOhm Digital Modulation with TTL-Pegel Analog Modulation 0-4[V] => 0-Imax[A]	2 circuit Interlock - Laser runs only if both circuits are closed IL1+Pin1, IL1-Pin2, IL2+Pin3, IL2-Pin4

Support Connector - Isolated Industrial Interface - 2nd version



SubD25-female

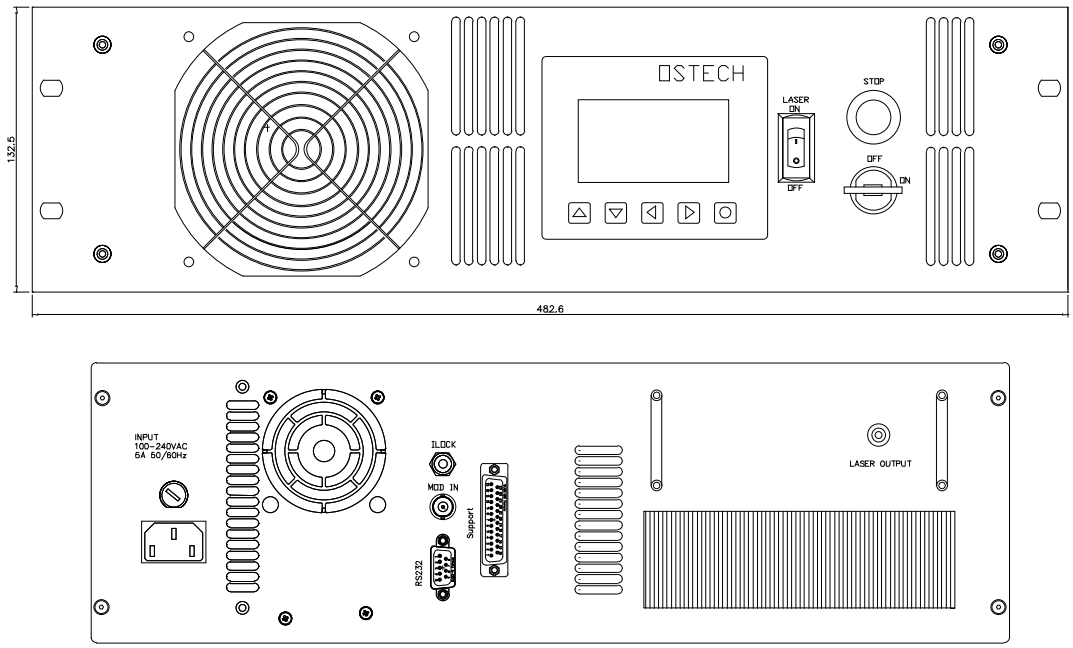
PIN.No	Abbr.		Function
1	ILOCK	out	Output Interlock Output max. 12V 10mA (connect to pin14) to close Interlock
2	LON	out	Output Laser On - High = Laser is in On State [1]
3	SYSOK	out	Output System Ok - High = System OK - Laser Ready for Operatioin [1]
4	LACTIVE	out	Output Laser Active - High = Laser Is Emitting [1]
5	PILOTOFF	in	If your Laser has a pointer device it's switched ON when - LOW [3]
6	-12V	sup	Supply Output -12V max. 250mA for free usage [2]
7	+12V	sup	Supply Output +12V max. 250mA for free usage [2]
8	+5V	sup	Supply Output +5V±1% max. 250mA for free usage [2]
9	AMODOFF	in	Input if LOW = xternal analogue modulation is ON (is changable) [3]
10	DMODOFF	in	Input if LOW = xternal digital modulation is ON (is changable) [3]
11	LOFF	in	Input Laser-OFF - Low = Laser is ON [3]
12	OFAN	sup	optioinal (Fan) Supply - 2V..22V up to 1A for external Fan [7]
13	OGND	sup	optional IGND [7]
14	ILOCK	in	Interlock Input - has to be connected to XO_ILOCK (connect to pin1) to close Interlock
15	MDMOD	in	Input Digital Modulation [4]
16	MGND	sup	Modulation GND
17	MAMOD	in	Input Analog Modulation Input [4] [5]
18	TX	in	RS232-Tx [2]
19	RX	out	RS232-Rx [2]
20,21	GND	sup	Xternal GND
22	n.c.		
23	4-20mA	in	Additional 4..20mA Analogue Modulation Input [7]
24	+24V	sup	Supply Output +24V max. 80mA for free usage [2]
25	XLEVEL	in	Input for Logical Output Level [6]

[1] Logic Output, High Level = XLEVEL (default =5V), LOW Level < 1V, see [6]
[2] vs. XGND
[3] Input internally pulled-up, Input is tolerant up to 24V for High-level
[4] vs. XMOD_GND
[5] 0-4V → 0A-Imax (Ri=10kOhm, for a 0-10V input signal put 15kOhm in series)
[6] XLEVEL is default 5V = TTL-Level, to change Output High level to 12V connect XLEVEL to +12V
or to change Output High level to 24V connect XLEVEL to +24V
[7] vs. IGND Signals are NOT! isolated! Take care!
- current state from 2017-08-01

Laser data	
Laser Module Type	**Laser Modules from Jenoptik, Dilas, Lumics, Oclaro and others asOrequested by the customer**
Optical Output Power	– 120W
Wavelength	405nm / 63Xnm / 808nm / 880nm / 915nm / 938nm / 976nm / 1064nm / 1470nm / 1940nm / others
Fiber Core Diameter, Numerical Aperture	105µm, NA (0.15) 0.22 / 200 µm, NA 0.22 / 400 µm, NA 0.22 / 600 µm, NA 0.22
Fiber Connector	F-SMA 905
Diode Laser Operating Temperature	Typical Diode Laser Operating Temperature 15 ... 30 °C, measured with internal temperature sensor

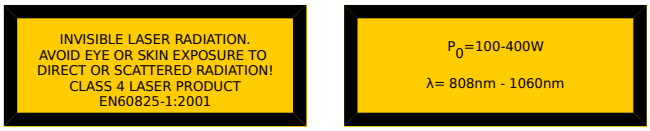
Configuration Examples

Type	Device Name	
669	dst11-BWT-100W-AIR-t19310-669	
698	dst11-DILAS-100W-808nm-400µ-0.22NA-AIR-t19310-698	
712	dst11-DILAS-5W/40W-638nm-400µ-0.22NA-AIR-t19318-712	
742	dst11-DILAS-120W-808nm-400µ-0.22NA-AIR-t193xx-742	
763	dst11-DILAS-25W-450nm-200µ-0.22NA-AIR-t193xx-v0-763	
638	dst11-DILAS-50W-808nm-400µ-0.22NA-AIR-t19310-375-638	
699	dst11-DILAS-80W-808nm-400µ-0.22NA-AIR-t19310-699	
375	dst11-JOLD-75W-808nm-CPXF-2P-AIR-t19310-v4-375	
466	dst11-JOLD-75W-915/938/958nm-105µ-0.22NA-AIR-t19310-466	
392	dst11-JOLD-120W-808/938nm-600µ-0.22NA-AIR-375-392	
772	dst11-LUMICS-75W-976nm-400µ-SMA-0.22NA-AIR-t19310-v0-772	
771	dst11-LUMICS-100W-976nm-400µ-SMA-0.22NA-AIR-t19310-v0-771	
697	dst11-nLight-70W-AIR-t193xx-697	
612	dst11-PHOTONTEC-100W-976nm-t19310-AIR-612	

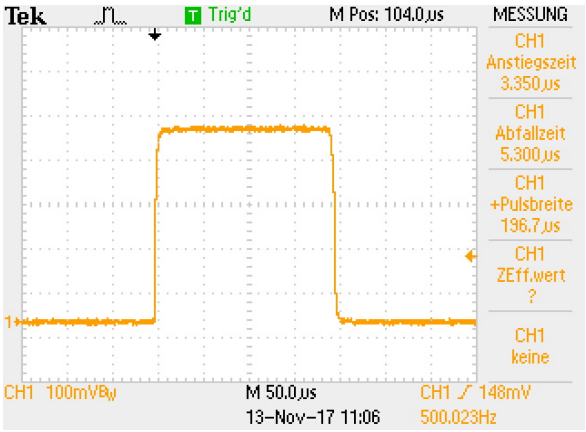


19“ 3HU, 340/400mm depth

Laser Safety



Fast Pulse Option



example for speed up rise (3.35µs) and fall (5.3µs) times

Revision overview:

2013.10.10: "v0" – series setup
2017.01.23: "v1" – new types integrated f.e. JOLD-400, cooling improved, alternatively-new "industrial interface 2nd version" with additional PLC-compatibility as option
2018.01.29: "v2" – new layout and new types integrated

References:

http://www.ostech.de/de/produkte/diodenlasersysteme/dst11-t193
http://www.ostech.de/en/downloads/manuals/ds-en.pdf
http://www.ostech.de/en/downloads/labview