

MOUNTING AND OPERATING INSTRUCTIONS



EB 8379 EN

Translation of original instructions



Type 3770 Ex d/Ex i Field Barrier

Edition July 2020



Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in these instructions are for illustration purposes only. The actual product may vary.

- For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- If you have any questions about these instructions, contact SAMSON's After-sales Service (aftersaleservice@samsongroup.com).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at www.samsongroup.com > **Service & Support > Downloads > Documentation.**

Definition of signal words

DANGER

Hazardous situations which, if not avoided, will result in death or serious injury

WARNING

Hazardous situations which, if not avoided, could result in death or serious injury

NOTICE

Property damage message or malfunction

Note

Additional information

Tip

Recommended action

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1 Safety instructions and measures

Intended use

The field barrier makes it possible to directly connect intrinsically safe field devices to installations with type of protection 'Flameproof enclosure' using suitable cable glands or conduit systems. Additionally, it provides the necessary intrinsically safe output circuits for the bolted-on field device. In this way, the advantages of intrinsic safety, such as commissioning and operation when connected to a voltage source, remain in effect within the hazardous area. The field barrier is designed to operate under exactly defined conditions (e.g. operating pressure, temperature). Therefore, operators must ensure that it is only used in applications where the operating conditions correspond to the technical data. In case operators intend to use the field barrier in other applications or conditions than specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

➔ Refer to the technical data for limits and fields of application as well as possible uses.

Reasonably foreseeable misuse

The Type 3770 Field Barrier is **not** suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data

Furthermore, the following activities do not comply with the intended use:

- Use of non-original spare parts
- Performing maintenance activities not described in these instructions

Qualifications of operating personnel

The field barrier must be mounted, started up or operated only by trained and experienced personnel familiar with the product. According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

Explosion-protected versions of this device must be operated only by personnel who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

Safety instructions and measures

Personal protective equipment

No personal protective equipment is required for the direct handling of the field barrier. Work on the control valve may be necessary when mounting or removing the device.

- Observe the requirements for personal protective equipment specified in the valve documentation.
- Check with the plant operator for details on further protective equipment.

Revisions and other modifications

Revisions, conversions or other modifications of the product are not authorized by SAMSON. They are performed at the user's own risk and may lead to safety hazards, for example. Furthermore, the product may no longer meet the requirements for its intended use.

Warning against residual hazards

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the pneumatic instrumentation by the signal pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warning and caution notes in these mounting and operating instructions, especially for installation, start-up and service work.

Responsibilities of the operator

Operators are responsible for proper use and compliance with the safety regulations. Operators are obliged to provide these mounting and operating instructions to the operating personnel and to instruct them in proper operation. Furthermore, operators must ensure that operating personnel or third parties are not exposed to any danger.

Responsibilities of operating personnel

Operating personnel must read and understand these mounting and operating instructions as well as the specified hazard statements, warning and caution notes. Furthermore, the operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

Referenced standards and regulations

The Type 3770-1 with a CE marking fulfills the requirements of the Directives 2014/30/EU, 2014/34/EU and 2011/65/EU. The declaration of conformity is included at the end of these instructions.

The Type 3770-1 with an EAC marking fulfills the requirements of Regulation TR CU 012/2011. The TR CU certificate is included at the end of these instructions.

Referenced documentation

The following documents apply in addition to these mounting and operating instructions:

- Mounting and operating instructions of the components on which the field barrier is mounted (positioner, i/p converter, solenoid valve, limit switch)

1.1 Notes on possible severe personal injury



Risk of fatal injury due to the ignition of an explosive atmosphere.

Incorrect installation, operation or maintenance of the field barrier in potentially explosive atmospheres may lead to ignition of the atmosphere and ultimately to death, even with a harmless supply voltage.

- For mounting and electrical installation in hazardous areas, observe the explosion protection approvals as well as the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use. EN 60079-14 applies in Europe.
- Do not connect the electrical supply before mounting is completed.
- Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

Risk fatal injury due to electric shock

- For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use.

Valid regulations in Germany:

- VDE regulations
- Accident prevention regulations of the employers' liability insurance.

1.2 Notes on possible personal injury

WARNING

Crush hazard arising from moving parts on the valve and actuator.

Control valves contain moving parts (actuator and plug stem), which can injure hands or fingers if inserted into the valve.

- Do not touch any moving valve parts while the control valve is in operation.
- Before performing any mounting or installation work on the field barrier, put the control valve out of operation by disconnecting and locking the supply and control signal.

Incorrect electrical connection will render the explosion protection unsafe.

- Adhere to the terminal assignment.
- Do not undo the enameled screws.
- Do not exceed the maximum permissible values specified in the EC type examination certificates when interconnecting intrinsically safe electrical equipment (U_i or U_0 , I_i or I_0 , P_i or P_0 , C_i or C_0 and L_i or L_0).

Explosion protection rendered ineffective after activation of the field barrier.

- Do not put the field barrier back into service when it has been activated (intrinsically safe current circuit has been switched off).

2 Markings on the device

2.1 Nameplate

SAMSON 3770 - 1 1
Field barrier Exd / Exi

2

! * See technical data and explosion-protection certificate for permissible ambient temperature and maximum values for connection to certified intrinsically safe circuits.

Model 3
Var-ID 4 Serial no. 5
Input not intrinsically safe $U_m =$ 6

Signal circuit I_N 7	Signal circuit U_N 7
Terminals 8	Terminals 8

Output intrinsically safe: 9

10 | 10

SAMSON AG D-60314 Frankfurt Made in Germany

1 Conformity	7 Input signal: I_N Nominal current U_N Nominal voltage
2 Type of protection	8 Connection
3 Type number	9 Output circuit
4 Configuration ID	10 Max. values: U_0 Max. operating current I_0 Max. output current C_0 Max. perm. capacitance L_0 Max. perm. inductance
5 Serial number	
6 Input signal without intrinsic safety	

Markings on the device

2.2 Article code

Field barrier acc. to ATEX	Type	3	7	7	0	0	0	0
3 channels: 4 to 20 mA, floating and 2 circuits according to EN 60947-5-6		3						
3 channels: 4 to 20 mA, non-floating and 2 circuits according to EN 60947-5-6		4						
Electrical connections								
½ NPT female thread (aluminum)			1	0				
M20x1.5 female thread (stainless steel)			3	1				
Enclosure material								
Die-cast aluminum				0				
Stainless steel (AISI 316)				1				
Special version								
Without						0	0	0
GOST Ex certificate						0	0	1

3 Design and principle of operation

The field barrier makes it possible to directly connect intrinsically safe field devices to installations with type of protection 'Flame-proof enclosure' using suitable cable glands or conduit systems. Additionally, it provides the necessary intrinsically safe output circuits for the bolted-on field device.

The field barrier is suitable for operating positioners, i/p converters, solenoid valves or limit switches. Fig. 3-1 shows an example of connection with SAMSON positioners.

Devices with HART® communication need an adaptation, which is available e.g. with Type 3730-3 and Type 3730-6 Positioners.

Upstream connection and direct attachment to intrinsically safe field devices enable the intrinsically safe circuits of these devices to be connected with the circuits of upstream input and output units that are not intrinsically safe.

In this way, the advantages of intrinsic safety, such as commissioning and operation when connected to a voltage source, remain in effect within the hazardous area.

The connecting cable of the non-intrinsically safe circuit is introduced into the enclosure of the field barrier either over a conduit system or design-certified metal cable entry.

The field barrier transmits the analog set point to i/p converters and positioners. The use of HART® protocol is also possible.

The field barriers must be connected to the equipotential bonding system. For this purpose, a version with minus-sided equipotential bonding (non-floating) and a floating version are available. The version is selected to match the grounding of the analog output of the controller or control system.

An M20x1.5 adapter allows for a direct connection through the cable entry of the field devices.

Channel 1 of the field barrier is especially designed for transmitting analog signals in the range of 4 to 20 mA, but it also transmits the HART® protocol.

Channels 2 and 3 are intended for controlling limit contacts according to IEC 60947-5-6 or Ex i solenoid valves (e.g. Type 3767 Positioner with a solenoid valve coil for 6 V).

Design and principle of operation

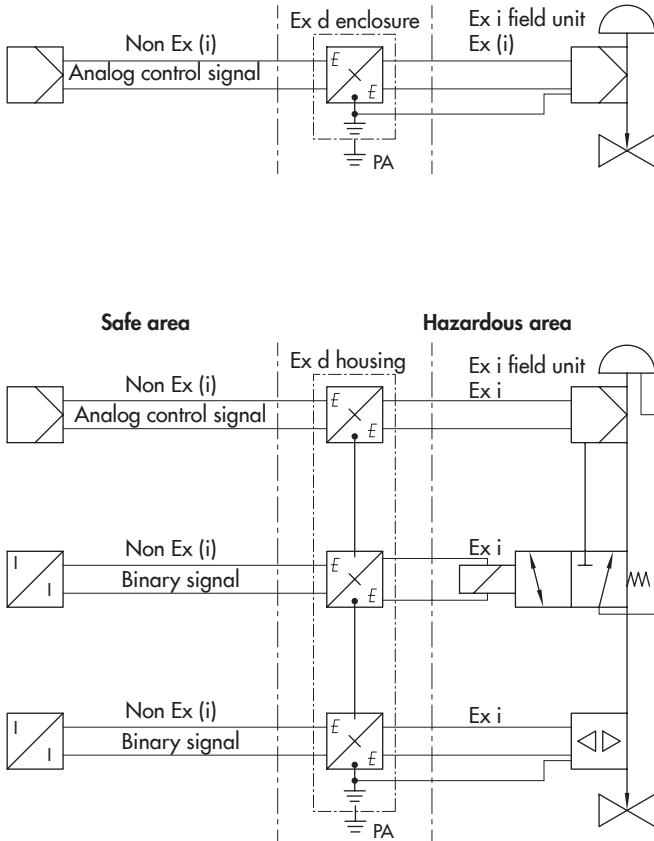




Fig. 3-1: Examples of connections with SAMSON positioners

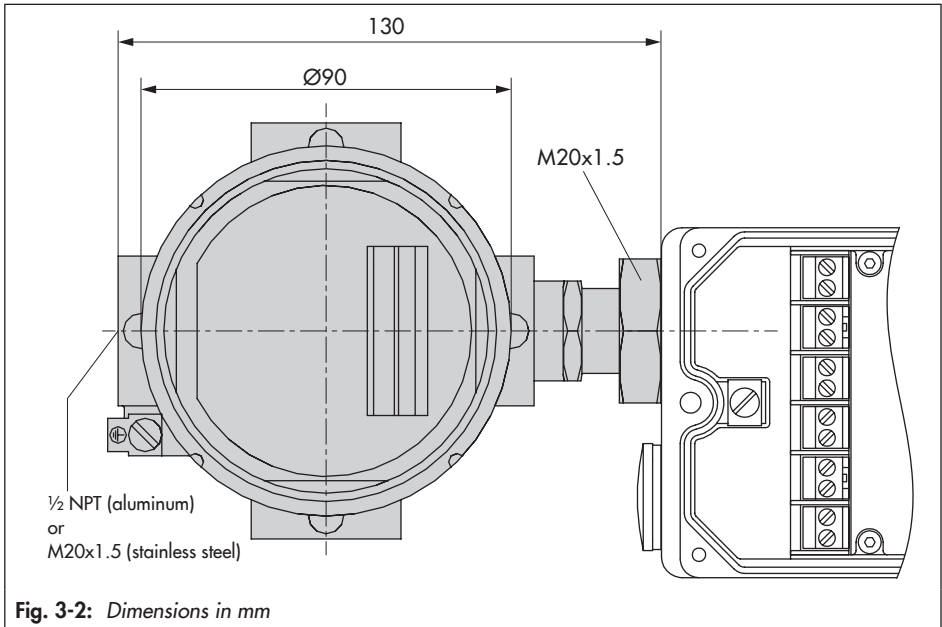
3.1 Technical data

Connection	Channel 1: Ch 1 +/-	Channel 2 and 3: Ch 2 +/- and Ch 3 +/-
Operating values	0/4 to 20 mA or U_N to 15 V DC	0/4 to 20 mA or U_N to 10 V DC
	or limit contacts acc. to EN 60947-5-6 not suitable for transmitter supply	
Input	$U_m = 250$ V	
Fuse rating	$I_N = 80$ mA (slow-acting)	
Output circuit	Ex ia IIC	
Maximum values according to EC type examination certificate		
Max. output voltage U_0	≤ 17.2 V	≤ 12.6 V
Max. output current I_0	≤ 110 mA	≤ 49 mA
Max. power P_0	≤ 473 mW	≤ 154 mW
Max. perm. capacitance C_0	360 nF/IIC · 2.1 μ F/IIB	1.15 μ F/IIC · 7.4 μ F/IIB
Max. perm. inductance L_0	3 mH/IIC · 12 mH/IIB	15 mH/IIC · 56 mH/IIB
Series resistance R_{Lmax}	190 Ω	285 Ω
Load impedance	3.8 V/20 mA	5.7 V/20 mA
Perm. ambient temperature	-45 °C $\leq t_a \leq +60$ °C T6	
Degree of protection	IP 65 according to DIN EN 60529	
Dimensions	Refer to Fig. 3-2	
Enclosure material	Die-cast aluminum, painted or stainless steel (AISI 316)	

Table 3-1: Explosion protection certificates

Type	Certification			Type of protection
3770		On request		1Ex d[ia]
3770-1	 EC type examination certificate	Number	PTB 98 ATEX 1025 X	II 2G Ex d[ia] IIC T6 Gb
		Date	2004-01-14	

Design and principle of operation



4 Shipment and on-site transport

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

4.1 Accepting the delivered goods

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Check that the specifications on the nameplate of the field barrier match the specifications in the delivery note. See the 'Markings on the device' section for nameplate details.
2. Check the shipment for transportation damage. Report any damage to SAMSON and the forwarding agent (refer to delivery note).

4.2 Removing the packaging from the field barrier

Observe the following sequence:

- Do not remove the packaging until immediately before installation.
- Dispose and recycle the packaging in accordance with the local regulations.

4.3 Transporting the field barrier

Transport instructions

- Protect the field barrier against external influences (e.g. impact).
- Protect the field barrier against moisture and dirt.
- Observe transport temperature depending on the permissible ambient temperature (see the 'Design and principle of operation' section).

4.4 Storing the field barrier

! NOTICE

Risk of damage to the field barrier due to improper storage.

- *Observe the storage instructions.*
 - *Avoid long storage times.*
 - *Contact SAMSON in case of different storage conditions.*
-

! Note

We recommend regularly checking the prevailing storage conditions during long storage periods.

Shipment and on-site transport

Storage instructions

- Protect the field barrier against external influences (e.g. impact, shocks, vibration).
- Do not damage the corrosion protection (coating).
- Protect the field barrier against moisture and dirt. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Observe storage temperature depending on the permissible ambient temperature (see the 'Design and principle of operation' section).
- Do not place any objects on the field barrier.

5 Installation

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ WARNING

Crush hazard arising from moving parts on the valve and actuator.

- Do not touch any moving valve parts while the control valve is in operation.
- Before performing any mounting or installation work on the field barrier, put the control valve out of operation by disconnecting and locking the supply and control signal.

5.1 Installation conditions

Mounting orientation

Any mounting position may be used for the field barrier.

5.2 Preparation for installation

Before installation, make sure the following conditions are met:

- The field barrier is not damaged.
- The limits defined in the technical data match the ambient conditions (temperatures etc.).

Proceed as follows:

- Lay out the necessary material and tools to have them ready during installation work.
- Put the control valve out of operation by disconnecting and locking the supply and control signal.

5.3 Mounting the field barrier

1. Remove the cable entry on the field barrier.
2. Insert the free cable ends into the field barrier and screw in the field barrier (M20x1.5 thread).
3. Turn the enclosure to face the direction you require and secure this position with coupling nut.
4. Connect the free cable ends to the terminal as shown in section 5.4.

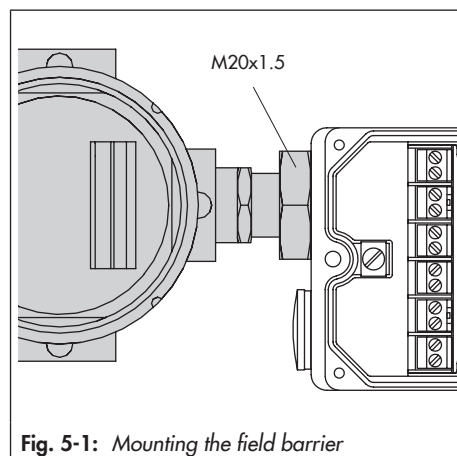


Fig. 5-1: Mounting the field barrier

5.4 Connect the electrical power supply

⚠ DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- For mounting and electrical installation in hazardous areas, observe the explosion protection approvals as well as the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use. EN 60079-14 applies in Europe.
- Do not connect the electrical supply before mounting is completed.
- Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

⚠ DANGER

Risk fatal injury due to electric shock

- For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use.
Valid regulations in Germany:
 - VDE regulations
 - Accident prevention regulations of the employers' liability insurance

⚠ WARNING

Incorrect electrical connection will render the explosion protection unsafe.

- Adhere to the terminal assignment.
- Do not undo the enameled screws.
- Do not exceed the maximum permissible values specified in the EC type examination certificates when interconnecting intrinsically safe electrical equipment (U_i or U_o , I_i or I_o , P_i or P_o , C_i or C_o and L_i or L_o).

Additional points that apply:

- Only use cable entries and blanking plugs with the same degree of protection (IP grade) as that of the field barrier.

Switching amplifier

- When interconnecting the field barrier with multi-channel switching amplifiers, it is important to make sure that the different channels in the switching amplifier do not operate on a common potential. Otherwise unwanted interaction of the limit contacts could occur.
- **In case of doubt, only use single-channel switching amplifiers.**

Equipotential bonding system

The individual current circuits of the Type 3770 Field Barrier are electrically connected with internal and external equipotential bonding terminals.

- Connect the external equipotential bonding terminal to the local equipotential bonding system using the shortest possible route.

Channels 2 and 3 are set up to be barriers for positive potential. Channel 1 can be set up to be floating (Fig. 5-1, left) or for positive potential (Fig. 5-1, right).

Connection with type of protection Ex d according to EN 60079-1

- ➔ Connect the Type 3770-1 Field Barrier using suitable cable entries or conduit systems that comply with EN 60079-1 *Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures "d", Clauses 13.1 and 13.2* and for which a separate test certificate is available.
- ➔ Do not use cable entries and blanking plugs of simple construction.

- ➔ For installation according to the type of protection Ex db, seal cable entries left unused with plugs certified for this purpose.
- ➔ Install the connecting cable properly so that it is protected against mechanical damage.
- ➔ If the temperature at the inlet parts exceeds 70 °C, use a temperature-resistant connecting cable.
- ➔ Include the field barrier in the on-site equipotential bonding system.

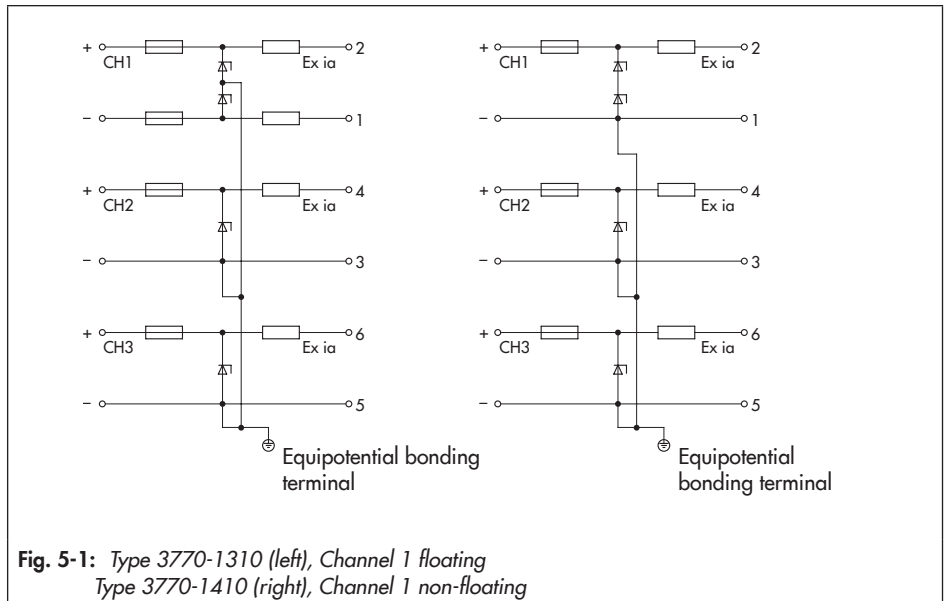


Fig. 5-1: Type 3770-1310 (left), Channel 1 floating
 Type 3770-1410 (right), Channel 1 non-floating

Installation

Connection with type of protection Ex e according to EN 60079-7

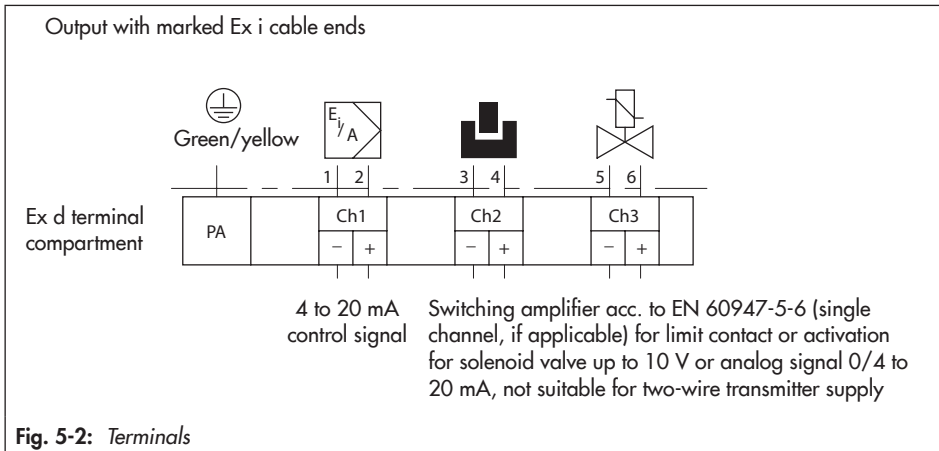
- Use cable entries and blanking plugs that are certified according to type of protection Ex e and possess a separate test certificate.
- Use metal cable glands for ambient temperatures below $-20\text{ }^{\circ}\text{C}$.
- Only connect two cables with different cross-sections to one terminal after they have been secured with a common crimp sleeve.

Wiring

The terminals are designed for 0.5 to 2.5 mm² wires.

- Unscrew the stop screw on the enclosure cover and unscrew the cover.
- Guide the free wiring ends of the field barrier from Ch1 or Ch2 and Ch3 (channel 1, 2 and 3) to their assigned terminals (Fig. 5-2 and Fig. 5-3).

- Use the yellow/green cable to connect the equipotential bonding terminal of the field barrier to the equipotential bonding terminal of the device to be connected.
- Insulate free wire ends of unused channels.
- Insert the connecting cable of the non-intrinsically safe circuit into the enclosure of the field barrier either over a conduit system or a design-certified metal cable entry.
- Connect the individual wires to the terminals marked Ch1 or Ch2 and Ch3 (channel 1, 2 and 3) in the enclosure of the field barrier.
- Place on the enclosure cover and fasten with the stop screw.



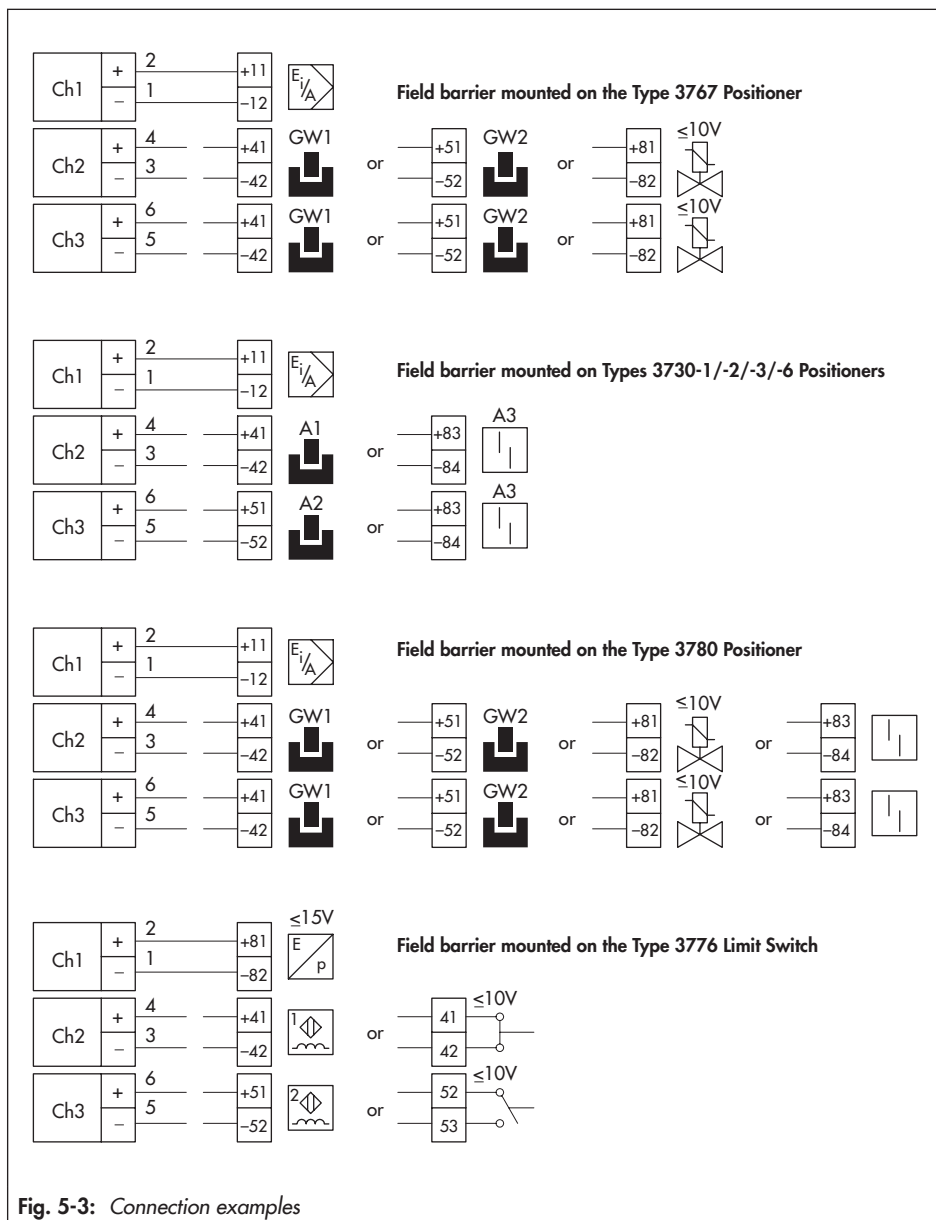


Fig. 5-3: Connection examples

6 Operation

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- *Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.*
-

The protection of intrinsically safe circuits when interconnecting non-intrinsically safe circuits exists as soon as the field barrier is installed and its electrical connection completed. Special settings for start-up are not required.

- Do not put the field barrier back into service when it has been activated (intrinsically safe current circuit has been switched off).

In this case, contact SAMSON's After-sales Service:

- ▶ aftersalesservice@samsongroup.com

7 Malfunction

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- ➔ Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

⚠ DANGER

Risk fatal injury due to electric shock

- ➔ For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use.
Valid regulations in Germany:
 - VDE regulations
 - Accident prevention regulations of the employers' liability insurance

⚠ WARNING

Crush hazard arising from moving parts on the valve and actuator.

- ➔ Do not touch any moving valve parts while the control valve is in operation.
- ➔ Before performing any mounting or installation work on the field barrier, put the control valve out of operation by disconnecting and locking the supply and control signal.

⚠ WARNING

Explosion protection rendered ineffective after activation of the field barrier.

- ➔ Do not put the field barrier back into service when it has been activated (intrinsically safe current circuit has been switched off).

Proceed as follows in the event of a malfunction:

- ➔ Check attachment.
- ➔ Check the configuration of the mounting parts.
- ➔ Check electrical connection.
- ➔ Check the control valve to ensure it functions properly.

7.1 Emergency action

Plant operators are responsible for emergency action to be taken in the plant.



Tip

Emergency action in the event of valve failure is described in the associated valve documentation.

8 Servicing

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- ➔ Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

⚠ DANGER

Risk fatal injury due to electric shock

- ➔ For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use.
Valid regulations in Germany:
 - VDE regulations
 - Accident prevention regulations of the employers' liability insurance

⚠ WARNING

Crush hazard arising from moving parts on the valve and actuator.

- ➔ Do not touch any moving valve parts while the control valve is in operation.
- ➔ Before performing any mounting or installation work on the field barrier, put the control valve out of operation by disconnecting and locking the supply and control signal.

⚠ WARNING

Explosion protection rendered ineffective after activation of the field barrier.

- ➔ Do not put the field barrier back into service when it has been activated (intrinsically safe current circuit has been switched off).

⚠ NOTICE

Process disrupted.

- ➔ Do not mount or service the field barrier while the process is running and only after isolating the plant by closing the shut-off valves.

NOTICE

The field barrier was checked by SAMSON before it left the factory.

- The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by SAMSON's After-sales Service.
- Only use original spare parts by SAMSON, which comply with the original specifications.

8.1 Periodic inspection and testing of the field barrier

We recommend inspection and testing according to Table 8-1 at the minimum.

Table 8-1: Recommended inspection and testing

Inspection and testing	Action to be taken in the event of a negative result
Check the markings, labels and nameplates on the field barrier for their readability and completeness.	Contact SAMSON when nameplates or labels are damaged, missing or incorrect to renew them.
	Clean any inscriptions that are covered with dirt and are illegible.
Check the field barrier to ensure it is mounted properly.	Tighten the any loose coupling nut.
Check the power lines.	Tighten any loose cable glands.
	Make sure that the stranded wires are pushed into the terminals and tighten any loose screws on the the terminals.
	Renew damaged lines.

9 Decommissioning

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- For mounting and electrical installation in hazardous areas, observe the explosion protection approvals as well as the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use. EN 60079-14 applies in Europe.
- Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

⚠ DANGER

Risk fatal injury due to electric shock

- For electrical installation, observe the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use.
Valid regulations in Germany:
 - VDE regulations
 - Accident prevention regulations of the employers' liability insurance

⚠ WARNING

Crush hazard arising from moving parts on the valve and actuator.

- Do not touch any moving valve parts while the control valve is in operation.
- Before performing any mounting or installation work on the field barrier, put the control valve out of operation by disconnecting and locking the supply and control signal.

To decommission the field barrier, proceed as follows:

1. Put the control valve out of operation by disconnecting and locking the supply and control signal.
- Unscrew the stop screw on the enclosure cover and unscrew the cover.
2. Disconnect the lines for the power supply.

10 Removal

The work described in this section is only to be performed by personnel appropriately qualified to carry out such tasks.

⚠ DANGER

Risk of fatal injury due to the ignition of an explosive atmosphere.

- *For mounting and electrical installation in hazardous areas, observe the explosion protection approvals as well as the relevant electrotechnical regulations and the accident prevention regulations that apply in the country of use. EN 60079-14 applies in Europe.*
- *Installation, operation or maintenance of the field barrier must only be performed by personnel with qualifications according to Clause 4.5 of IEC 60079-14 who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.*

-
1. Put the field barrier out of operation (see the 'Decommissioning' section).
 2. Unscrew the cable gland from the field barrier.
 3. Remove the free cable ends from the field barrier.
 4. Loosen the coupling nut and remove the field barrier.

11 Repairs

A defective field barrier must be repaired or replaced.

! NOTICE

Risk of damage to the field barrier due to incorrect service or repair work.

- *Do not perform any repair work on your own.*
 - *Contact SAMSON's After-sales Service for repair work.*
-

11.1 Returning devices to SAMSON

Defective field barriers can be returned to SAMSON for repair.

Proceed as follows to return devices to SAMSON:

1. Put the field barrier service out of operation (see the 'Decommissioning' section).
2. Remove the field barrier (see the 'Removal' section).
3. Proceed as described on the Returning goods page of our website
 - ▶ www.samsongroup.com > Service & Support > After-sales Service > Returning goods

12 Disposal



We are registered with the German national register for waste electric equipment (stiftung ear) as a producer of electrical and electronic equipment, WEEE reg. no.: DE 62194439

- Observe local, national and international refuse regulations.
- Do not dispose of components, lubricants and hazardous substances together with your other household waste.



On request, we can appoint a service provider to dismantle and recycle the product.

13 Certificates

The following certificates are included on the next pages:

- EU declaration of conformity for Type 3770-1
- TR CU certificate for Type 3770-1
- EC type examination certificate for Type 3770-1

The certificates shown were up to date at the time of publishing. The latest certificates can be found on our website:

▶ www.samsongroup.com > Products & Applications > Product selector > Valve accessories > Type 3770-1



EU Konformitätserklärung / EU Declaration of Conformity / Déclaration UE de conformité

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller/
This declaration of conformity is issued under the sole responsibility of the manufacturer/
La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
Für das folgende Produkt / For the following product / Nous certifions que le produit

Feldbarriere Ex d / Ex i / Field barrier Ex d / Ex i / Boîtier de connexion Ex d/ Ex i Typ/Type/Type 3770-1...

entsprechend der EU-Baumusterprüfbescheinigung PTB 98 ATEX 1025 X ausgestellt von der/
according to the EU Type Examination PTB 98 ATEX 1025 X issued by/
établi selon le certificat CE d'essais sur échantillons PTB 98 ATEX 1025 X émis par:

Physikalisch Technische Bundesanstalt
Bundesallee 100
D-38116 Braunschweig
Benannte Stelle/Notified Body/Organisme notifié 0102

wird die Konformität mit den einschlägigen Harmonisierungsrechtsvorschriften der Union bestätigt/
the conformity with the relevant Union harmonisation legislation is declared with/
est conforme à la législation d'harmonisation de l'Union applicable selon les normes:

EMC 2014/30/EU	EN 61000-6-2:2005, EN 61000-6-3:2007 +A1:2011, EN 61326-1:2013
Explosion Protection 94/9/EC (bis/to 2016-04-19)	EN 60079-0:2009, EN 60079-1:2007,
Explosion Protection 2014/34/EU (ab/from 2016-04-20)	EN 60079-11:2012, EN 60079-31:2009
RoHS 2011/65/EU	EN 50581:2012

Hersteller / Manufacturer / Fabricant:

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3
D-60314 Frankfurt am Main
Deutschland/Germany/Allemagne

Frankfurt / Francfort, 2017-07-29

Im Namen des Herstellers/ On behalf of the Manufacturer/ Au nom du fabricant.

Hanno Zager
Leiter Qualitätssicherung/Head of Quality Management/
Responsable de l'assurance de la qualité

Dirk Hoffmann
Zentralabteilungsleiter/Head of Department/Chef de département
Entwicklungsorganisation/Development Organization



TRANSLATION

(1) **EC TYPE EXAMINATION CERTIFICATION**

- (2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – Directive 94/9/EC
- (3) EC Type Examination Certificate Number

PTB 98 ATEX 1025 X

- (4) Equipment: Model 3770-1 Ex d / Ex i Field Barrier
- (5) Manufacturer: Samson AG
- (6) Address: Weismüllerstr. 3, D-60314 Frankfurt
- (7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents referred to therein.
- (8) The Physikalisch-Technische Bundesanstalt, notified body number 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirement relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report: PTB Ex 98-17005.

- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with
- EN 50014: 1997 EN 50018: 1995 EN 50020: 1994**
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

EC Type Examination Certificates without signature and seal are invalid.
This EC Type Examination Certificate may only be reproduced in its entirety and without any changes, schedule included.
Extracts or changes shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig

Ptb06 3770doc

- 11) This EC TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of the equipment.
- (12) The marking of the equipment shall include the following:



II 2 G EEx d [ia] IIC T6

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 18.06.1998

(Signature)

(Seal)

Dr. Ing. U. Klausmeyer
Oberregierungsrat

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Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig

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(13) **Schedule**

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 98 ATEX 1025 X**

(15) **Description of Equipment**

The Model 3770-1 Ex d / Ex i Field Barrier is intended for direct attachment to positioners which are constructed and certified to be intrinsically safe (type of protection "intrinsic safety").

The field barrier consists of the Model SC 16.1 Connection Box made by Cortem and a 3-channel safety barrier assembly encapsulated inseparably inside the enclosure. The intrinsically safe output circuits of the safety barriers are connected to the intrinsically safe positioner input circuits through bushings.

Technical Data

Signal Circuits
(terminals Ch 2+/-; Ch 3+/-)

Circuits parameters: (0)4 to 20 mA or UN up to 10 V, or NAMUR proximity switches

Input: $U_m = 250 \text{ V}$
Fuse current rating: $I_N = 80 \text{ mA}$

Output circuits: Type of protection "Intrinsic Safety EEx ia IIC"
(terminals Ch 2+/-; Ch 3+/-)

Maximum values: $U_0 \leq 12.6 \text{ V}$
 $I_0 \leq 49 \text{ mA}$
 $P_0 \leq 154 \text{ mW}$
Output characteristic linear

EEx ia	IIC	IIB
C_0	1.15 μF	7.4 μF
L_0	15 mH	56 mH

Signal circuit
(terminals Ch1 +/-)

Circuits parameters: 4 to 20 mA
Input: $U_m = 250 \text{ V}$
Fuse current rating: $I_N = 80 \text{ mA}$

Output circuit: Type of protection "Intrinsic Safety EEx ia IIC"
(terminals Ch1 +/-)

Maximum values: $U_0 \leq 17.2 \text{ V}$
 $I_0 \leq 110 \text{ mA}$
 $P_0 \leq 473 \text{ mW}$
Output characteristic linear

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EEx ia	IIC	IIB
C0	360 mF	2.1 µF
L0	3 mH	12 mH

(16) **Report**

PTB Ex 98-17005 comprising description (18 sheets), drawings (5 sheets),
Three PTB text records.

(17) **Special conditions for safe use**

Connection

1. The Model 3770-1 Ex d / Ex i Field Barrier shall be connected by suitable cable or conduit entries complying with the requirements of EN 50018 clauses 13.1 and 13.2 and for which a separate test certificate has been issued.
2. Cable entries (Pg glands) and plugs of plain construction must not be used. Where the field barrier is connected by means of a conduit entry approved for this application, the associated sealing device shall be provided immediately at the enclosure.
3. Apertures not used shall be closed in accordance with EN 50018 clause 11.9.

These notes shall be added to each apparatus in appropriate form.

Ambient temperature

The ambient temperature range for the application of the Model 3770-1
Ex d/Ex i Filed Barrier is -45 °C to 60 °C.

Routine tests

The routine tests specified in EN 50018 clause 16.1 are not required according to clause 16.2 because the type test has been made successfully at a pressure of four times the reference pressure.

Potential equalization

A bonding conductor shall be provided along the intrinsically safe output circuits.

(18) **Essential Health and Safety Requirements**

Not applicable.

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 08.06.1998

(Signature) (Seal)

Dr.-Ing. K. Klausmeyer
Oberregierungsrat

EC Type Examination Certificates without signature and seal are invalid.

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Extracts or changes shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig

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T R A N S L A T I O N

A D D E N D U M N o.: 1

**in compliance with Directive 94/9/EC Annex III Clause 6
to the EC Type Examination Certificate PTB 98 ATEX 1025 X**

Equipment: Model 3770-1 Ex d/Ex i Field Barrier
Manufacturer: SAMSON AG Mess- und Regeltechnik
Address: Weismüllerstr. 3, D-60314 Frankfurt

Description of the additions and modifications

The Model 3770-1 Ex d/Ex i Field Barrier series is expanded by the versions 3770-12 and 3770-14 and in future may be manufactured in compliance with the certification documents identified in the associated test report.

The modifications relate to the design and construction for the type of protection Intrinsic Safety "i"

The electrical data and all the other data apply without change also to this Addendum No. 1

Test report: PTB Ex 00-20259

Zertifizierungsstelle Explosionsschutz Braunschweig, 10 October 2000
By order

(Signature) (Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

EC Type examination Certificates without signature and seal are invalid.
This EC Type Examination Certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or changes shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

СЕРТИФИКАТ СООТВЕТСТВИЯ



№ ТС RU C-DE.AA87.B.01278

Серия RU № 0743927

ОРГАН ПО СЕРТИФИКАЦИИ Орган по сертификации взрывозащитного и рудничного оборудования (ОС ЦСВЭ) Общества с ограниченной ответственностью «Центр по сертификации взрывозащитного и рудничного оборудования» (ООО «НАНИО ЦСВЭ»). Адрес места нахождения юридического лица: Россия, 140004, Московская область, Люберецкий район, город Люберцы, поселок ВУГИ, АО «Завод «ЭКОМАШ», литера В, Объект 6, этаж 3, офис 26. Адрес места осуществления деятельности в области аккредитации: Россия, 140004, Московская область, Люберецкий район, город Люберцы, поселок ВУГИ, АО «Завод «ЭКОМАШ», Литера В, Объект 6, этаж 3, офисы 26/3, 26/4, 26/5, 27/6, 30/1, 32. Аттестат № RA.RU.11AA87 от 20.07.2015 г. Телефон: +7 (495) 558-83-53, +7 (495) 558-82-44. Адрес электронной почты: ceve@ceve.ru

ЗАЯВИТЕЛЬ Общество с ограниченной ответственностью «Самсон Контрол», Россия, 109147, Москва, ул. Марксистская, д. 16. ОГРН: 1037700041026. Телефон: +7 (495) 7774545. Адрес электронной почты: samson@samson.ru

ИЗГОТОВИТЕЛЬ SAMSON AG Mess- und Regeltechnik, Weismüllerstrasse 3, 60314 Frankfurt am Main, Германия.

ПРОДУКЦИЯ Позиционеры типов 3730-01, 3730-11, 3730-31, 3730-6-113, 3730-08, 3730-18, 3730-38, 3730-6-813, 3730-6-213 с электропреобразователем (барьером) типа 3770-1 (выпускаются в соответствии с технической документацией SAMSON AG Mess- und Regeltechnik на позиционеры типов 3730-01, 3730-11, 3730-31, 3730-6-113, 3730-08, 3730-18, 3730-38, 3730-6-813, 3730-6-213 с электропреобразователем (барьером) типа 3770-1) с Ех-маркировкой согласно приложению (см. бланки №№ 0550180, 0550181, 0550182, 0550183). Серийный выпуск.

КОД ТН ВЭД ТС 9032 810000

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ТР ТС 012/2011 «О безопасности оборудования для работы во взрывоопасных средах».

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ Протокола оценки и испытаний № 227.2018-Т от 29.11.2018 Испытательной лаборатории взрывозащитного и рудничного оборудования (ИЛ ЦСВЭ) Общества с ограниченной ответственностью «Центр по сертификации взрывозащитного и рудничного оборудования» (ООО «НАНИО ЦСВЭ») (аттестат № RA.RU.21AK06 от 19.01.2016); Акта о результатах анализа состояния производства сертифицируемой продукции № 151-А/18 от 10.10.2018 Органа по сертификации взрывозащитного и рудничного оборудования (ОС ЦСВЭ) Общества с ограниченной ответственностью «Центр по сертификации взрывозащитного и рудничного оборудования» (ООО «НАНИО ЦСВЭ») (аттестат № RA.RU.11AA87 выдан 20.07.2015).
Схема сертификации – 1с.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Перечень стандартов – см. приложение, бланк № 0550183.
Условия и срок хранения указаны в технической документации.
Назначенный срок службы – 15 лет.

СРОК ДЕЙСТВИЯ С 30.11.2018 ПО 29.11.2023 ВКЛЮЧИТЕЛЬНО

Руководитель (уполномоченное
лицо) органа по сертификации

Коган Алексей Александрович
(инициалы, фамилия)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

Мозеров Валентин Алексеевич
(инициалы, фамилия)



ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-DE.AA87.B.01278 Лист 1

Серия RU № 0550180

1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Позиционеры типов 3730-01, 3730-11, 3730-31, 3730-6-113, 3730-08, 3730-18, 3730-38, 3730-6-813, 3730-6-213 с электропреобразователем (барьером) типа 3770-1 (далее – позиционеры) предназначены для преобразования электрического входного сигнала в пропорциональный пневматический выходной сигнал и выдачи токового или цифрового сигнала положения клапана.

Область применения – взрывоопасные зоны помещений и наружных установок, а также зоны, опасные по воспламенению горючей пыли, согласно Ех-маркировке, ГОСТ ИЕС 60079-14-2013, регламентирующим применение электрооборудования во взрывоопасных средах.

2. ОСНОВНЫЕ ТЕХНИЧЕСКИЕ ДАННЫЕ

2.1. Ех-маркировка:		
- позиционеры типов 3730-01		1Ex ia IIC T6...T4 Gb Ex ia IIC T80°C Db или Ex tb IIC T80°C Db
- позиционеры типов 3730-08		2Ex nA II T6...T4 Ge X Ex tc IIC T80°C De X
- позиционеры типов 3730-11		1Ex ia IIC T6...T4 Gb Ex ia IIC T80°C Db или Ex tb IIC T80°C Db
- позиционеры типов 3730-18		2Ex nA IIC T6...T4 Ge X Ex tc IIC T80°C De X
- позиционеры типов 3730-31		1Ex ia IIC T6...T4 Gb Ex ia IIC T80°C Db или Ex tb IIC T80°C Db
- позиционеры типов 3730-38		2Ex ic IIC T6...T4 Ge или 2Ex nA IIC T6...T4 Ge X Ex tc IIC T80°C De X
- позиционеры типов 3730-6-113		1Ex ia IIC T6...T4 Gb Ex ia IIC T80°C Db или Ex tb IIC T80°C Db
3730-6-213 с электропреобразователем (барьером) типа 3770-1		1Ex d [ia] IIC T6...T4 Gb X Ex tb IIC T80°C Db X
- позиционеры типов 3730-6-813		2Ex nA IIC T6...T4 Ge X 2Ex ic IIC T6...T4 Ge или Ex tc IIC T80°C De
2.2. Диапазон температур окружающей среды, °С:		
- позиционеры типов 3730-6-113, 3730-6-213:		
для I ₁ = 52мА		от минус 55 до +45(Т6)/+60(Т5)/+75(Т4)
для I ₁ = 25мА		от минус 55 до +60(Т6)/+80(Т5)/+80(Т4)
- позиционеры типов 3730-11		от минус 40 до +50(Т6)/+70(Т5)/+80(Т4)
- позиционеры типов 3730-11:		
для I ₁ = 52мА		от минус 40 до +45(Т6)/+60(Т5)/+75(Т4)
для I ₁ = 25мА		от минус 40 до +60(Т6)/+80(Т5)/+80(Т4)
- позиционеры типов 3730-31:		
для I ₁ = 52мА		от минус 55 до +45(Т6)/+60(Т5)/+75(Т4)
для I ₁ = 25мА		от минус 55 до +60(Т6)/+80(Т5)/+80(Т4)
- позиционеры типов 3730-08		от минус 40 до +50(Т6)/+70(Т5)/+80(Т4)
- позиционеры типов 3730-18		от минус 40 до +60(Т6)/+70(Т5)/+80(Т4)
- позиционеры типов 3730-38		от минус 55 до +60(Т6)/+70(Т5)/+80(Т4)
- позиционеры типов 3730-6-813:		
для I ₁ = 52мА		от минус 55 до +45(Т6)/+60(Т5)/+75(Т4)
для I ₁ = 25мА		от минус 55 до +60(Т6)/+80(Т5)/+80(Т4)
- электропреобразователь типа 3770-1		от минус 45 до +60
2.3. Степень защиты от внешних воздействий:		
- позиционеры с Ех-маркировкой 2Ex nA II T6...T4 Ge X		не ниже IP54
- все остальные позиционеры		IP65, IP66



Руководитель (уполномоченное
лицо) органа по сертификации
Эксперт-аудитор (эксперт)

Kogan
подпись

Mozorov
подпись

Коган Алексей Александрович

инициалы, фамилия

Мозоров Валентин Алексеевич

инициалы, фамилия

ТАМОЖЕННЫЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС **RU C-DE.AA87.B.01278** Лист 2

Серия RU № **0550181**

2.4. Входные и выходные искробезопасные параметры позиционеров с Ex-маркировкой IEx ia IIC T6...T4 Gb, Ex ia IIC T80°C Db:											
Типы позиционеров	Клеммы	Входные искробезопасные параметры					Выходные искробезопасные параметры				
		U _в , В	I _в , mA	P _в , Вт	L _в , мкГн	C _в , нФ	U _н , В	I _н , mA	P _н , мВт	L _н , мГн	C _н , нФ
3730-6-113, 3730-6-213	11/12	28/32	115/87	1	0	5,3	-	-	-	-	-
	31/32	28/32	115/87,5	1	0	5,3	-	-	-	-	-
		30	100	-	0	56,3	-	-	-	-	-
		30	100	1	0	5,3	-	-	-	-	-
	41/42	16	52/25	0,169/0,064	100	30	-	-	-	-	-
	41/42 и 51/52	20	60	0,25	0	5,3	-	-	-	-	-
	81/82	28/32	115/87,5	-	0	5,3	-	-	-	-	-
	83/84	20	60	0,25	0	5,3	-	-	-	-	-
	Интерфейс SSP	20	60	0,2	0	0	7,88	69,2	137	10	650
	Датчик положения	-	-	-	370	66	7,88	13,2	27	10	1000
3730-01	11/12	28	115	1	0	5,3	-	-	-	-	
3730-11	11/12	28	115	1	0	6	-	-	-	-	
	44/45	16	52/25	0,169/0,064	100	30	-	-	-	-	
	41/42 и 51/52	20	60	0,25	0	16	-	-	-	-	
3730-31	11/12	28	115	1	0	35	-	-	-	-	
	31/32	28	115	1	0	5,3	-	-	-	-	
		30	100	0,25	0	56,3	-	-	-	-	
		30	100	-	0	5,3	-	-	-	-	
	41/42	16	52/25	0,169/0,064	100	30	-	-	-	-	
	41/42 и 51/52	20	60	0,25	0	5,3	-	-	-	-	
	81/82	28	115	-	0	5,3	-	-	-	-	
	83/84	20	60	0,25	0	5,3	-	-	-	-	
	Интерфейс BU	16	25	0,064	0	0	7,88	61,8	120	10	650
	Датчик положения	-	-	-	370	730	7,88	61	120	10	660

2.5. Входные и выходные искробезопасные параметры позиционеров с Ex-маркировкой 2Ex ic IIC T6...T4 Gc X, Ex ic IIC T80°C Dc X

Типы позиционеров	Клеммы	Входные искробезопасные параметры					Выходные искробезопасные параметры				
		U _в , В	I _в , mA	P _в , Вт	L _в , мкГн	C _в , нФ	U _н , В	I _н , mA	P _н , мВт	L _н , мГн	C _н , нФ
3730-08	11/12	28	115	1	0	5,3	-	-	-	-	-
		28	115	1	0	5,3	-	-	-	-	-
3730-18	11/12	28	115	1	0	6	-	-	-	-	-
		44/45	20	52/25	0,169/0,064	100	30	-	-	-	-
		41/42 и 51/52	20	60	0,25	0	16	-	-	-	-
3730-38	11/12	30	100	1	0	35	-	-	-	-	-
		31/32	28/30	115/100	1	0	5,3	-	-	-	-
			30	100	0,25	0	56,3	-	-	-	-
	-	-	-	-	0	5,3	-	-	-	-	
	41/42	20	52/25	0,169/0,064	100	30	-	-	-	-	
	41/42 и 51/52	20	60	0,4	0	5,3	-	-	-	-	
	81/82	30	100	-	0	5,3	-	-	-	-	
	83/84	20	60	0,4	0	5,3	-	-	-	-	
	Интерфейс BU	20	25	0,064	0	0	7,88	62	120	10	650
	Датчик положения	-	-	-	370	730	7,88	61	120	10	660
3730-6-813	11/12	32	132	1,2	0	5,3	-	-	-	-	
		31/32	32	132	1	0	56,3	-	-	-	
	41/42	20	52/25	0,169/0,064	100	30	-	-	-	-	
	41/42 и 51/52	20	60	0,4	0	5,3	-	-	-	-	
	81/82	32	132	-	0	5,3	-	-	-	-	
	83/84	20	60	0,4	0	5,3	-	-	-	-	
	Интерфейс SSP	20	60	0,2	0	5,3	-	-	-	-	
	Датчик положения	7,88	61	0,12	10000	1000	-	-	-	-	

Значения U_в, I_в, P_в, I_н, P_н определяются из максимально допустимой входной мощности P_в* и не могут воздействовать на вход позиционеров одновременно.



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ПРИЛОЖЕНИЕ

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2.6. Электрические параметры позиционеров с Ex-маркировкой 2Ex nL IIC T6...T4 Gc X

Цепь	Клеммы	Номинальное напряжение постоянного тока $U_{пв}$, В		Ток, мА		
	11/12	-		4...20		
Датчик положения	31/32	-		4...20		
Концевой датчик	41/42	8		8		
Программное обеспечение	41/42 и	8		8		
	51/52					
Магнитный клапан	81/82	6...24		-		
Индикация ошибок	83/84	8		8		
Датчик положения (оммический)	-	6...30		-		
2.7. Электрические параметры позиционеров 3730-6-213 с электропреобразователем (барьером) типа 3770-1 с Ex-маркировкой 1Ex d [ia] IIC/IV T6 Gb X, Ex tb IIC T80°C Db X:						
- максимальное напряжение переменного тока $U_{пв}$, В				250		
- номинальный ток, мА				80		
- выходной сигнал				4-20 мА		
2.8. Выходные искробезопасные параметры электропреобразователя типа 3770-1:						
Цепь	Клеммы	$U_{пв}$, В	$I_{пв}$, мА	$P_{пв}$, мВт	$L_{пв}$, мГн	$C_{пв}$, мкФ
Канал 1	+/-	17,2	110	473	3	360
Канал 2, 3	+/-	12,6	49	154	15	1,15

3. ОПИСАНИЕ КОНСТРУКЦИИ И ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИЩЕННОСТИ ИЗДЕЛИЙ

Позиционеры типов 3730-6-113, 3730-6-213, 3730-6-813 выполнены в прямоугольном корпусе, изготовленного из нержавеющей стали или из алюминиевого сплава с содержанием магния, цинка и циркония менее 7,5%. На одной боковой стороне поверхности корпуса имеются отверстия под кабельные вводы, на другой – фитинги пневматической системы. Внутри корпусов позиционеров размещены электронные платы схем управления. На корпусе имеется заземляющий зажим и маркировочная табличка.

Позиционеры типов 3730-01, 3730-11, 3730-31, 3730-08, 3730-18, 3730-38 выполнены в виде единого блока, состоящего из корпуса и крышки. Внутри корпуса расположена электронная плата I/P преобразователя, элементы для подключения электрических и пневматических линий. На корпусе имеются отверстия под кабельные вводы.

Электропреобразователь типа 3770-1 представляет собой электронную схему многоканального барьера искрозащиты, помещенную в цилиндрический корпус из алюминиевого сплава с содержанием магния, цинка и циркония менее 7,5%. На корпусе имеются отверстия под кабельные вводы, наружный и внутренний заземляющие зажимы.

Взрывозащищенность позиционеров обеспечивается выполнением требований стандартов:

ГОСТ 31610.11-2014 (IEC 60079-11:2011). Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты искробезопасная электрическая цепь «и», ГОСТ 31610.15-2012/МЭК 60079-15:2005. Электрооборудование для взрывоопасных газовых сред. Часть 15. Конструкция, испытания и маркировка электрооборудования с видом защиты «и». ГОСТ 31610.0-2014 (IEC 60079-0:2011). Взрывоопасные среды. Часть 0. Оборудование. Общие требования. ГОСТ IEC 60079-1-2011 Взрывоопасные среды. Часть 1. Оборудование с видом взрывозащиты «взрывонепроницаемые оболочки «д», ГОСТ IEC 60079-31-2010 Взрывоопасные среды. Часть 31. Оборудование с защитой от воспламенения пыли оболочками «в» согласно Ex-маркировке, приведенной в п.2.1.

4. МАРКИРОВКА

Ex-маркировка, наносимая на позиционеры, должна включать следующие данные:

- товарный знак или наименование предприятия - изготовителя;
- тип изделия;
- заводской номер;
- Ex-маркировку;
- специальный знак взрывобезопасности;
- предупредительные надписи;
- наименование или знак центра по сертификации и номер сертификата соответствия;



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5. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ

Знак X, стоящий после Ex-маркировки, означает, что при эксплуатации позиционеров необходимо соблюдать следующие специальные условия:

5.1. Позиционеры типа 3730-38 с Ex-маркировкой 2Ex nA IIC T6...T4 Ge X подключаются к цепи питания датчика положения через предохранитель с номинальным током $I_n \leq 40$ mA.

5.2. Позиционеры типов 3730-08, 3730-18 с Ex-маркировкой 2Ex nA IIC T6...T4 Ge X подключаются к сигнальным цепям через предохранитель с номинальным током $I_n \leq 80$ mA.

5.3. Позиционеры типа 3730-6-813 с Ex-маркировкой 2Ex nA IIC T6...T4 Ge X подключаются к сигнальным цепям и цепям питания датчика положения через предохранитель с номинальным током $I_n \leq 80$ mA, а цепь программного интерфейсного адаптера через предохранитель с номинальным током $I_n \leq 40$ mA.

5.4. Предохранители, указанные в п. 5.1, 5.2, 5.3, устанавливаются вне взрывоопасной зоны.

5.5. Подсоединение внешних электрических цепей к позиционерам с Ex-маркировкой IEx d [ia] IIC T6 Gb X, Ex tb IIC T80°C Db X необходимо осуществлять через кабельные вводы, имеющие сертификат соответствия требованиям ТР ТС 012/2011 на электрооборудование с видом взрывозащиты "d" для взрывоопасной газовой смеси категории IIC.

5.6. Не используемые отверстия под кабельные вводы позиционеров с Ex-маркировкой IEx d [ia] IIC T6 Gb X, Ex tb IIC T80°C Db X закрываются заглушками, имеющими сертификат соответствия требованиям ТР ТС 012/2011.

Специальные условия применения, обозначенные знаком X, должны быть отражены в сопроводительной документации, подлежащей обязательной поставке с каждым позиционером.

Внесение изменений в конструкцию позиционером возможно только по согласованию с НАННО ЦСВЭ в соответствии с требованиями ТР ТС 012/2011.

Инспекционный контроль – 2019 г., 2020 г., 2021 г., 2022 г.



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14 Annex

14.1 After-sales service

Contact our after-sales service for support concerning service or repair work or when malfunctions or defects arise.

You can reach our after-sales service at aftersalesservice@samsongroup.com.

Addresses of SAMSON AG and its subsidiaries

The addresses of SAMSON AG, its subsidiaries, representatives and service facilities worldwide can be found on our website (www.samsongroup.com) or in all SAMSON product catalogs.

Required specifications

Please submit the following details:

- Order number and position number in the order
- Type, serial number, firmware version, device version

EB 8379 EN



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