



Note on instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility. It is essential that they have an exact knowledge of the applicable rules and regulations.

The instructions provide a summary of the most important safety measures and must be read by everyone working with the product so that they will be familiar with the correct handling of the product.

The instructions have to be kept for future reference and must be available throughout the expected life of the product.

Description

The ComEx^{flex} potentiometer, type 07-3373-4****/****, is used in almost all hazardous (potentially explosive) areas where machine functions are controlled by means of adjustable voltage distributors.

The ComEx^{flex} potentiometer can be combined with a potentiometer actuator (scale graduation 0 to 10). A junction box is available as a safe and convenient means of installing the potentiometer in a control panel.

The conductors are connected by means of terminals on the back of the ComEx^{flex} potentiometer which have an increased safety level. The easy installation of the potentiometer actuating element without the need for tools ensures conformance to the high IP degree of protection.

Explosion protection

ATEX

Ex type of protection

Ⓔ II 2 G Ex db eb IIC Gb

Ⓔ I M2 Ex db eb I Mb

Certification

CML 17 ATEX 1119 U

IECEX

Ex type of protection

Ex db eb IIC Gb

Ex db eb I Mb

Certification

IECEX CML 17.0057U

Other approvals and certificates, see www.bartec-group.com

Ambient temperature range

-55 °C to +60 °C

(-67 °F to +140 °F)

Operating temperature

55 °C to +85 °C

(-67 °F to +185 °F)

Approved for zones

1 and 2

Technical data

Protection class

Determined by potentiometer actuating element and control station enclosure or junction box.

Terminals: IP 20

Weight

Approx. 110 g (0.24 lb)

Rated insulation voltage

Max. 500 V

Power consumption

Max. 1 W for $T_a < +40\text{ °C}$ (+104 °F)

Rated voltage

AC/DC 320 V

Resistance

1 kΩ to 22 kΩ

with a tolerance of + 20 %

Curve shape

Linear

Rotation

Mechanical: 285° to 5°

Electrical: effective approx. 250°

Torque

Beginning: 0.5 to 1.5 Ncm

Stop: > 100 Ncm

Connection

Double terminals for 2 x 2.5 mm²

Enclosure material / manufacturing process

Thermoplastic / injection moulding

Resistance material

Carbon layer on ceramics

Service life

Mechanical: > 10⁵ switching cycles

Mounting

Locked, by bayonet lock

Shock resistance

DIN EN 60068-2-27: 30 g 18 ms

Dimensions

See page 3

Safety Instructions

The ComEx^{flex} potentiometer and the corresponding actuator may be used only within the specified ambient and operating temperature range. Incorrect installation can cause malfunctioning and the loss of explosion protection.

Utilization in areas other than those specified or the alteration of the product by anyone other than the manufacturer will exempt BARTEC from liability for defects or any further liability.

Only service technicians who are authorized to work in potentially explosive atmospheres may do any of the assembly, disassembly, installation, commissioning, maintenance, and fault clearance work.

The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be observed.

When using electrical systems the relevant regulations on installation and operation must be complied with.

When setting up or operating explosion-resistant electrical systems, the IEC/EN 60079-14 (NEC for USA/CEC for Canada) and all relevant installation and operating regulations must be observed.

The ComEx^{flex} potentiometer may be used only if it is in a clean and undamaged condition. It is not permissible to modify the ComEx^{flex} potentiometer in any way.

Marking

Particularly important points in these instructions are marked with a symbol:

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

Note

Important instructions and information on effective, economical and environmentally compatible handling.

Standards conformed to

EN 60079-0:2012 + A11:2013

EN 60079-1:2014

EN 60079-7:2015

EN 60068-2-27:2010

IEC 60079-0:2011

IEC 60079-1:2014-06

IEC 60079-7:2015

Transport, Storage

NOTICE

ComEx^{flex} potentiometer damage through incorrect transport or incorrect storage.

- Transport and storage is permissible in original packaging only.
- Store the ComEx^{flex} potentiometer in a dry place.

Assembly, Installation

WARNING

Risk of serious injury due to incorrect proceedings.

- The IEC/EN 60079-14 and further national standards and locally applicable installation regulations have to be observed.
- Ensure that the voltage supply has been isolated or take suitable protective measures.
- Pay attention to the type of mounting required (for fitting into enclosure/attachment with junction box).

Assembly

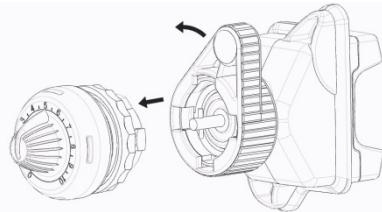
WARNING

Risk of serious accidents due to damaged parts.

- Before assembly, ensure the perfect condition of the components.

Mounting the ComEx^{flex} potentiometer:

- Make sure the ComEx^{flex} potentiometer to be fitted is intact (no cracks).
- Position the ComEx^{flex} potentiometer's bayonet connector at the mounted actuating element.
- Turn the closing latch to connect the ComEx^{flex} potentiometer securely to the potentiometer actuating element.



Note

The assembly of the potentiometer actuating element as well as the assembly of the potentiometer and the potentiometer actuating element is described in the operating instructions for actuating elements, type 05-0003-00**/*

Installation

For fitting into enclosure

In hazardous areas in groups I and II the ComEx^{flex} potentiometer must be used:

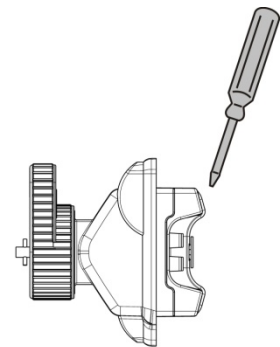
- In appropriate enclosures with “Ex e” increased safety type of protection. The clearances and creepage distances under IEC/EN 60079-7 Section 4.3, Section 4.4 and Table 1 must be observed.
- In an enclosure that corresponds to another approved type of protection specified in IEC/EN 60079-0 Section 1.

With junction box

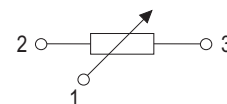
The ComEx^{flex} potentiometer must be installed as a stationary unit and with protection against the risk of mechanical damage.

Take care when connecting conductors:

- Strip 40 mm (1.6 in) sheath off the conductor.
- Remove approx. 6 mm (0.2 in) conductor insulation from the cores.
- Prepare the ends of fine-stranded and multi-stranded conductors: Crimp wire end sleeves with suitable crimping tools. Connection cross-sections: 0.75-2.5 mm² (14-18 AWG).
- Release terminals.
- Insert conductors diagonally.
- Tight the terminals with a maximum torque of 0.4-0.7 Nm (0.3-0.5 lb.ft), while holding the screwdriver slightly at an angle.



Terminal assignment:



Resistance:

Type 07-3373-4D40	1 kΩ
Type 07-3373-4D50	2,2 kΩ
Type 07-3373-4D60	4,7 kΩ
Type 07-3373-4D70	10 kΩ
Type 07-3373-4D80	22 kΩ

Commissioning

Before commissioning, check that:

- The ComEx^{flex} potentiometer has been installed in compliance with regulations.
- The ComEx^{flex} potentiometer is not damaged.
- The connection has been established properly (make sure the cores are secure).

Operation

WARNING

Risk of serious accidents due to operation without an actuator.

- The ComEx^{flex} potentiometer may never be operated without an actuator at rated voltages > AC 50 V to a max. AC/DC 320 V.
- If the ComEx^{flex} potentiometer does not have an actuator, it must be de-energized.

The ComEx^{flex} potentiometer may be operated without an actuator only at rated voltages of ≤ AC 50 V resp. < DC 120 V.

Maintenance and Fault Clearance

WARNING

Risk of serious injury due to incorrect proceedings.

- IEC/EN 60079-17 must be observed. It is recommended to formulate a maintenance plan according to this standard.
- Ensure that the voltage supply has been isolated or take suitable protective measures.

Maintenance

WARNING

Risk of serious accidents due to damaged parts.

- Check potentiometers, potentiometer actuating elements, actuators, sealings, and cables regularly for cracks and damage. Make sure that they are properly established.

NOTICE

Potentiometer/potentiometer actuating element damage due to incorrect cleaning.

- It is not allowed to clean ComEx^{flex} potentiometers/actuators with compressed air.

The operator of the ComEx^{flex} potentiometer must keep it in good condition, operate it properly, monitor it and clean it regularly.

The owner/managing operator must schedule maintenance intervals which will suit the respective conditions of use.

Fault Clearance

WARNING

Risk of serious injury due to use of non-original spare parts.

- Use original parts only as replacements.

The ComEx^{flex} potentiometer is defective if turning it does not lead to a change in resistance.

Defective ComEx^{flex} potentiometers cannot be repaired; they must be replaced considering this operational instruction.

A defective actuator can be taken off the potentiometer and replaced by a functioning actuator of the same type.

Note

For original parts, contact the firm of Bartec GmbH at the service address.

Accessories, Spare Parts

Note

The ComEx^{flex} potentiometer can be connected to a junction box. Information on the junction box and junction box assembly is described in the Operating Instructions for the junction box, order number 05-0042-0050.

For further accessories and spare parts, see BARTEC catalogue.

Disposal

Note

Environmental damage can be caused by incorrect waste disposal. When in doubt, local authorities or specialist disposal companies can provide information on environmentally friendly disposal.

The components in the ComEx^{flex} potentiometer and the potentiometer actuating element contain metal and plastic parts. Therefore the statutory requirements for disposing of electronic scrap must be observed.

Service Address

BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

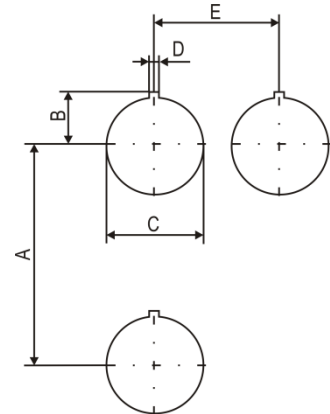
Tel.: +49 7931 597-0
Fax: +49 7931 597-119

Installation dimensions

NOTICE

Damage to elements due to incorrect installation dimensions.

- The minimum spacing between the mounting holes must be observed.

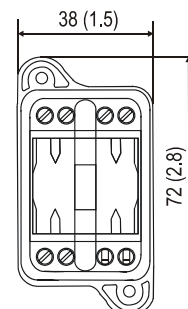
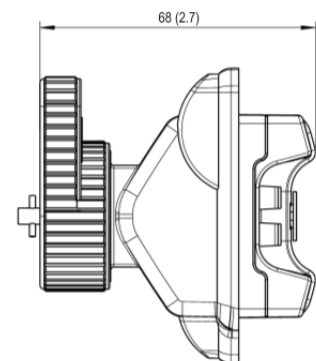


Dimensions:

	mm	in
A*	75	2.95
B	16.5	0.65
C	∅ 30.3 ^{+0.3}	∅ 1.2 ^{+0.01}
D	3	0.12
E*	40	1.6

*Recommended spacing for mushroom push-button, slam button, and: position selector switches with protective shroud: 100 mm (3.9 in).

Dimensions in mm (in)



EU Konformitätsbescheinigung
EU Attestation of Conformity
Attestation UE de conformité**BARTEC**BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

N° 01-3370-7C0001_D

Wir	We	Nous
BARTEC GmbH,		
erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
Potentiometer mit Klemmen	Potentiometer with terminals	Élément de potentiomètre avec bornes
Typ 07-337*-D**/*		
auf das sich diese Erklärung bezieht den Anforderungen der folgenden Richtlinien (RL) entspricht	to which this declaration relates is in accordance with the provision of the following directives (D)	se référant à cette attestation correspond aux dispositions des directives (D) suivantes
ATEX-Richtlinie 2014/34/EU RoHS-Richtlinie 2011/65/EU	ATEX-Directive 2014/34/EU RoHS-Directive 2011/65/EU	Directive ATEX 2014/34/UE Directive RoHS 2011/65/UE
und mit folgenden Normen oder normativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou documents normatifs ci-dessous
EN 60079-0:2012 + A11:2013 EN 60079-1:2014 EN 60079-7:2015	EN 60529:1991 + A1:2000 + A2:2013 EN 60068-2-27:2009	
Verfahren der EU-Baumusterprüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
CML 17 ATEX 1119U CML B.V., Hoogoorddreef 15 1101BA, Amsterdam, NL		
(¹) Die Ex-Komponente ist Teil eines elektrischen Betriebsmittels oder eines Moduls, gekennzeichnet mit dem Symbol „U“, das nicht für sich allein verwendet werden darf und über dessen Einbau in elektrische Betriebsmittel oder Systeme zur Verwendung in explosionsgefährdeten Bereichen gesondert entschieden werden muss.	(¹) The Ex-component is a part of an electrical apparatus or a module, marked with the symbol "U", which is not intended to be used alone and requires additional consideration when incorporated into electrical apparatus or systems for use in explosive atmospheres.	(¹) Le composant Ex est partie de matériel électrique ou de module, marquée du symbol « U », ne devant pas être utilisée seule et nécessitant une certification complémentaire lorsqu'elle est incorporée à un matériel électrique ou à un système pour atmosphères explosives.
Merkmale dieser Komponente sowie die Bedingungen für ihren Einbau in Geräte und Schutzsysteme siehe Betriebsanleitung der Komponente.	Characteristics and how the component must be incorporated into equipment or protective systems see operation manual of the component.	Les caractéristiques du composant ainsi que les conditions d'incorporation dans des appareils ou des systèmes de protection regarde voir l'instruction d'emploi du composant.

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BARTEC

BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

Nº 01-3370-7C0001_D

 **0044**
Bad Mergentheim, den 23.01.2019 
Kevin Rogers i.V. Cristian Olareanu
Team Lead Mechanical Design Team Lead,
ESS Certification Center