Industrial-Automation

***System HIMatrix***

# Data Sheet

## Z 7306

### Shunt-Adapter

HIMA Paul Hildebrandt GmbH
Industrial Automation

**HI 800 349 BEA**

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# 1 The *HIMatrix* Z 7306 Shunt Adapter

HIMA part number 98 2220115

## 1.1 Shunt Adapter

The shunt adapter is a plug-in module for the analog inputs of the safety-related controller F35 and Remote I/O F3 AIO 8/4 01.

- Shunt 250 Ω
- Overvoltage protection

The shunt adapter is coated for protection against dirt and humidity.

The resistor for the HART mode is built into the adapter.
The HART resistor value is 250 Ω.


**Figure 1: View of the Z 7306 shunt adapter**

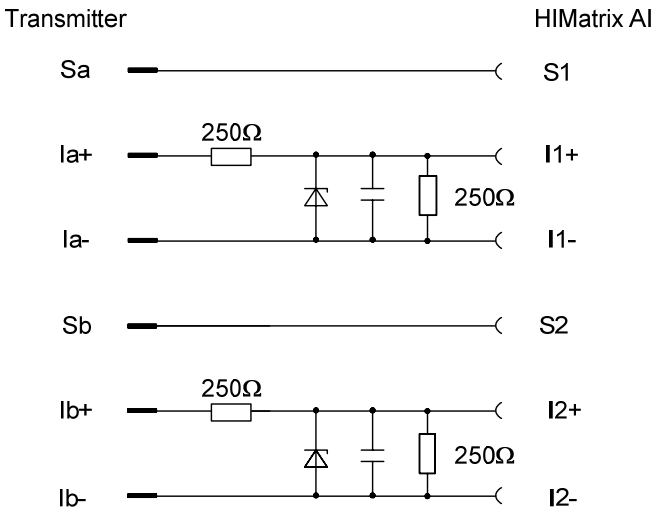


**Figure 2: Shunt adapter - internal wiring to the HIMatrix analog inputs**

The shunt adapter terminals are connected as follows:

| Designation | Function (analog inputs) |
|---|---|
| Sa | Transmitter supply a |
| Ia+ | Analog input a |
| Ia- | Reference pole a |
| Sb | Transmitter supply b |
| Ib+ | Analog input b |
| Ib- | Reference pole b |

**Table 1: Terminal assignment of the shunt adapter**

## 1.2 Applications of the F35 Controller

**For all applications the adapter limit values for current and voltage must be regarded (see Technical Data). When connecting lines, please pay attention to the polarity!**

1. Transmitter connection of a with a line resistance RL < 30 Ω and a 250 Ω burden in the shunt adapter

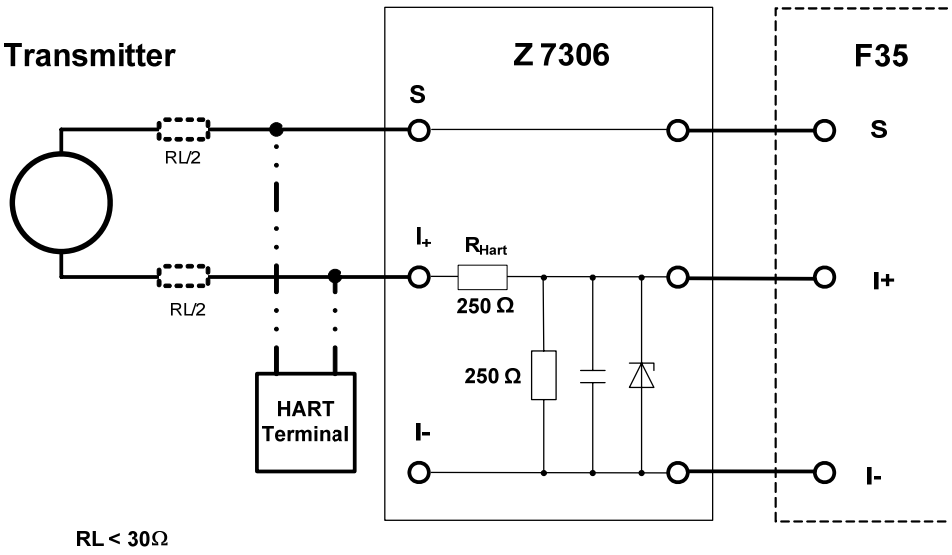


**Figure 3: Connection of the transmitter to a HIMatrix F35, internal power supply**

2. Transmitter connection with an external feed and a 250 Ω burden in the shunt adapter

**In case of a short-circuit of a transmitter**

- **the adapter Z 7306 may be destroyed, or**
- **the affected transmitter feed may reach the limit causing the other transmitters fed by it to provide incorrect values.**

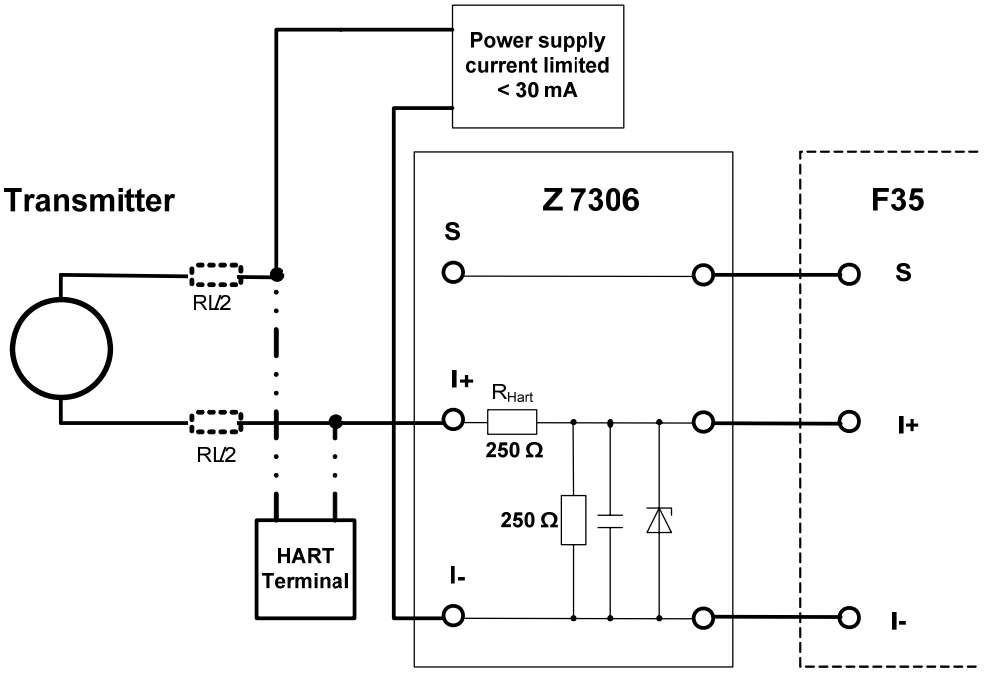


**Figure 4: Connection of the transmitter to a HIMatrix F35, external power supply**

Power supply by some external device is only necessary, if the internal supply cannot provide the necessary $U_{N\ min}$.

The minimum voltage of the power supply is calculated as follows:
$U_{N\ min} = U_{transmitter\ min} + (R_{Hart}+R_L+250\ \Omega) * 23mA$.

## 1.3 Applications of the F3 AIO 8/4 01 Module

**For all applications the adapter limit values for current and voltage must be considered (see Technical Data). When connecting lines, please pay attention to the polarity !**

1. Transmitter connection with a line resistance $R_L$ < 30 Ω and a 250 Ω burden in the shunt adapter

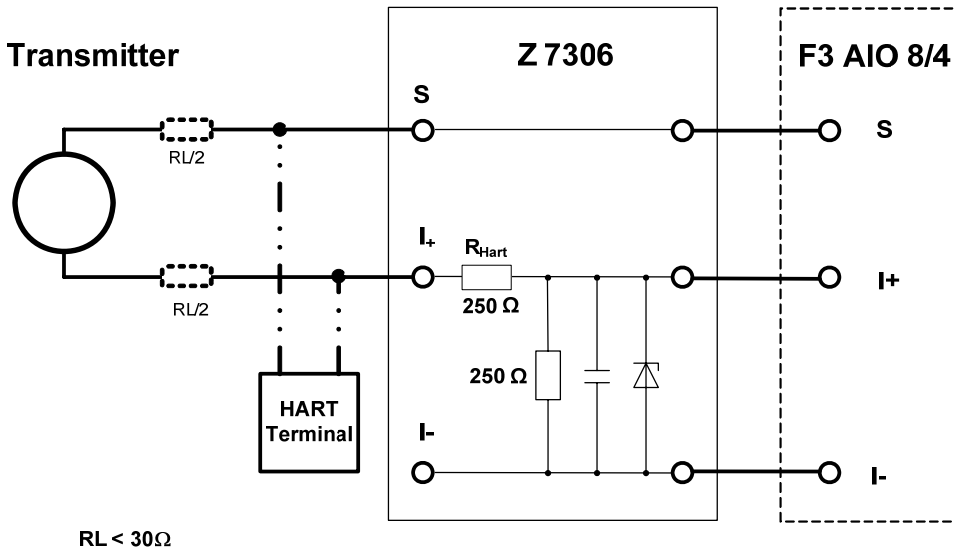


**Figure 5: Connection of the transmitter to F3 AIO 8/4 01 module, internal power supply**

**In case of a short-circuit of a transmitter**

- **the Z 7306 adapter may be destroyed or**
- **the affected transmitter feed may reach the limit causing the other transmitters fed by it to provide incorrect values.**

2. Transmitter connection with an external feed and a 250 Ω burden in the shunt adapter

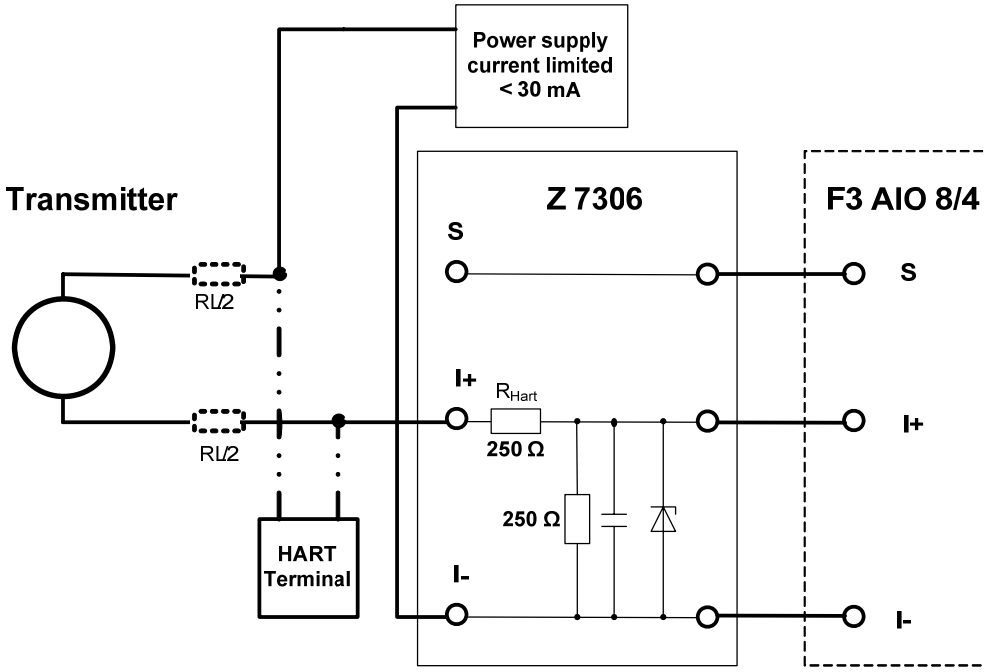


**Figure 6: Connection of the transmitter to F3 AIO 8/4 01 module, external power supply**

Power supply by some external device is only necessary, if the internal supply cannot provide the necessary $U_{N\ min}$.

The minimum voltage of the power supply is calculated as follows:
$U_{Nmin} = U_{transmitter\ min} + (R_{Hart}+R_L+250\ \Omega) * 23\ mA$.

## 1.4 Technical Data Z 7306

| **Shunt adapter** | |
|---|---|
| Resistance | 250 Ω |
| Tolerance | 0.1% |
| Temperature coefficient | 25 ppm/°C |
| Permanent load capacity at current measurement | See service value of analog inputs |
| Maximum power loss per shunt | 0.4 W (250 Ω)<br>at $I_{max}$ = 40 mA |
| Overvoltage protection | $I_{max}$ = 40 mA @ 25 °C or $U_{I\ max} \leq$ 24 V |
| Operating temperature | 0 °C to +60 °C |
| Storage temperature | -40 °C to +85 °C |
| Dimensions (H x W x D) | 35 x 23 x 25 mm |

**Table 2: Technical Data**

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**...the safe decision.**


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