

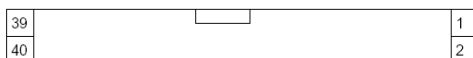
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# 1. Installation

## 1.1 Connection to EPC 9, EPC 10, and LIH 1600

The TIB 14S can be connected to the digital I/O connector of EPC 9, EPC 10, ITC-16, and LIH 1600 via the connector on the rear panel labelled Digital In (ITC-16).

Digital In (ITC-16) connector :



PIN number	SIGNAL
1	
3	
5	
7	
9	
11	
13	
15	
17	
19	Ground
21	Ground
23	
25	DIGIT_0
27	DIGIT_1
29	DIGIT_2
31	DIGIT_3
33	DIGIT_4
35	DIGIT_5
37	DIGIT_6
39	DIGIT_7

PIN number	SIGNAL
2	
4	DIGIT_15
6	
8	
10	
12	
14	DIGIT_15
16	
18	
20	Ground
22	Ground
24	
26	DIGIT_8
28	DIGIT_9
30	DIGIT_10
32	DIGIT_11
34	DIGIT_12
36	DIGIT_13
38	
40	

Figure 1.1: Digital In Connector (ITC-16)

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## 1.2 Connection to CIO-DIO or PCI-DIO 24H interface card

In case you are not using the TIB 14S in combination of a device mentioned above, you can be connected to a CIO-DIO or PCI-DIO24H interface card via the connector on the rear panel labelled **Digital In (CIO-DIO)**.

**DIGITAL IN (CIO-DIO-24) connector :**

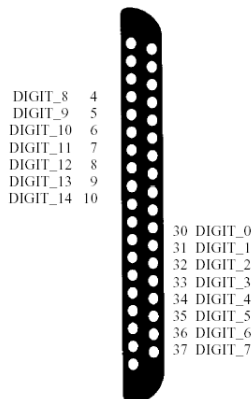
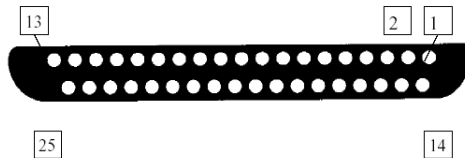


Figure 1.2: Digital In Connector (CIO-DIO)

## 1.3 Connection of Magnetic Valve

TRIGGER OUT connector (rear-panel):



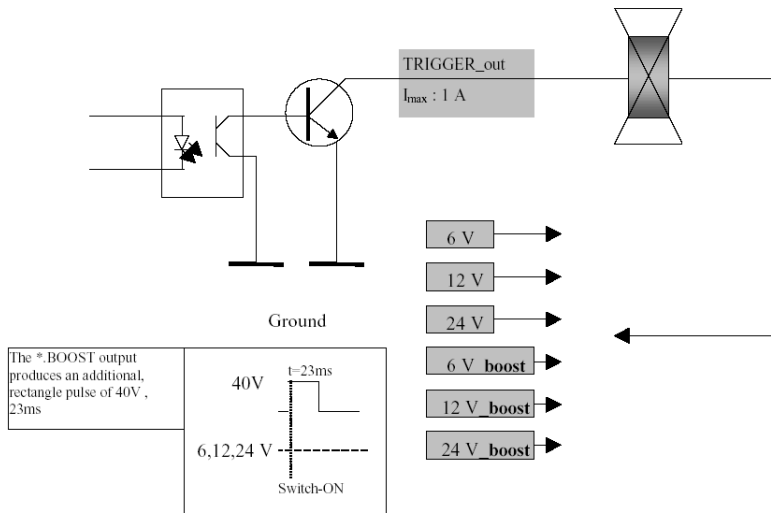
PIN number	SIGNAL
1	TRIGGER-0
2	TRIGGER-1
3	TRIGGER-2
4	TRIGGER-3
5	TRIGGER-4
6	TRIGGER-5
7	TRIGGER-6
8	TRIGGER-7
9	TRIGGER-8
10	TRIGGER-9
11	TRIGGER-10
12	TRIGGER-11

PIN number	SIGNAL
13	TRIGGER-12
14	TRIGGER-13
15	GND (ground)
16	6V
17	GND (ground)
18	12V
19	GND (ground)
20	24V
21	6V BOOST
22	12V BOOST
23	GND (ground)
24	24V BOOST
25	GND (ground)

Figure 1.3: Trigger Out Connector

The advantage of the open collector output is the possibility to connect magnetic valves with various voltages. The open collector output switches the ground line with a max. output current of 1A. The TTL output (+5V) switches the output with a max current of 20mA. The TTL output and the open-collector output are switched in parallel. Each trigger command is indicated by a LED and activates both, TTL output and a open collector output.

The opto coupled output avoids ground loops in the setup which often is the reason for artifacts and increasing noise level during the measurement. For switching a magnetic valve it is absolutely necessary to mount a protection diode. The protection diode (mounted anti-parallel, directly at the valve) avoids spikes during the measurement and protects the output transistor of the TIB14 interface.



## 1.4 Connection of Peripheral Devices

The BNC connectors at the front panel of the TIB 14S can be used to control peripheral devices.