



# Connection element

Ex i

Type AV1-IL-\*\*\*\*\*

Exepd GmbH  
 I PARK TAUBERFRANKEN 23  
 D-97922 Lauda-Königshofen  
 Tel.: 09343 627055-0  
 Fax: 09343 627055-99  
 Mail: info@exepd.de

## 1. Product description

The Exepd Connection element Ex i Type AV1-IL-XXXXXX is available as plug, coupler, flange plug and flange socket. The unit consists of a protection enclosure with plug or socket insert. To protect the unplugged units, protection caps are in different versions available. Please consider the conditions for use.

The construction and functionality of the connection element for the use in the marked Ex zones is tested and documented by Exepd GmbH piece by piece. The passed quality test is shown by marking the box with the Ex type label.

## 2. Normal Handling

**The Exepd Connection element Ex i Type AV1-IL-XXXXXX is a simple electrical device for the use in hazardous area zone 0/1/2. They are purely for the use with intrinsically safe circuits. A use with intrinsically and non-intrinsically safe circuits is not allowed and must be prevented. The plugs and couplers are marked on their handle, because of their size, the flange sockets and plugs are marked on their wires. In hazardous area plugs and couplers are only for the use in combination with approved flange plugs and sockets from the type AV1-IL-XXXXXX. A combination with other, not approved by Exepd, devices in hazardous area is prohibited.**

The individual Type label shows all the electrical and for the installation in hazardous area required data. If there is no different statement on the type label, the connection elements can be used in the temperature range of -20°C up to 40°C.

It is prohibited to make any changes on the Connection element Ex i Type AV1-IL-XXXXXX without contacting the manufacturer. To protect the unplugged units, protection caps are in different versions available. Please consider the conditions for use. Also available is a sleeve to prevent the units from accidental disconnection. Plug and socket units must be tightly screwed together for a safe use. Female parts (sockets) should be used for the life parts of an electrical circuit.

## 3. Used Standards

EN 60079-0:2012 / General requirements  
 EN 60079-11:2011 / Intrinsically Safety „i“

## 4. Technical Data

<b>Type (see product marking):</b>	AVX-IL-XXXXXX
<b>Enclosure Material:</b>	Die-cast zinc (nickel plated)
<b>Protection acc. to EN 60529/IEC 60529:</b>	IP67/IP68
<b>Operating temperature:</b>	max. -40°C ... +40°C
<b>Temperature class:</b>	T6
<b>Type of protection:</b>	II 1 G Ex ia IIC T6 Ga
<b>Connection thread:</b>	M12x1mm
<b>Build-in thread (flange unit):</b>	M16x1,5
<b>Mating cycles</b>	>100
<b>Tightening torque flange element:</b>	
Inside a metal enclosure (with our without locknut):	6,25 Nm
Inside a plastic enclosure:	3,75 Nm
<b>5. Electrical Data</b>	
<b>Maximum rated voltage:</b>	60V (peak)*
<b>Maximum rated current:</b>	2A (peak)*
<b>Number of wires / poles:</b>	2-4
<b>Single wire in flange element:</b>	wire 0,25mm <sup>2</sup> / l=500 mm
<b>Connection on plug / coupler:</b>	0,75mm <sup>2</sup> screw type
	Tightening torque 0,8-1,5 Nm
	Additional screen connection possible
	4-6mm or 6-8mm
<b>External cable size</b>	
<b>Resistance</b>	≤3mΩ
<b>Degree of pollution</b>	3
<b>Insulating material group</b>	II

\* Maximum allowable energy acc. to EN 60079-11

IIC	20μJ
IIB	80μJ
IIA	160μJ

## 6. Components / accessories



## 7. Operation condition and safety notes

Devices in hazardous area must be installed, supervised, maintained and kept in good conditions by the owner of the plant. Part of this is an inspection after the transport to identify possible damages caused during the transport.

Only qualified workers are allowed to install and dismount as well as doing maintenance work on the control and terminal boxes. All universally valid rules and laws and other binding directives for the safety of people and environment must be kept.

The Ex i connection elements for the installation with external intrinsically safe circuits must be separated and distinctive installed from non-intrinsically safe units.

If intrinsically safe or associated devices are equipped with more than one connection element, and a mix-up could influence the safety, these units must be protected by using devices with different codes or by marking the units with labels or coloured stickers.

We recommend the use of protection caps for unplugged elements.

**Only for the use with intrinsically safe circuits**

**The connection elements are not build for the connection of earthed circuits, if the safety of this circuit depends on them.**

**Intrinsically safe circuits have to be marked clearly in a different manner from non-intrinsically safe circuits!**

**By using more than one connection elements, these units should be clearly marked or encoded to prevent from a mix-up.**

**By the use of protective caps in combination with units for the use in hazardous area zone 0 (II 1G IIC) the caps must be protected from electrostatic charge. For example with the instruction "only wet clean". Unplugged elements with protection caps must be removed from hazardous area zone 0 (II 1G IIC)**

**DO NOT USE DEFECT EQUIPMENT!**

**An unplugged element must be covered, if a connection of the open plug and socket pins could influence the safety of the intrinsically safe circuit!**

## 8. Installation and use

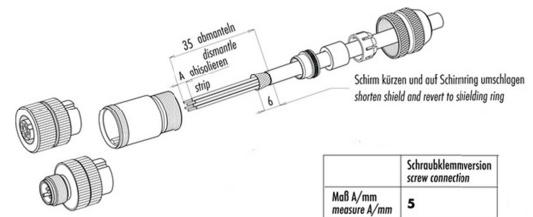
### Erection

The connection elements must be protected against aggressive and unusual environmental conditions which could cause damages on the equipment. This could be e.g. acids or high and low temperatures. For installation, please refer to EN 60079-14 and other valid standards and directives on the place of erection especially in the establishing of the intrinsically safe circuits. Information on the type label must be kept!

For flange elements a threaded hole M16x1.5 is necessary. The protective caps will be installed via their lugs to the elements or the cable.

### Installation

The wire connection must be made in such a manner, that the insulation material and the cores itself will not be damaged. Regarding the maximum possible cross connection and electrical data, please refer to the information written on the type label. The cable must be prepared as per picture below. The connection elements Type AV1-IL-XXXXXX are only for the use of intrinsically safe circuits.



If non-intrinsically safe and intrinsically safe circuits or energy-limited circuits are installed inside of one connection box, the cable to non-intrinsically safe installation devices should be routed in such a manner, that an increasing of the maximum voltage of the intrinsically safe circuits or external resource by inductive or capacitive interference is avoided. The distance of 50 mm between Ex i and non-intrinsically safe or energy-limited circuits must be observed. The connection must not affect the explosion protection of the devices.

## 9. Starting

Before the Connection element is put into operation, the qualification for the use in the predominant hazardous area must be proofed according to the type label and the zone declaration. It is not allowed to exceed the written data on the type label. The functionality of the control and terminal box itself, as well as its combination with the plant or machine must be tested before the first use. Only use the Connection element in clean and intact condition. An unplugged element must be covered, if a connection of the open plug and socket pins could influence the safety of the intrinsically safe circuit!

## 10. Operation, Maintenance and Elimination of Disturbances

Devices in hazardous area must be installed, supervised, maintained and kept in good conditions by the owner of the plant. For information, refer to EN 60079-17. Only skilled workers are allowed to do maintenance and the elimination of disturbance work. Before doing this work, the safety requirements must be kept! For elimination of disturbances, only original spare parts after consulting with Exepd are allowed to use. Before using them again, the safety requirements must be kept!

Service address and spare parts see [www.exepd.de](http://www.exepd.de)

Dokument AV1-IL-C0001-1

Hersteller/Manufacturer:

Exepd GmbH, i\_PARK TAUBERFRANKEN 23, D-97922 Lauda-Königshofen

Gegenstand der Erklärung/Object of the declaration:\*

Verbindungselement/Steckverbinder Ex i Typ AV1-IL-\*\*\*\*\*  
Connection Element Ex i type AV1-IL-\*\*\*\*\*

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsvorschriften der Union/The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/34/EU (valid from/gültig ab 20. April 2016 -ABI. L 96 / 29.03.2014-)

Die Anwendung der folgenden einschlägigen harmonisierten Normen oder technischen Spezifikationen wurde als hilfreich erachtet, ganz oder teilweise die Konformität mit den wesentlichen Anforderungen zu erfüllen/The use of the following relevant harmonised standards or references to other technical specifications were helpfully, to fulfil totally or partly the conformity with the requirements:

EN 60079-0:2012 (IEC 60079-0:2011, mod. + Cor.:2012);  
EN 60079-11:2012 (IEC 60079-11 :2011 + Cor.:2012);

Kennzeichnung und Hauptzündschutzart/Marking and main type of protection:\*

⊕ II 1 G  
Ex ia IIC T6 Ga

CE

Qualitätssicherung Produktion gemäß/Production quality system according:  
2014/34/EU

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller/This declaration of conformity is issued under the sole responsibility of the manufacturer.

Lauda-Königshofen, den 20.04.2016

Carsten Heitzmann, Ex-Beauftragter, Exepd GmbH

\*Die vollständige Produktbeschreibung und verwendete Zündschutzprinzipien sind in der zugehörigen Artikelbeschreibung zur Artikelnummer beschrieben (-> Auftragsdokumentation)  
*The product and used protection principles are described in the relevant article description according the article number (-> order documents)*