

# **Commission Implementing Regulation (EU) 2016/799**

**of 18 March 2016**

**implementing Regulation (EU) No 165/2014 of the European Parliament and of the Council laying down the requirements for the construction, testing, installation, operation and repair of tachographs and their components**

## **ANNEX I C**

**Requirements for construction, testing, installation, and inspection**

### **Appendix 6**

#### **FRONT CONNECTOR FOR CALIBRATION AND DOWNLOAD**

##### **1.HARDWARE**

##### **1.1. Connector**

INT\_001The downloading/calibration connector shall be a 6 pin connector, accessible on the front panel without the need to disconnect any part of the tachograph, and shall comply with the following drawing (all dimensions in millimetres):

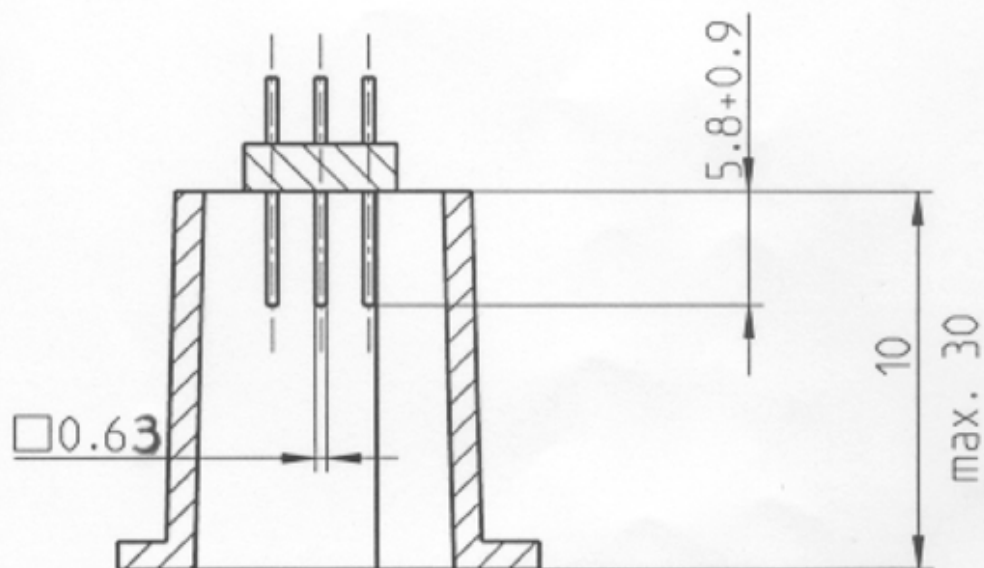
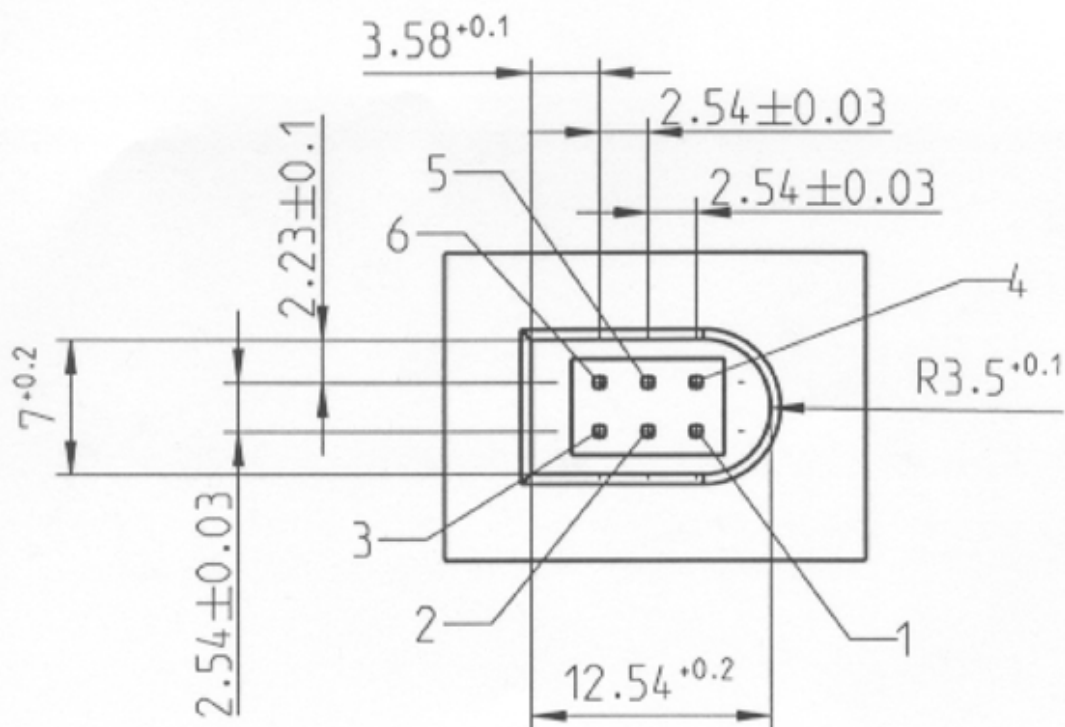
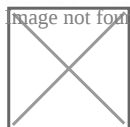
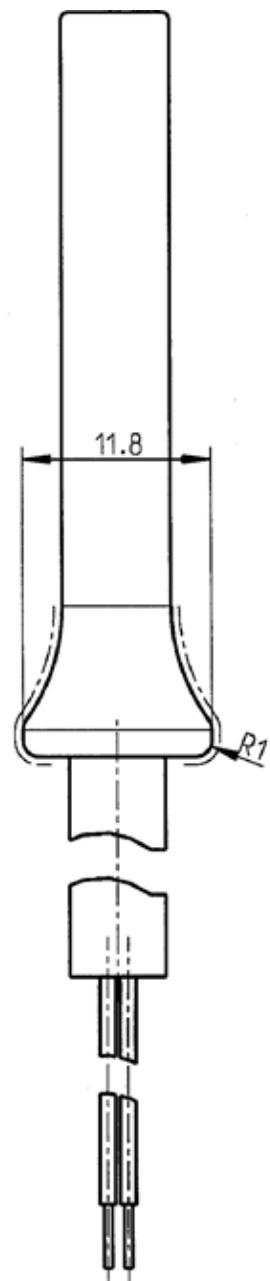
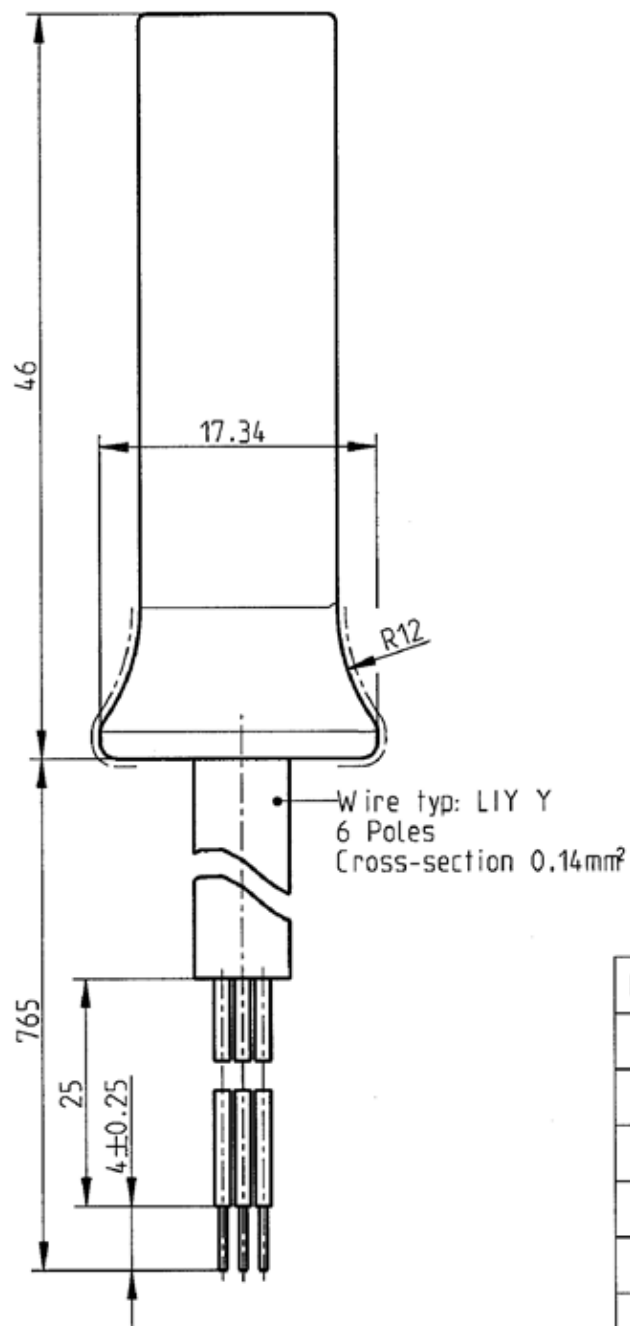


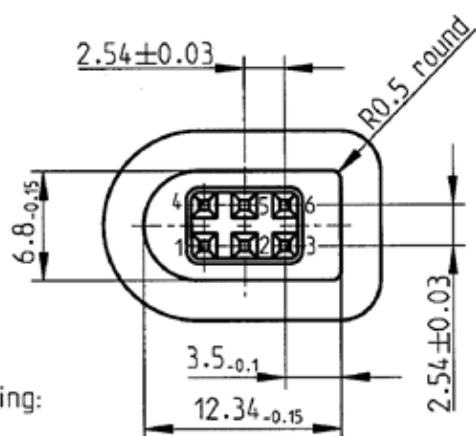
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The following diagram shows a typical 6 pin mating plug:

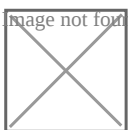


| PIN | colour |
|-----|--------|
| 1   | white  |
| 2   | brown  |
| 3   |        |
| 4   | green  |
| 5   | yellow |
| 6   |        |



Contact:  
47 745-001  
Socket housing:  
650 43-034

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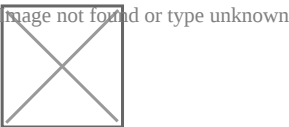
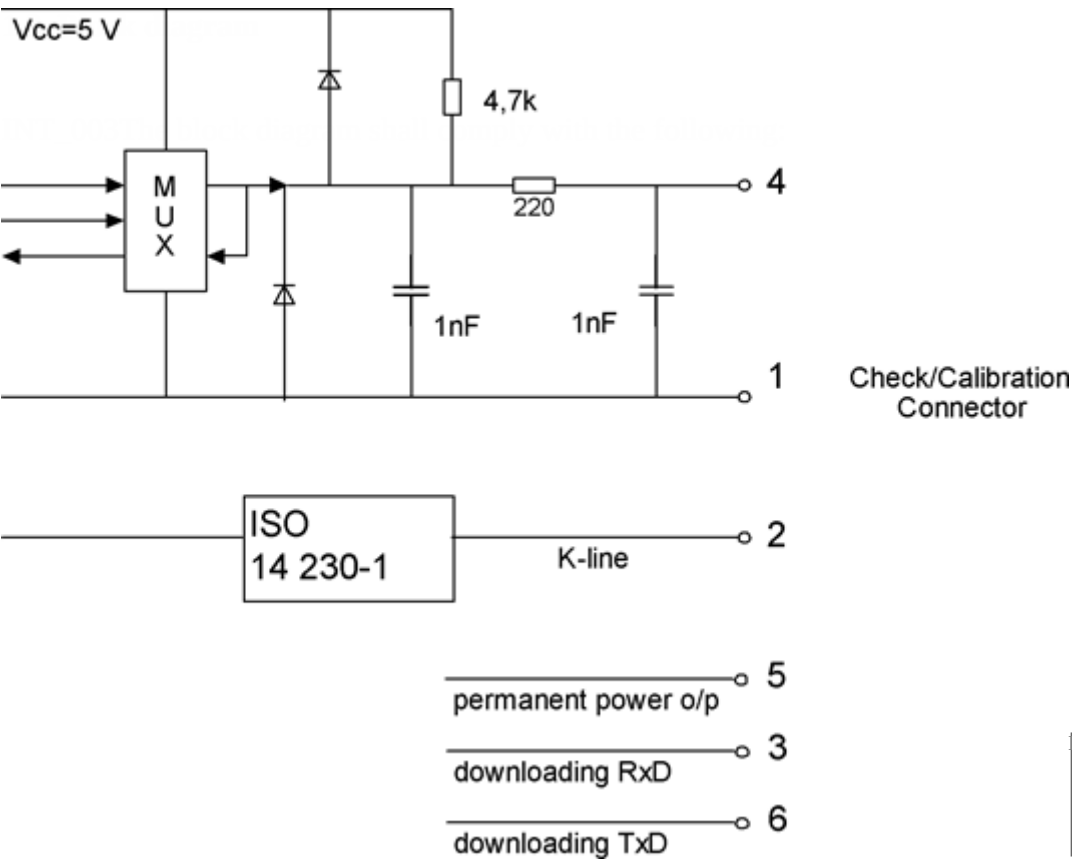


--- Surface pattern  
VDI 3400 Ref. 36 Ra 6.3 μm

## 1.2. Contact allocation

INT\_002Contacts shall be allocated in accordance with the following table:

| Pin | Description            | Remark                                                                                                                                                    |
|-----|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Battery minus          | Connected to the battery minus of the vehicle                                                                                                             |
| 2   | Data communication     | K-line (ISO 14230-1)                                                                                                                                      |
| 3   | RxD —<br>Downloading   | Data input to tachograph                                                                                                                                  |
| 4   | Input/output signal    | Calibration                                                                                                                                               |
| 5   | Permanent power output | The voltage range is specified to be that of the vehicle power minus 3V to allow for the voltage drop across the protective circuitry<br><br>Output 40 mA |
| 6   | TxD —<br>Downloading   | Data output from tachograph                                                                                                                               |

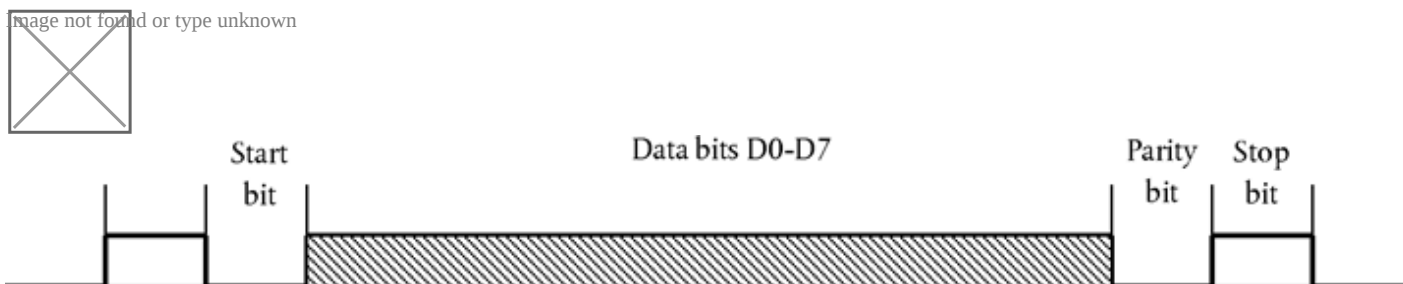


## 2.DOWNLOADING INTERFACE

INT\_004The downloading interface shall comply to RS232 specifications.

INT\_005The downloading interface shall use one start bit, 8 data bits LSB first, one even parity bit and 1 stop bit.

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### Data byte organisation

Start bit

:

one bit with logic level 0;

Data bits

:

transmitted with LSB first;

Parity bit

:

even parity

Stop bit

:

one bit with logic level 1

When numerical data composed by more than one byte are transmitted, the most significant byte is transmitted first and the least significant byte last.

INT\_006Transmission baud rates shall be adjustable from 9 600 bps to 115 200 bps. Transmission shall be achieved at the highest possible transmission speed, the initial baud rate after a start of communication being set at 9 600 bps.

### 3.CALIBRATION INTERFACE

INT\_007The data communication shall comply to ISO 14230-1 Road vehicles — Diagnostic systems — Keyword protocol 2000 — Part 1: Physical layer, First edition: 1999.

INT\_008The input/output signal shall comply with the following electrical specification:

| Parameter        | Minimum | Typical | Maximum | Remark               |
|------------------|---------|---------|---------|----------------------|
| $U_{low} (in)$   |         |         | 1,0 V   | $I = 750 \text{ ?A}$ |
| $U_{high} (in)$  | 4 V     |         |         | $I = 200 \text{ ?A}$ |
| Frequency        |         | 4 kHz   |         |                      |
| $U_{low} (out)$  |         | 1,0 V   |         | $I = 1 \text{ mA}$   |
| $U_{high} (out)$ | 4 V     |         |         | $I = 1 \text{ mA}$   |

INT\_009The input/output signal shall comply with the following timing diagrams:

