European Plastics and Rubber Machinery

| EUROMAP 16 | Injection Moulding Machines<br>Electrical Connection of Peripheral Equipment<br>with Analog or Digital Interface |
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9 pages

This recommendation was prepared by the Technical Commission of EUROMAP.

www.euromap.org

**EUROMAP Technical Commission**
c/o VDMA • FV KuG

Lyoner Str. 18
DE 60528 Frankfurt am Main

Phone + 49 (69) 6603-1833
Fax + 49 (69) 6603-2833
E-Mail:euromap@vdma.org

## History

| Date | Version | Changes |
|---|---|---|
| **October 2006** | **1.1** | A further supplier added |
| **July 2007** | **1.2** | Supplier's data amended |
| **November 2009** | **1.3** | A further supplier added |
| **May 2015** | **1.5** | List of plug suppliers removed.<br>Please visit www.euromap.org/technical-issues/technical-recommendations for the current list. |

## Contents Page

# 1 Scope and application

This EUROMAP recommendation defines the connection between the injection moulding machine and peripheral equipment.

For each peripheral equipment a separate connection shall be used.

*Note: An emergency stop circuit is not included in this specification.*

# 2 Description

For analog signals a connection according to 3.1, for binary signals a connection according to 3.2 shall be used.

# 3 Plug and socket outlet

The connection between the injection moulding machine and the peripheral equipment is achieved by the plugs specified below [1)]. The same type of plug is fitted to the injection moulding machine and the peripheral equipment.

Arrangement of pins and sockets viewed from the mating side (opposite the wiring side).

[1)] See www.euromap.org/technical-issues/technical-recommendations for suppliers

## 3.1 Analog Signals (Version A)

Gold plated contacts shall be used.

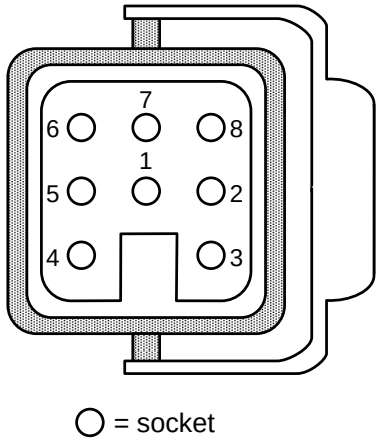



**Figure 1: Plug on the injection moulding machine and on the peripheral equipment**

**Table 1: Plug contact assignment**

| Plug contact No | Description |
|---|---|
| 1, 2 | Set point (from injection moulding machine to peripheral equipment);<br>0 to +10 V;<br>reference on plug contact No 2;<br>impedance max. 1 kΩ |
| 3, 4<br>optional | Actual value (from peripheral equipment to injection moulding machine);<br>0 to +10 V;<br>reference on plug contact No 4;<br>impedance max. 1 kΩ |
| 5, 6<br>optional | Thermocouples (IEC 584 part 1, type Fe – CuNi <J>);<br>positive pole on plug contact No 5 |
| 7, 8<br>optional | Manufacturer dependent;<br>positive pole on plug contact No 7;<br>shield preferably on plug contact No 8 |

## 3.2 Binary Signals (Version B)

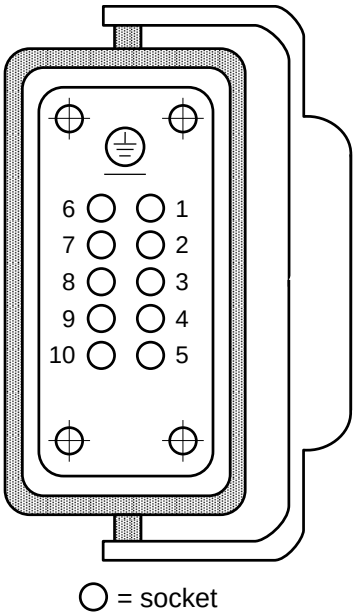



**Figure 2: Plug on the injection moulding machine and on the peripheral equipment**

**Table 2: Plug contact assignment**

| Plug contact No | Description |
|---|---|
| 1 | Selection and reference voltage from injection moulding machine;<br>max. 40 V, max 1 A, DC |
| 2 | Online of peripheral equipment (input of injection moulding machine) |
| 3, 4 | Coding of status, see table 3 (input of injection moulding machine) |
| 5<br>optional | Manufacturer dependent (input of injection moulding machine) |
| 6 | Remote switch on (output of injection moulding machine) |
| 7 | Stand by (output of injection moulding machine) |
| 8<br>optional | Manufacturer dependent (output of injection moulding machine) |
| 9<br>optional | Manufacturer dependent (output of injection moulding machine) |
| 10 | Reference voltage from peripheral equipment;<br>max. 40 V, max 1 A, DC |

**Table 3: Coding of status**

| Plug contact No 3 | 4 | Description |
|---|---|---|
| Coding | | |
| 0 | 0 | Alarm |
| 0 | 1 | Warning |
| 1 | 0 | Start-up |
| 1 | 1 | Ready for production |

0: High impedance
1: Reference voltage

Digital inputs to the injection moulding machine (plug contacts 2 to 5) must be in high impedance when the peripheral equipment is not selected. This allows to use a bus structure to multiplex the input signals of the injection moulding machine (see figure 3).

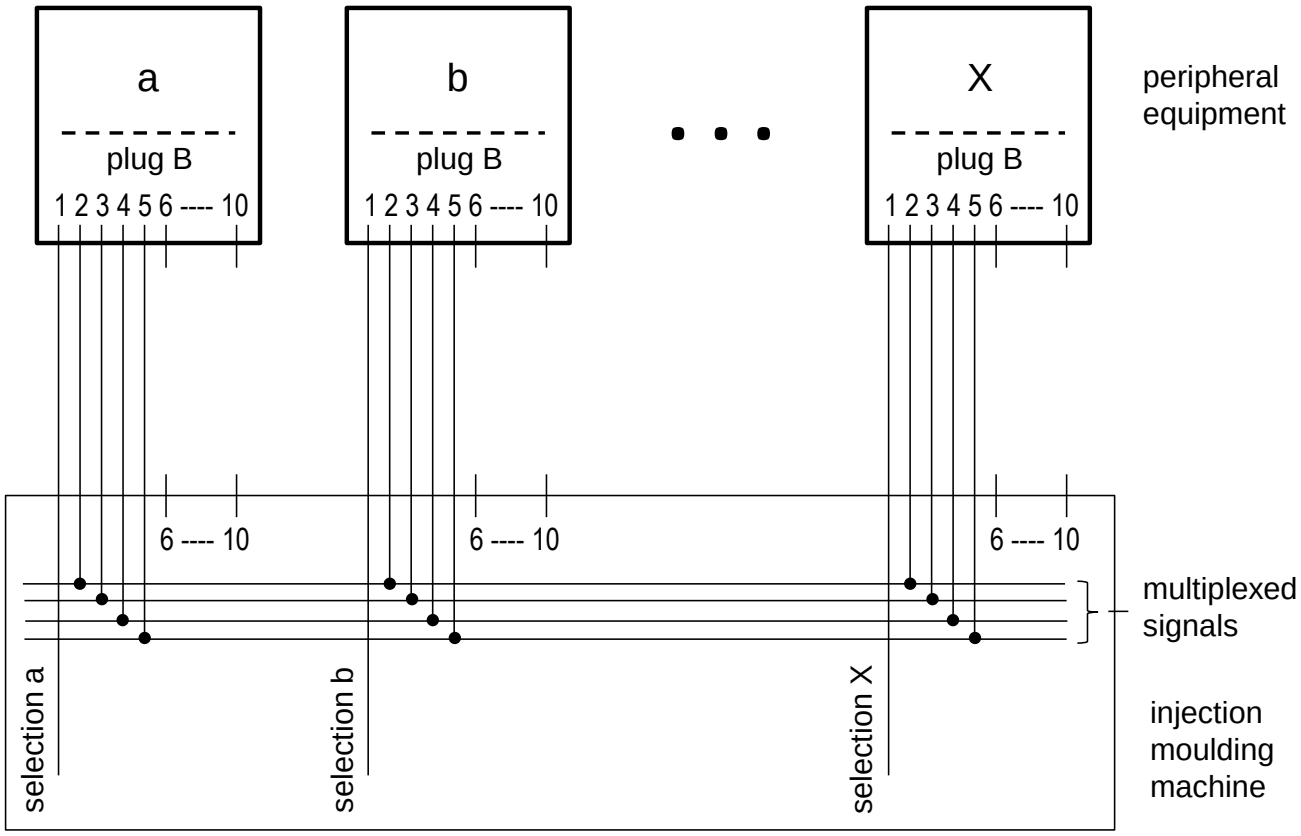
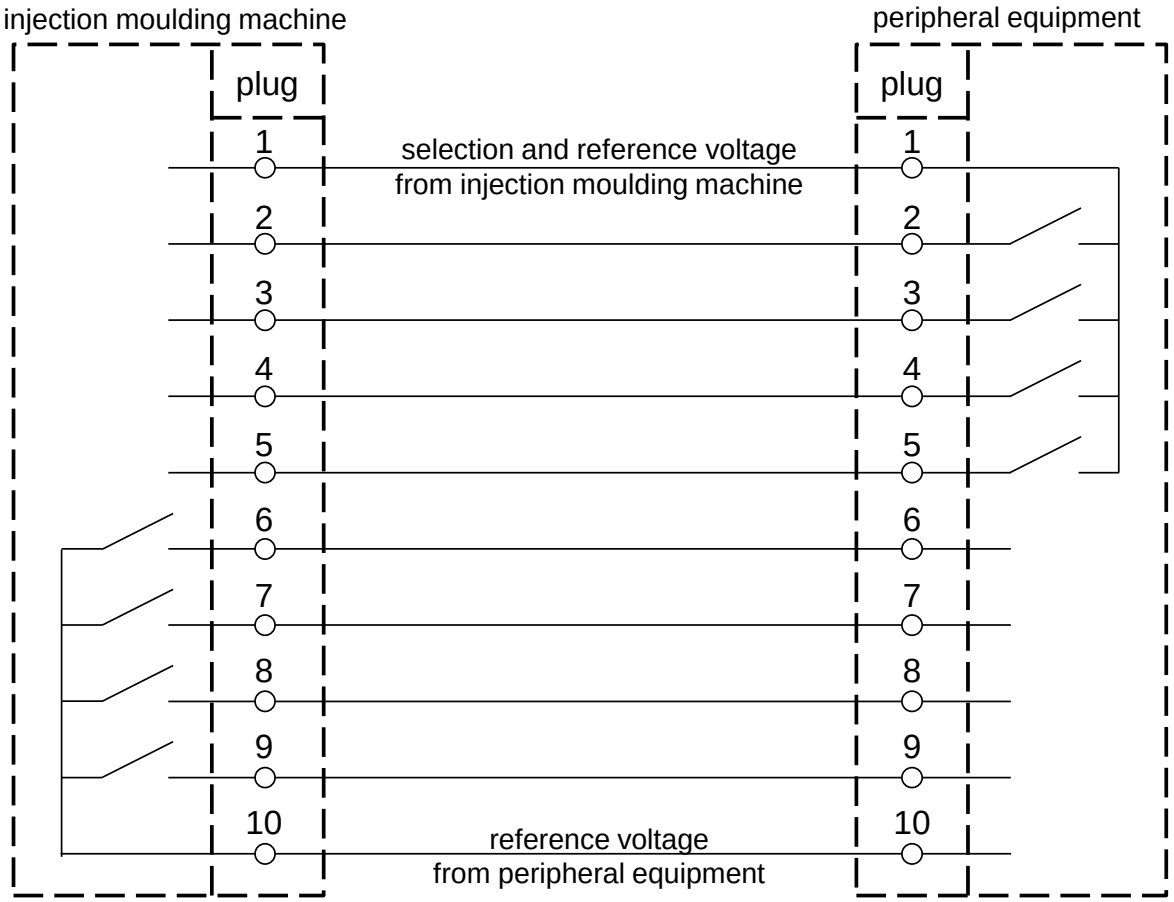



**Figure 3: Example of a bus structure of input signals**

For better understanding an example of the interconnection between the injection moulding machine and a peripheral equipment is shown in figure 4.




Plug contact No 1 – 5: isolated in peripheral equipment
Plug contact No 6 – 10: isolated in injection moulding machine
Insulation voltage: 2500 V (IEC 435)

**Figure 4: Example the interconnection between injection moulding machine and peripheral equipment**

# 4 Designation

The type of interface should be specified to designate the connection between the injection moulding machine and the peripheral equipment.

Example for the designation of such a connector
for analog signals: EUROMAP 16 – A
for binary signals: EUROMAP 16 – B

# 5 Sources of supply

A list of plug suppliers is available for download on the EUROMAP website:
www.euromap.org/technical-issues/technical-recommendations

# EUROMAP

Europäisches Komitee der Hersteller von Kunststoff- und Gummimaschinen

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