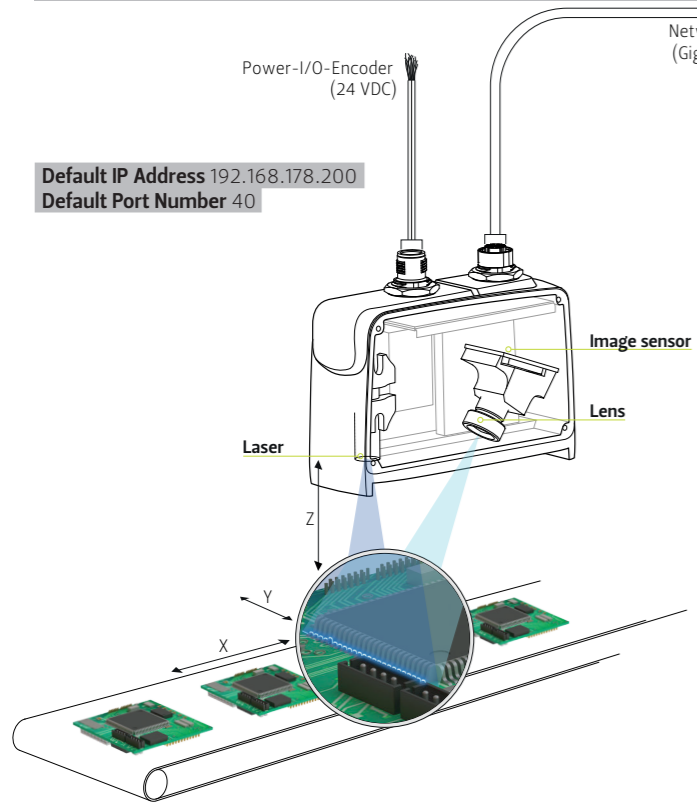# ECCO FAMILY 3D SENSORS
## GET STARTED

**Host computer requirements**

· Operating system: Windows 7 / 10
· RAM: At least 4 GB (ECCO 35/55) | At least 8 GB (ECCO 65/75/95/95+)
· Memory: At least 1 GB of free memory on hard disk
· Network Card: Intel Gigabit Network Card (dedicated to each sensor
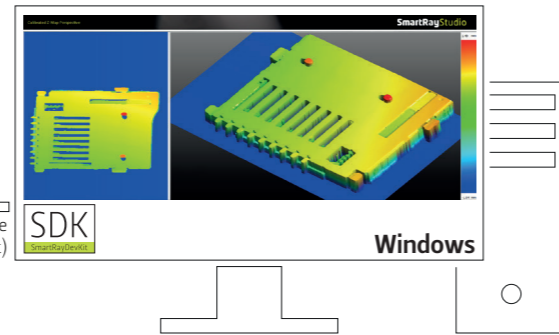· in your installation)

Note: Please deactivate firewall when working with ECCO 95/95+ Series



SDK
SmartRayDevKit

**Windows**

Network Interface
(Gigabit Ethernet)

Power-I/O-Encoder
(24 VDC)

**Default IP Address** 192.168.178.200
**Default Port Number** 40

Image sensor

Lens

Laser

Z

Y

X

# QUICK GUIDE
# ECCO 3D SENSORS

TRIANGULATION CONCEPT
CABLE DESCRIPTION

**SMARTRAY GMBH**
Bürgermeister-Finsterwalder-Ring 12
82515 Wolfratshausen | Germany

**www.smartray.com**
**support@smartray.com**

**Setup instructions**

1. Configure your network card (with Jumbo packets 4088 bytes for ECCO 95/95+ series) to lie in the same IP address range as that of the sensor
   · Navigate to **Control Panel -> Network and Sharing Center**
   · Click **Change adapter settings**. Next, right click on your network card and click **Properties**
   · Navigate to **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**
   · Choose the option: **Use the following IP address**. Next, configure the **IP address** and **Subnet mask**
2. **Make sure to wire the laser safety inputs according to cable pinout description (applicable for ECCO 95/95+ Series only)**
3. Install **SmartRay DevKit (SDK)** (Please get in touch with your SmartRay contact person to get the latest version)
4. Run SmartRay **Studio 4** | Connect to the sensor using default IP address & port number
5. Connect. Configure. Capture. Archive. Visualize 3D!
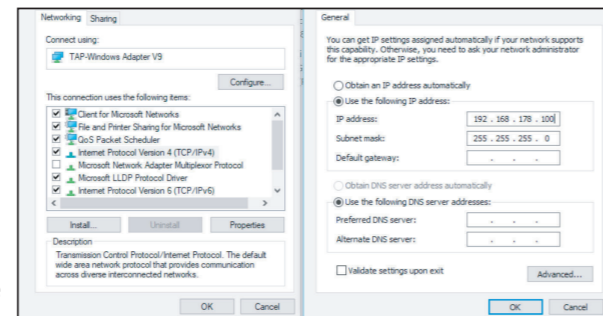


**X** Transport or scan direction
**Y** Along the laser line
**Z** Distance between sensor & part being scanned

**Static IP Address Example**
192.168.178.100

ECCO

# ECCO 35 | ECCO 55
## CABLE DESCRIPTION

### POWER–I/O CABLE PINOUT DESCRIPTION

Part number: 6.310.0XX / 6.311.0XX | The ECCO 35/55 Series has an M9 (8 pin) connector

Ensure stress relief on cables
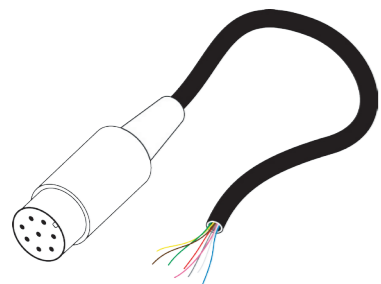
| PIN NO | WIRE COLOR | FUNCTION | DESCRIPTION |
|---|---|---|---|
| Pin 1 | White | Ground | Operating Voltage-, 0 V |
| Pin 2 | Brown | VCC | Operating Voltage+, 24 VDC ±15% ripple |
| Pin 3 | Green | Output 1 | 24 V (max. 20 mA) |
| Pin 4 | Yellow | Output 2 | 24 V (max. 20 mA) |
| Pin 5 | Grey | Input 1 | 5 – 24 V |
| Pin 6 | Pink | Input 2 | 5 – 24 V |
| Pin 7 | Blue | Input 3 | 5 – 24 V |
| Pin 8 | Red | Input 4 | 5 – 24 V |

### ENCODER CABLE PINOUT DESCRIPTION
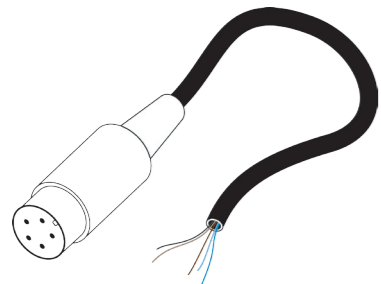
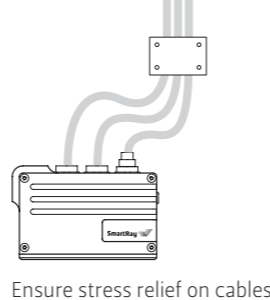Part number: 6.307.0XX / 6.326.0XX | The ECCO 35/55 Series has a M9 (5 pin) connector

| PIN NO | WIRE COLOR | FUNCTION | DESCRIPTION |
|---|---|---|---|
| Pin 1 | White-Brown | Encoder A+ | RS-422 complaint |
| Pin 2 | Brown | Encoder A- | RS-422 complaint |
| Pin 3 | White-Blue | Encoder B+ | RS-422 complaint |
| Pin 4 | Blue | Encoder B- | RS-422 complaint |
| Pin 5 | Black | GND | Ground |

## WARNING

⚠ **FAILING TO ADHERE TO THE WARNINGS COULD RESULT IN DAMAGING THE SENSOR!**

· Before sensor power-up, ensure that the corresponding pin of an **unused sensor input** is terminated (mechanically fixed and connected to Ground. The input signal voltagemust not exceed the operating voltage (VCC).
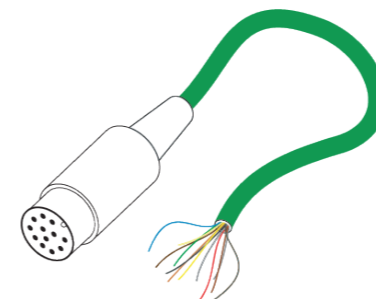
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# ECCO 65 | ECCO 75 | ECCO 95 | ECCO 95+
## CABLE DESCRIPTION

### POWER – I/O/6.327.0XX/6.332.0XX–ENCODER CABLE PINOUT DESCRIPTION

Part number: 6.320.0XX / 6.322.0XX / 6.327.0XX / 6.332.0XX | The ECCO 65/75/95/95+ Series has an M12 (12 pin) connector

Ensure stress relief on cables

| PIN NO | WIRE COLOR | FUNCTION | DESCRIPTION |
|---|---|---|---|
| Pin 1 | Brown–Blue | Ground | Operating Voltage-, 0 V |
| Pin 2 | Brown–Red | VCC | Operating Voltage+, 24 VDC ±15% ripple |
| Pin 3 | Grey | Input 1 | 5 – 24 V |
| Pin 4 | Red | Output 2 | 24 V (max. 20 mA) |
| Pin 5 | Orange | Output 1 | 24 V (max. 20 mA) |
| Pin 6 | Brown | Encoder B- | RS-422 complaint |
| Pin 7 | Green | Encoder A+ | RS-422 complaint |
| Pin 8 | Blue | Input 3 | ECCO 65/75: 12 – 24 V ECCO 95/95+: Laser Safety Input-, GND |
| Pin 9 | White–Yellow | Input 4 | ECCO 65/75: 12 – 24 V ECCO 95/95+: Laser Safety Input+, 24 VDC |
| Pin 10 | White–Black | Input 2 | 5 – 24 V |
| Pin 11 | Black | Encoder B+ | RS-422 complaint |
| Pin 12 | Yellow | Encoder A- | RS-422 complaint |
| - | Yellow–Green or Black (thick wire) | EARTH | Grounding Shield |

· Before sensor power-up, ensure that the corresponding pin of an **unused sensor output** is mechanically fixed in an insulated screw joint, and **not** connected to Ground.

· Failure to **wire the cables correctly** can risk destroying the sensor.