

Laser Industry Association

Specification of

Laser Scanhead Analog Control Standard Interface

Standardisation Request / Draft / **not yet standardised!**

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Copyright

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Document history

05/2021	Initial version, draft

Scope

This document describes a standard interface to be used for scanheads that are controlled via analog, unipolar/bipolar signals (mirror excursion proportional to voltage level). It contains the full hardware interface description including the pinout of used connectors.

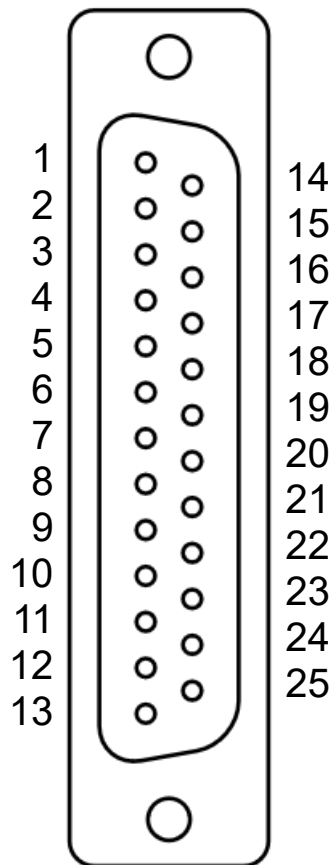
Features

The scanhead analog control interface connector described here contains all signals required for powering and operating such scanheads in one standard connector and provides the following features:

- Standardised pinout which guarantees interconnectivity between all scanheads and control devices that are conform to this standard
- Power supply via the same connector

Description

The scanhead analog control interface connector is a female D-SUB25 connector with the following pinout:



Pin	Name	Description
1	NC	Do not connect, reserved for future use
2	NC	Do not connect, reserved for future use
3	GND	Ground in respect to X/Y/Z analog input
4	GND	Ground in respect to X/Y/Z analog input
5	GND	Optional ground in respect to X/Y/Z analog input
6		
7		
8		

9	V+	Scanhead power supply, positive voltage
10	V+	Scanhead power supply, positive voltage
11	V _{GND}	Scanhead power supply, ground
12	V-	Scanhead power supply, negative voltage
13	V-	Scanhead power supply, negative voltage
14	NC	Do not connect, reserved for future use
15	NC	Do not connect, reserved for future use
16	X	X analog input (+-V bipolar voltage)
17	Y	Y analog input (+-V bipolar voltage)
18	Z	Optional Z analog input (+-V bipolar voltage)
19		
20		
21		
22	V+	Scanhead power supply, positive voltage
23	V _{GND}	Scanhead power supply, ground
24	V _{GND}	Scanhead power supply, ground
25	V-	Scanhead power supply, negative voltage

Scanhead control is done via the input lines X, Y and (optional) Z where a control voltage can be feed in that specifies the excursion of the related mirror (value proportional to voltage). Control voltage range is typically +-5V or +-10V. Here a negative maximum voltage is similar to the extreme excursion of the related mirror in negative direction, a positive maximum voltage is similar to the extreme excursion of the related mirror in positive direction. All intermediate mirror excursions are proportional to the related intermediate voltage levels.

Power supply is done via the pins 9..13 and 22..25. Every pin of a standard D-SUB25 connector is able to handle up to 1A constant current. As there are always three pins concatenated a maximum permanent current of 3A is possible on each of the three lines V+, V_{GND} and V-.

V_{GND} (power supply) and GND (control signal input) can be connected to each other.

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