# MIL IP67 8chn 11kW laser diode driver
## Buck-boost 8x 16 A/95 V, 48 VDC battery supplied

Datasheet
rev 1.1

## SE6452X

## Description

SE6452X is a special purpose OEM diode driver to supply high power fiber lasers pumping stages for laser drone defense systems.
For mobile application it provides a variable battery supplied input ranging from 40 to 56 VDC.
Its boost topology supplies diodes with compliance voltage to 95 VDC.

All circuitry is encased within a milled aluminium IP67 sealed housing.
Water cooling is integrated into the monolithic chassis structure.

Integrated high current contactors disconnect the battery input from the driver electronics on demand.
For other driver configurations or different applications please contact our product management.

## Features

- Water cooled IP67 chassis
- Output 8x up to 16 A/90 V
- Boost output $U_{out}$ up to 90 V from 40 ..56 VDC battery input
- Battery supply input max. 295 A
- Fully isolated digital interfaces
- typ. 200 µs rise/fall time
- Safety up to Performance Level e (EN 13849-1)

## Specifications

| | |
|---|---|
| Output | max. 11 kW, 8chn. each 0 .. 16 A / 5 .. 90 V [1] |
| Rise time | typ. 150 .. 250 µs [2] |
| Current ripple | typ. 0.2% (of full scale) |
| Digital control | RS485 and USB |
| Driver protective features/ error output | Monitor starting sequence, soft start, transient protection, OVP, over temperature protection, user current limit, shut down reaction time <1 µs output discharge circuit<br>Thermal monitoring: Baseplate, Aux PSU, high-current input connectors, 8x driver PCB<br>Safety relay monitored redundant high current contactors, emergency stop<br>Digital interface completely isolated towards power stage. |
| Efficiency | typ. 96 .. 98.5 % |
| Input | nom. 48 VDC, typ. 40 .. 56 VDC, max. 295 A |
| Environment | min. +5 °C .. +50 °C |
| Cooling | Water |
| Heat loss | max. power dissipation ca. 500 W |
| DC connectors in/out | MIL-DTL-38999 |
| Size | Mainframe 3U, depth 595 mm |
| Weight: | ca. 32 kg |

[1] Higher output to 125 VDC in boost operation available.
Up to 400 VDC diode driver output on request for buck mode operation.

[2] Rise/fall time performance down to 50 µs for CW drivers available.
Faster CW to QCW performance on request

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## Operation / starting sequence:

- Mount the driver to a proper heat sink. Max. power dissipation <=20 W, typical efficiency 97 .. 98% –> refer to fig. 17

## Interface logic

## Start-up timing

fig. 05

fig. 06