

Basler Accessories



Technical Specification

POWER-I/O-PLC+ CABLE, HRS 12P/OPEN, 10M

Order Numbers

2000034085

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1 Introduction

The Power-I/O-PLC+ cables with Hirose 12-pin connector and open end feature an integrated PLC+ electronic board.

The key feature of this board is that it is able to adjust input voltage levels coming from PLC devices (up to 24 V) to the TTL voltage levels required by the camera (0 to 5 V). [Table 1](#) contrasts these different voltage levels.

In addition, the PLC+ electronic board protects the power supply of the camera as well as the input and output lines of the camera against the following:

- Reverse polarity
- Turn-on voltage spikes
- Positive or negative overvoltage spikes

The cables also offer protection of the signal transmission as well as the power supply against EMI and ESD. This is achieved by means of twisted pair cables in which each pair of wires carries just one signal: one wire carries the signal itself and the other is the signal's own return conductor.

| Camera I/O Signal Voltage | PLC+ Cable Input Voltage | Significance |
|---------------------------|--------------------------|--------------------------------|
| Max. +24 VDC | Max. +24 VDC + 10 % | Operating voltage limit. |
| +0 to +1.4 VDC | +0 to +8.4 VDC | Voltage indicates a logical 0. |
| > +1.4 to +2.2 VDC | > +8.4 to +10.4 VDC | Logical state is undefined. |
| > +2.2 VDC | > +10.4 VDC | Voltage indicates a logical 1. |

Table 1: Voltage Requirements

2 Technical Data

| Order Number | Description | Applicable Cameras |
|--------------|--|--|
| 2000034085 | Power-I/O Cable for PLC with HRS 12-pin connector and open end, 10 m | aviator GigE, aviator CL (I/O only), pilot GigE, scout GigE, scout FW (I/O only) |

Table 2: Cable Type

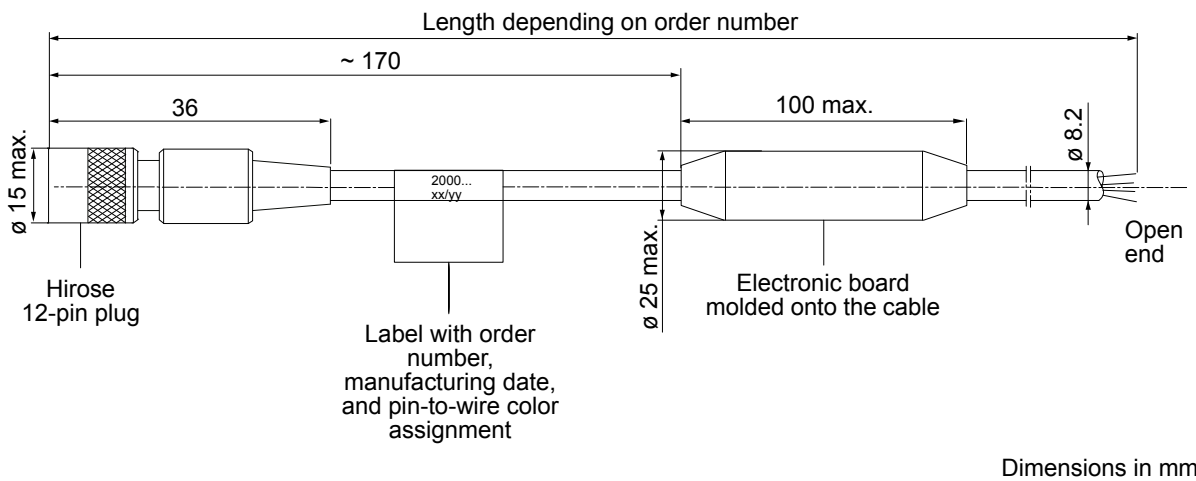


Fig. 1: Cable Overview

Wiring Information



The shading in [Table 3](#) indicates which wires form twisted pairs inside the cable.

| Pin Number | Wire Color | aviator CL | aviator GigE pilot GigE scout GigE | scout FW |
|------------|--------------|------------------|--|------------------|
| 1 | White | | Camera Ground | |
| 2 | Green | | Camera Ground | |
| 3 | Pink | Opto In 1 | Opto In 1 | Opto In 1 |
| (5) | Gray | Opto In 1 Ground | Opto In 1 Ground | Opto In 1 Ground |
| 4 | Red | Opto In 2 | Opto In 2 | Opto In 2 |
| (5) | Blue | Opto In 2 Ground | Opto In 2 Ground | Opto In 2 Ground |
| 6 | Violet | Opto Out 1 | Opto Out 1 | Opto Out 1 |
| (10) | Black | Opto Out 1 VCC | Opto Out 1 VCC | Opto Out 1 VCC |
| 7 | Red/Blue | | Opto Out 2 | Opto Out 2 |
| (10) | Gray/Pink | | Opto Out 2 VCC | Opto Out 2 VCC |
| 8 | Brown | | Camera VCC | |
| 9 | Yellow | | Camera VCC | |
| (10) | White/Green | | Opto Out 3 VCC | Opto Out 3 VCC |
| 11 | Brown/Green | | Opto Out 3 | Opto Out 3 |
| (10) | White/Yellow | | Opto Out 4 VCC | Opto Out 4 VCC |
| 12 | Yellow/Brown | | Opto Out 4 | Opto Out 4 |

Table 3: Wiring Information



(x) means that the wire is connected internally to pin x.

For more details, see the respective camera user's manual.

Physical Specifications

| | |
|--------------------------------------|--|
| Camera-Side Connector | Hirose 12 pin (HR10A-10P-12S (73)) |
| Host-Side Connector | None, open end |
| Cable Cross-Section | 8 x 2 x 0.14 mm ² (close to AWG 26) |
| Cable Diameter | 8.2 mm |
| Wire Insulation | PVC |
| Outer Jacket | PVC |
| Minimum Bending Radius | 49,2 mm (6 x cable diameter), fixed installation |
| Maximum Bending Cycles | None (fixed installation only) |
| Suitable for Drag Chain Applications | No |
| Suitable for Robotics Applications | No |

Table 4: Physical Specifications

Electrical Specifications

| | |
|---------------------------|--------------------------|
| Nominal Operating Voltage | See camera user's manual |
| Maximum Operating Voltage | See camera user's manual |
| Wire Resistance | ≤ 142 Ω/km |

Table 5: Electrical Specifications

Environmental Specifications

| | |
|-----------------------------|------------------------------|
| Operating Temperature Range | -25 °C - +80 °C (not moving) |
|-----------------------------|------------------------------|

Table 6: Environmental Specifications

Plug Specifications

| | |
|--------------------------|----------------------|
| Durability | > 1000 mating cycles |
| Contact Resistance | max. 10 mΩ |
| Contact Plating | Silver |
| Protection Rating | IP 40 |
| Plug Insulation Material | Polyamide/PBT |

Table 7: Plug Specifications

General Information

| | |
|----------------|-----------------------|
| RoHS Compliant | Yes |
| CE Conformity | Yes (RoHS compliance) |
| Warranty | 1 year |
| UL Conformity | No |

Table 8: General Information



The cables are intended for use with the cameras specified in [Table 2](#) only.

Read the respective user's manual including the safety warnings before connecting the cable to the camera. The user's manual also contains further information about pin assignments, power requirements as well as comprehensive information about installing and using the camera.

You can download the user's manual and related documents for your camera free of charge from the Basler website: www.baslerweb.com.

Revision History

| Doc. ID Number | Date | Changes |
|----------------|-------------|-----------------------------------|
| DG00139901000 | 22 Sep 2015 | Initial release of this document. |