

## ds11-o80-series

## OEM High Power Current Source + TEC Controller



The product series ds11-o80 of OEM drivers has all features of the ds-series. It is powered by an input voltage of 110~230VAC with power factor correction. The power ranges from 150W to 600W. The laser diode current ranges up to 80A and voltage up to 48V.

As in all ds-devices an RS232 interface for controlling and monitoring is integrated. CW or pulse modes are available. An pulse generator is integrated. External digital or analog modulation is supported.

The typical rise time is 25 $\mu$ s. Rise times below 5 $\mu$ s are achievable. Optionally, up to 2 TEC circuits are possible.

### PRECISION CURRENT SOURCE:

- Current: 0 – I<sub>max</sub> (CW and pulsed)
- Accuracy:  $\pm 0.5\%$
- Voltage: 0 – V<sub>max</sub>, Volts Compliance Voltage Range
- Setpoint Resolution: 12Bit (I<sub>max</sub>/4096)
- Noise and Ripple: < 1% full scale (rms)
- trise-tfall typical ~ 25 $\mu$ s (opt. < 5 $\mu$ s)

### INTEGRATED PROTECTION FEATURES:

- Slow-start circuitry
- Voltage and current limits
- Transient protection and shut-down
- Open circuit shut-down
- Over temperature shut-down
- Interlock shut-down

### PRECISION TEMPERATURE CONTROLLER:

- TEC Control Power up to 300W  
4A-14V, 8A-14V, 12A-18V, 12A-24V, 7A-48V or others
- Temperature Control Range: -25°C to 150°C
- Accuracy typ.  $\pm 0.01K$
- Fast Feedback Loop P.I.D. temperature controller
- Temperature Limits
- Temp. Sensor Inputs for NTCs (standard 10 k $\Omega$ ), PT100, PT1000

### PULSING (QCW) MODE OF OPERATION:

- Rise / Fall Time: < 25 $\mu$ s, 10%-90% (< 5 $\mu$ s on request)
- Integrated pulse generator
- Bias Current option
- Integrated low impedance cables for clean pulse response
- Accepts external analog and digital modulation
- Single pulses and pulse bursts, internal or external triggered

### INTERFACE:

- RS-232 remote I/O with optional USB
- free PC User Interface based on LabVIEW™
- free LabVIEW™ VI (LabVIEW™ is a registered trademark of National Instruments Corporation.)

### DEVICE FEATURES:

- Photo Diode Power Monitoring included
- Pilot Laser Supply
- Adjustable External Fan Support
- Supply Voltage: 98~230VAC

### OPTIONAL:

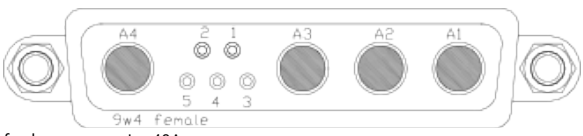
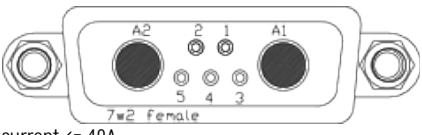
- up to 2 TEC circuits
- additional noise reduction for I < 30A
- up to 200% pulse current boost
- external voltage supply for free usage  
150W or 300W with 5, 12, 24 or 48V

### Selection of some Standard Device Configurations:

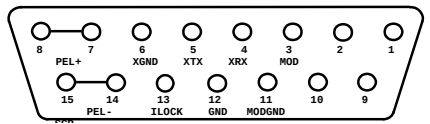
| Type | Device Name                                                                                                                                             | Laser Current Max[A] | Laser Voltage Max[V] | 1st TEC Current Max[A] | 1st TEC Voltage Max[V] |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|------------------------|------------------------|
| 482  | ds11-la25v05-pa08v24-o8007-v0-482                                                                                                                       | 25                   | 5                    | 8                      | 24                     |
| 483  | ds11-la15v12-pa08v24-o8007-v0-483                                                                                                                       | 15                   | 12                   | 8                      | 24                     |
| 484  | ds11-la07v24-pa08v24-o8007-v0-484                                                                                                                       | 7                    | 24                   | 8                      | 24                     |
| 598  | ds11-la3.5v48-pa08v24-o8007-v0-598                                                                                                                      | 3.5                  | 48                   | 8                      | 24                     |
| 485  | ds11-la50v05-pa08v24-o8004-v0-485                                                                                                                       | 50                   | 5                    | 8                      | 24                     |
| 486  | ds11-la30v12-pa08v24-o8007-v0-486                                                                                                                       | 30                   | 12                   | 8                      | 24                     |
| 487  | ds11-la15v24-pa08v24-o8007-v0-487                                                                                                                       | 15                   | 24                   | 8                      | 24                     |
| 488  | ds11-la07v48-pa08v24-o8007-v0-488                                                                                                                       | 7                    | 48                   | 8                      | 24                     |
| 489  | ds11-la75v05-pa08v24-o8004-v0-489                                                                                                                       | 75                   | 4                    | 8                      | 24                     |
| 591  | ds11-la45v12-pa08v24-o8004-v0-491                                                                                                                       | 45                   | 12                   | 8                      | 24                     |
| 592  | ds11-la22v24-pa08v24-o8007-v0-492                                                                                                                       | 22                   | 24                   | 8                      | 24                     |
| 593  | ds11-la10v48-pa08v24-o8007-v0-493                                                                                                                       | 10                   | 48                   | 8                      | 24                     |
| 594  | ls11-la80v04-t8004-v1-594                                                                                                                               | 80                   | 4                    |                        |                        |
| 595  | ls11-la60v12-t8004-v1-595                                                                                                                               | 60                   | 12                   |                        |                        |
| 596  | ls11-la30v24-t8007-v1-596                                                                                                                               | 30                   | 24                   |                        |                        |
| 597  | ls11-la15v48-t8007-v1-597                                                                                                                               | 15                   | 48                   |                        |                        |
|      | TEC-stages have here all 8A 24V and max 150W, optional is a 2nd TEC stage, currents and voltages are flexible up to 300W power at the TECs are possible |                      |                      |                        |                        |

If your type is not among the listed types please request!

## Laser Connector

| <br>for laser current > 40A  | PIN.No | Abbr. | Function                                                      |
|---------------------------------------------------------------------------------------------------------------|--------|-------|---------------------------------------------------------------|
|                                                                                                               |        | LDC-  | Laser Diode Cathode A1,A2 <sub>9w4</sub> or A1 <sub>7w2</sub> |
|                                                                                                               |        | LDA+  | Laser Diode Anode A3,A4 <sub>9w4</sub> or A2 <sub>7w2</sub>   |
| <br>for laser current <= 40A | 1      | PILOT | Pilot Laser Supply                                            |
|                                                                                                               | 2      | PHD   | Photo Diode Cathode vs. GND                                   |
|                                                                                                               | 3      | T1    | Temp. Sensor 1 vs. GND                                        |
|                                                                                                               | 4      | GND   |                                                               |
|                                                                                                               | 5      | LUF   | Supply 800mA 2..24V for fan etc. vs. GND                      |

## Support & TEC-Connector

|  |        |                                        | Sub-D 15, female |
|-----------------------------------------------------------------------------------|--------|----------------------------------------|------------------|
| Pin.No                                                                            | Abbr.  | Function                               |                  |
| 3                                                                                 | MOD    | Modulation Input                       |                  |
| 4                                                                                 | XRX    | RS232-RX                               |                  |
| 5                                                                                 | XTX    | RS232-TX                               |                  |
| 6                                                                                 | XGNC   | RS232-GND                              |                  |
| 7;8                                                                               | PEL+   | Peltier element (+) if TEC is on Board |                  |
| 11                                                                                | MODGND | Modulation GND                         |                  |
| 12                                                                                | GND    | Common Ground                          |                  |
| 13                                                                                | ILOCK  | Interlock vs. GND                      |                  |
| 14;15                                                                             | PEL-   | Peltier element (-) if TEC is on Board |                  |
| 1,9,10,11                                                                         | n.c.   | may carry Signals depending on Type    |                  |
|                                                                                   | SCR    | Common Screen                          |                  |

