



WORLD
WIDE
EXPERIENCE



Explosionsgeschützte Elektromagnete und Sensoren
Explosion proof solenoids and sensors



Explosionssgeschützte Elektromagnete und Sensoren

Explosion proof solenoids and sensors



Zwilling-Ventilsteuermagnete
Twin solenoids



10 – 19

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Betätigungssysteme
Actuator systems



20 – 26

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Wegaufnehmer
Displacement transducer



27 – 34

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Welt der Zertifikate World of Certificates



Explosionsgefährdete Bereiche mit Gas- und Staubatmosphäre
Potentially explosive areas with gas and dust atmospheres



Bergbauanwendungen
Mining applications



Öl- & Gasförderung
Oil & gas extraction

Europe



CERTIFICATION SCHEME – LOCAL
ATEX 2014/34/EU

A huge number of world wide Notified Bodies.

ACCEPTED CERTIFICATION SCHEME – GLOBAL

No direct acceptance of any other certificate. An IECEx ExTR from any IECEx ExCB can be used to support an application for ATEX EC-Type Examination.

USA/Canada*



CERTIFICATION SCHEME – LOCAL

No certificate name. Products must be tested and listed by a NRTL (Nationally Recognized Testing Laboratory) accredited by OSHA (Occupational Safety and Health Administration). The apparatus must be proofed against the National Electrical Code – Also referred to as NFPA 70, NEC or NEC500 which is following IEC Standard.



ACCEPTED CERTIFICATION SCHEME – GLOBAL

No direct acceptance of any other certificate –
US-Cost Guard is accepting IECEx



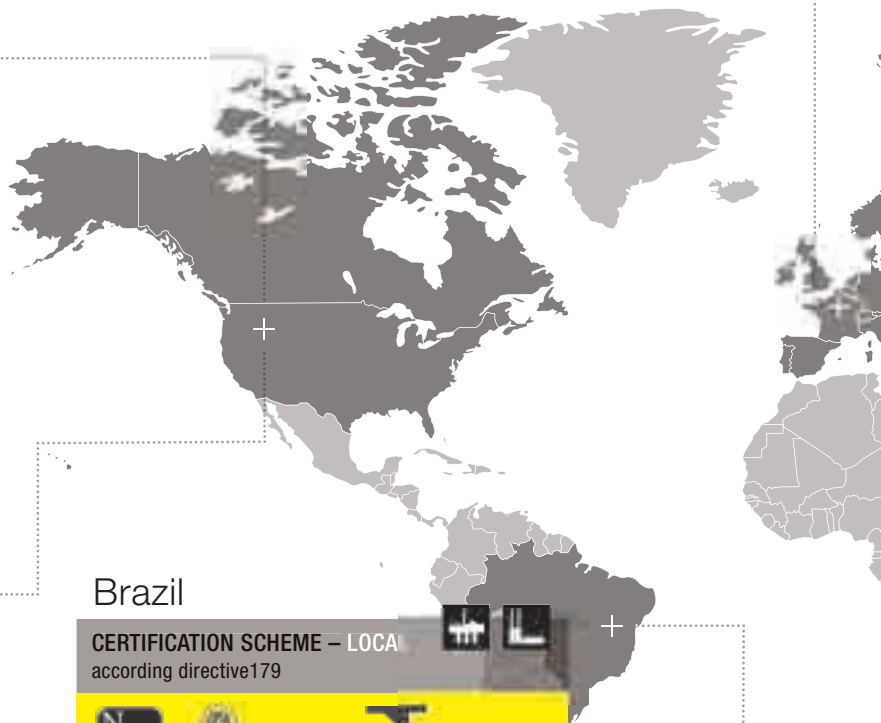
CERTIFICATION SCHEME – LOCAL



ACCEPTED CERTIFICATION SCHEME – GLOBAL

No direct acceptance of any other certificate

* Canada has special requirements similarly with US but not the same – get in contact with us for details.



Brazil



CERTIFICATION SCHEME – LOCAL
according directive179



NCC as subsidiary of BV is doing Inmetro certificates for us.

ACCEPTED CERTIFICATION SCHEME – GLOBAL

No direct acceptance of any other certificate,
but IECEx is accepted as a basis for local certification



CERTIFICATION SCHEME – LOCAL
according directive179



NCC as subsidiary of BV is doing Inmetro certificates for us.

ACCEPTED CERTIFICATION SCHEME – GLOBAL

No direct acceptance of any other certificate,
but IECEx is accepted as a basis for local certification

World Wide

An IECEx ExTR from any IECEx ExCB can be used to support an application for national certificate of most countries.
Get in contact with us for details.

Russia

CERTIFICATION SCHEME – LOCAL

TR-ZU (TR-CU) 012/2011 oriented on ATEX-Standard



and a lot more ...

**ACCEPTED CERTIFICATION SCHEME – GLOBAL**

No direct acceptance of any other certificate, but IECEx and ATEX are accepted as a basis for local certification

CERTIFICATION SCHEME – LOCALTR-ZU (TR-CU) 012/2011 oriented on ATEX-Standard
(!! Some regions require additional documentations)

and a lot more ...

**ACCEPTED CERTIFICATION SCHEME – GLOBAL**

No direct acceptance of any other certificate, but IECEx and ATEX are accepted as a basis for local certification

Australia
New Zealand**CERTIFICATION SCHEME – LOCAL**

According to IECEx Scheme

Worldwide all IECEx accredited CBs

ACCEPTED CERTIFICATION SCHEME – GLOBAL**CERTIFICATION SCHEME – LOCAL**

ANZEx Scheme

NATA, SAI Global, SIMTARS, NATA, TestSafe,
Tüv Rheinland Australia (ITACS) MSTC**ACCEPTED CERTIFICATION SCHEME – GLOBAL**No direct acceptance of any other certificate,
but IECEx is accepted as a basis for local certification

China

CERTIFICATION SCHEME – LOCAL

No certificate name. Products must be tested and listed by one of the above named certification centres.

These certification centres are accredited by SAWS (State Administration of Work Safety).

The apparatus must be proofed against GB Standard (GuoBiao) which is following IEC Standard.

**ACCEPTED CERTIFICATION SCHEME – GLOBAL**No direct acceptance of any other certificate,
but IECEx is accepted as a basis for local certification**CERTIFICATION SCHEME – LOCAL**Mining Products Safety Approval and Certification Center is authorized by SAWS. The only one!
SACMSS (Safety Certificate of Approval for Mining Products) officially better known as MA (because MA is the only CB which is accredited).Mining Products
Safety Approval and
Certification Center is
authorized by SAWS.
The only one!SACMSS (Safety
Certificate of Approval
for Mining Products)
officially better known
as MA (because MA is
the only CB which is
accredited).**ACCEPTED CERTIFICATION SCHEME – GLOBAL**

No direct acceptance of any other certificate, but IECEx and ATEX are accepted as a basis for local certification



IECEx Türöffner zu regionalen Märkten

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Aufgrund des Gefährdungspotenzials für Mensch und Umwelt bestehen im Zusammenhang mit Explosionsschutz eine Vielzahl gesetzlicher als auch vergleichbarer Regelungen mit nationaler Prägung.

Solche nationalen Einflüsse führen dazu, dass Produkte welche zum Beispiel den Europäischen Anforderungen entsprechen in außereuropäischen Ländern nicht oder nur mit zusätzlichen Prüfungen oder Dokumenten einsetzbar sind. Im europäischen Raum wird das ATEX Zertifikat in den 28 Mitgliedsstaaten der EU und den 4 Mitgliedsstaaten der EFTA (Island, Lichtenstein, Norwegen, Schweiz) sowie der Türkei anerkannt.

Verlässt man den europäischen Raum, stellt wiederum das IECEx Zertifikat eine Art Türöffnerfunktion zum Weltmarkt dar. Die Liste der Mitgliedsstaaten deckt mit den Ländern: Australien, Brasilien, Kanada, China, Kroatien, Tschechische Republik, Dänemark, Finnland, Frankreich, Deutschland, Ungarn, Israel, Indien, Italien, Japan, Korea, Malaysia, Niederlande, Neuseeland, Norwegen, Polen, Rumänien, Russland, Singapur, Slovenien, Südafrika, Spanien, Schweden, Schweiz, Türkei, UAE, England, USA den Globus nahezu Flächen-deckend ab.

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Due to the hazard potential for humans and the environment, a number of statutory regulations exist for explosion protection, as well as comparable regulations with national criteria.

National influences like these mean that products, which, for example, comply with European requirements, cannot be used in countries outside Europe or only with additional tests or documents. In Europe, the ATEX Certificate is recognised in the 28 EU member states and the 4 EFTA member states (Iceland, Liechtenstein, Norway, Switzerland), as well as in Turkey.

Outside of Europe, the IECEx Certificate acts as a kind of „door opener“ to the world market. The list of member states: Australia, Brazil, Canada, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Israel, India, Italy, Japan, Korea, Malaysia, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, UAE, England, USA covers practically the entire world.

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Leider bedeutet die Mitgliedschaft nicht gleichzeitig die nationale Anerkennung von IECEx-Zertifikaten. Lediglich der IECEx-Vorreiter Australien sowie Neuseeland erkennen IECEx-Zertifikate ohne zusätzliche Bedingungen an. Aber selbst hier existieren im Bereich des Untertagebaus national geprägte Restriktionen. Wer solche Spezifika nicht kennt, setzt unter Umständen auf das falsche Zertifikat.

Unserer Erfahrung nach ist der Weg zu einem weltweit anerkannten Zertifikat mit dem IECEx-Scheme zwar beschritten worden, ob dieses Ziel jemals vollumfänglich erreicht wird ist jedoch ungewiss.

Und doch ist schon viel erreicht worden, denn unter allen Zulassungen und Konformitätserklärungen hat das IECEx-Zertifikat eine Schlüsselrolle erlangt und dient in vielen Ländern als direkter oder indirekter Türöffner für deren Märkte. So können in den neunundzwanzig IECEx Mitgliedsstaaten auf Basis der IECEx CoC* und den Dokumenten ExTR* und QAR über ein sogenanntes -Fast Track- Verfahren, benötigte nationale Konformitätserklärungen vereinfacht erlangt werden. Ermöglicht wird dies durch die einheitlichen Maßstäbe bei der Akkreditierung und regelmäßigen Überwachung der IECEx-Testlaboratorien (ExTL*) der Mitgliedsstaaten.

Division oder Zone Sonderfall USA

Einen Sonderfall stellen die USA dar, denn um explosionsgeschützte elektrische Betriebsgeräte in den USA einsetzen zu können benötigen diese die Zulassung einer nationalen Prüfstelle wie z.B. UL* oder FM*. Je nach definierter Klassifizierung der Ex-Bereiche kommt entweder das an die IEC angelehnte Zonen- oder das amerikanische Division-System zur Anwendung. Die USA und Canada haben sich zwischenzeitlich zur Zonen-Klassifizierung bekannt. Für Kanada bedeutet dies, dass alle Neuinstallationen nach der 3-Zonen-Klassifizierung erfolgen müssen. Bei Bestandsanlagen kann die Division-Klassifizierung weiter verfolgt werden oder optional die gesamte Anlage auf Zonen re-klassifiziert werden, was wirtschaftlich gesehen eher unwahrscheinlich erscheint.

Unfortunately, membership does not automatically mean automatic recognition of IECEx Certificates. Solely the IECEx pioneer countries Australia and New Zealand recognise IECEx Certificates without additional conditions. However, national criteria apply even for underground mining in these countries. If a company does not know of these specific regulations, they may use the wrong certificate.

In our experience, efforts have been made towards a globally recognised certificate with the IECEx scheme, but it is uncertain whether this goal will ever be completely attained.

Nevertheless, a great deal has been achieved, since the IECEx Certificate now plays a key role amongst all permits and conformity declarations, serving as a direct or indirect „door opener“ to markets in many countries. In this way, on the basis of the IECEx CoC* and ExTR* and QAR documents, the required national conformity declarations can be obtained in a simplified way in the twenty-nine IECEx member states via a so-called fast track procedure. This is made possible by standardised criteria during accreditation and regular monitoring of the IECEx testing laboratories (ExTL*) in the member states.

The USA is a special case, since, in order to use explosion-protected electrical operating units in the USA, these require approval from a national testing centre such as UL* or FM*. According to the defined classification of the areas subject to explosion hazards, either the zone system based on the IEC or the American division system is used. In the meantime, the USA and Canada have confirmed that they will use the zone classification system. For Canada, this means that all new installations must be carried out according to the 3-zone classification. Where existing systems are concerned, the division classification can continue to be used or optionally, the entire system can be reclassified using zones. For commercial reasons, however, this seems unlikely.



Nationale Besonderheiten als Herausforderung

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In den USA hingegen steht die Division-Einteilung weiterhin gleichwertig neben der Zonen-Einteilung. Allerdings gibt es eine klare Entweder-oder-Entscheidung. Auch für bestehende Anlagen besteht eine Re-Klassifizierungsoption, welche aber aufgrund der wirtschaftlichen Konsequenzen eher theoretischer Natur ist.

Es gibt eine Vielzahl solcher oder ähnlicher nationaler Besonderheiten die den Einsatz von Geräten in explosionsgefährdeten Umgebungen regeln.

Die Firma Schienle Magnettechnik verfügt über jahrzehntelange internationale Erfahrung im Explosionsschutz. Wir verfügen über nahezu alle erforderlichen Auditierungen und die praktische Erfahrung, Ihre Produkte für den weltweiten Einsatz zu entwickeln und zu qualifizieren.

Sie werden in der vorliegenden Broschüre viele Produkte finden, die bereits über weltweite Zulassungen verfügen. Gerne arbeiten wir gemeinsam mit Ihnen an Ihrem „Ex – Weltmagneten oder Sensor“.

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In the USA, division classification continues to have equal status with zone classification. However, there is a clear either/or decision. For existing systems too, there is a reclassification option, which, however, is mainly theoretical, due to the economic consequences.

There are a number of these specifically national features, or similar ones, for the regulation of devices in potentially explosive environments.

Schienle Magnettechnik has decades of international experience in the area of explosion protection. We have almost all the required auditing and practical experience for developing and qualifying your products for global use.

The enclosed brochure includes many products that already have worldwide approval. We would be pleased to co-operate with you on your „Ex – world magnet or sensor“.

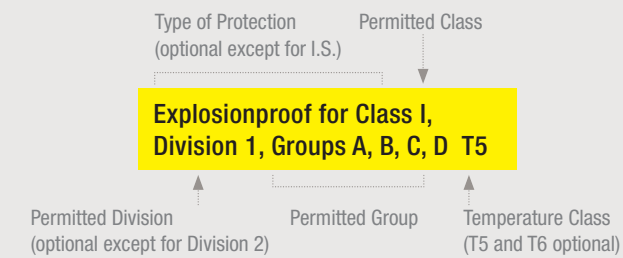
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Labelling explosion protected equipment

Explosive Gas Atmosphere

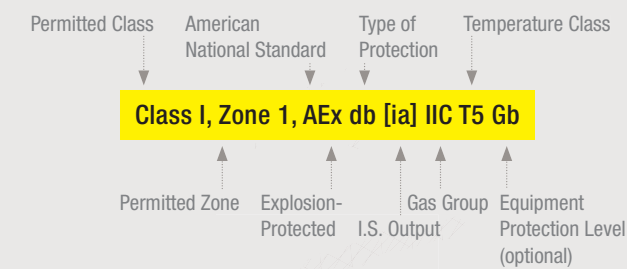
EX MARKING

US (NEC® 500) and CA (CEC Annex J18)



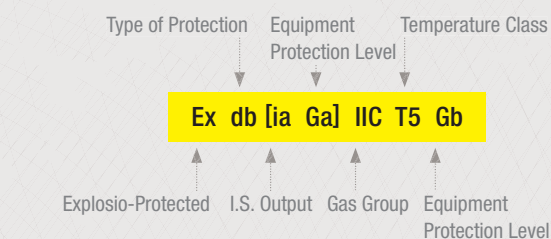
Ambient temperatur ranges other standard ($-25\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

US (NEC® 505)



Ambient temperatur ranges other standard ($-20\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

CA (CEC Section 18), EU and IEC



Ambient temperatur ranges other standard ($-20\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

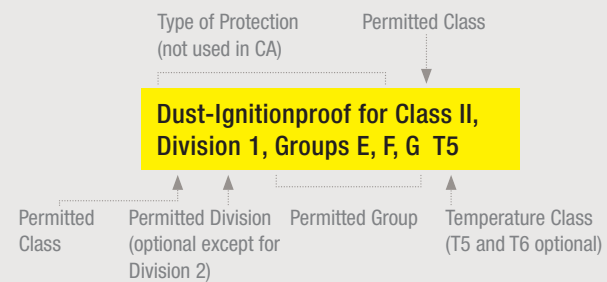
Additional EU marking per 2014/34/EU (ATEX)



Explosive Dust Atmosphere

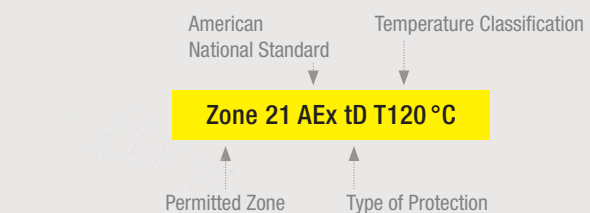
EX MARKING

US (NEC® 500) and CA (CEC Annex J18)



Ambient temperatur ranges other standard ($-25\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

US (NEC® 506 per 61241)



Ambient temperatur ranges other standard ($-20\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

US (NEC® 506 per 60079)



Ambient temperatur ranges other standard ($-20\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

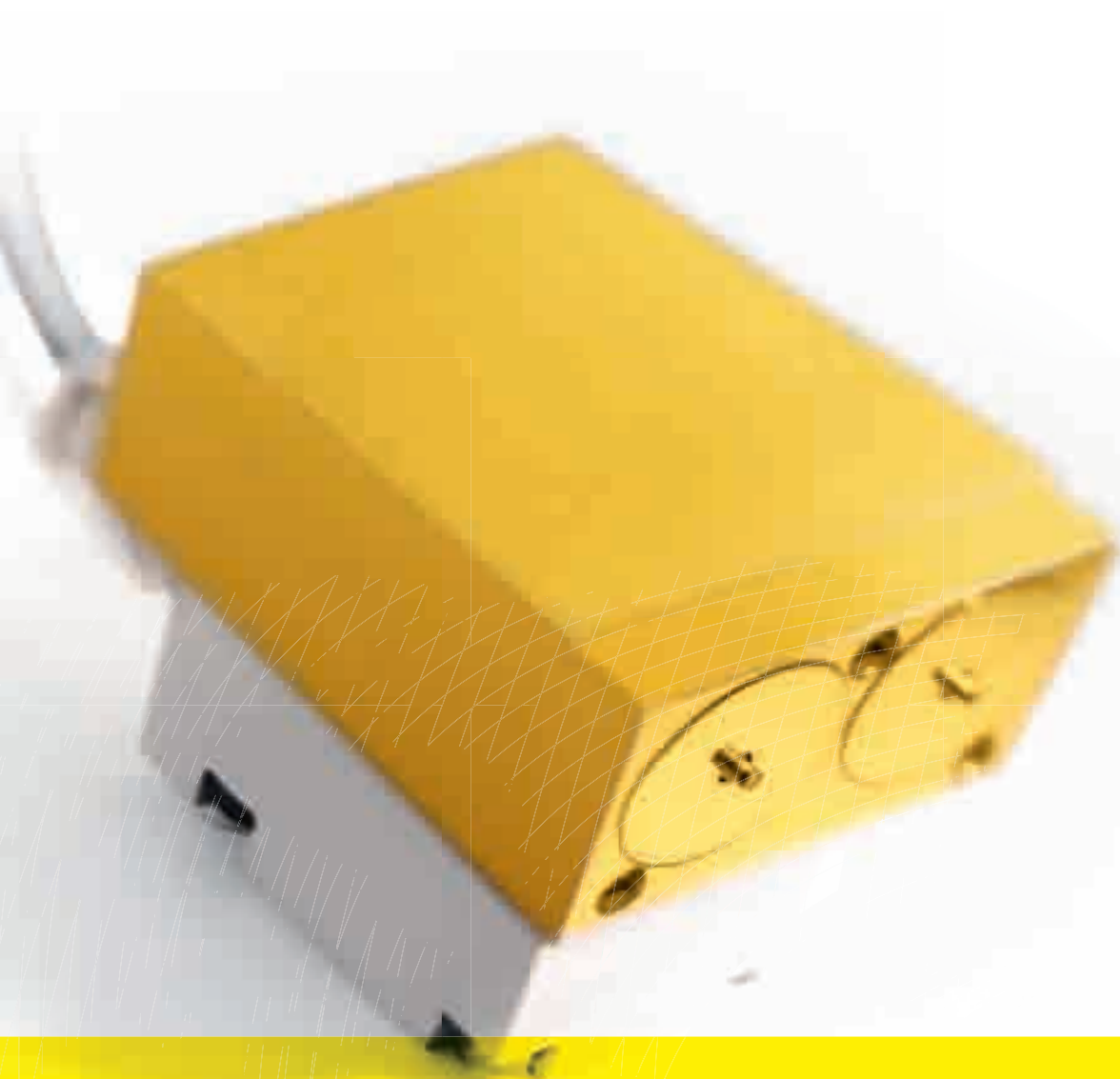
CA (CEC Sect 18), EU and IEC



Ambient temperatur ranges other standard ($-20\text{ °C} \leq T_a \leq +40\text{ °C}$) must be marked.

Additional EU marking per 2014/34/EU (ATEX)



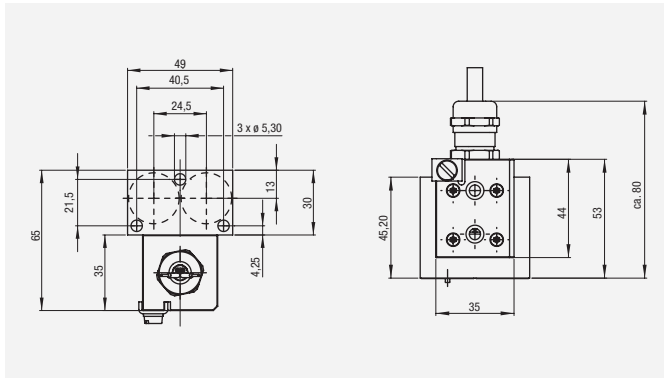


Zwilling-Ventilsteuermagnete
Twin solenoids





Twin solenoids Ex 01



- 24 V DC twin solenoid
- Force: 21
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX01	ATEX	-35 °C up to +40 °C	Ⓢ II 2G Ex mb II 120 °C (T4) Gb Ⓢ II 2D Ex mb IIIC T120 °C Db

EX

Electrical data		Mechanical data	
Nominal voltage [V]	24	Working pressure [bar]	50
Limiting current [A]	0.63	Stroke [mm]	1.2
Power-on-time [%]	100	Manual override	yes
Ambient temperature [°C]	-35 °C up to +40°	Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed
Max. medium temperature [°C]	+70 °C	Properties	proportional and ON/OFF F-s diagram
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)		
Isolation class of coil	H		

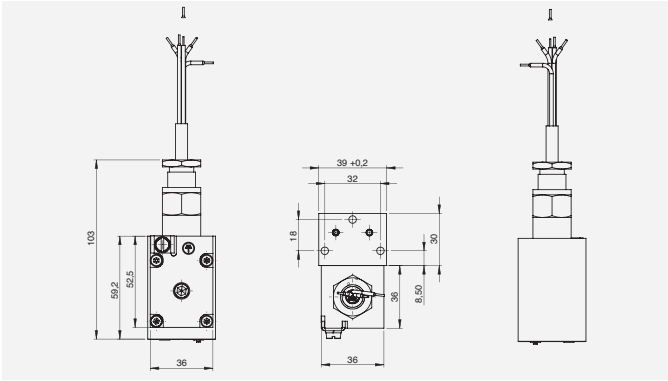
TECHNICAL DETAILS

Certification data	
ATEX	TÜV-A12ATEX0005X

Twin solenoids Ex 03



DESCRIPTION



- 24 V DC flame proof twin solenoid
- Force: 15 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

EX

Type	Certification	Ambient temperature	Labeling
EX03	ATEX	-20 °C up to +40 °C	Ⓔ I M2 Ex d I Mb
	IECEX		Ex d I Mb
	MSHA (USA)		in work

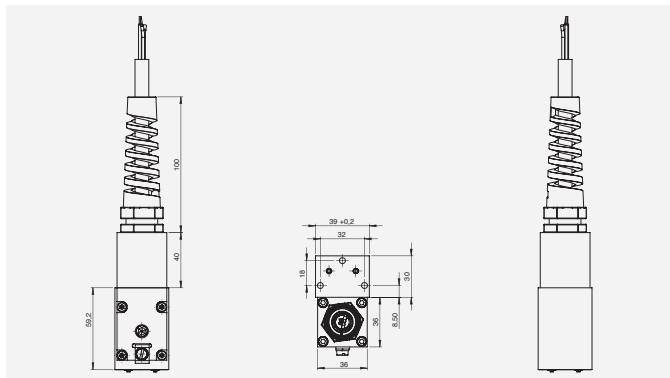
TECHNICAL DETAILS

Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	1.2	0.6
Power-on-time [%]	100	
Ambient temperature [°C]	-20 °C up to +40°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)	
Isolation class of coil	H	
Certification data		
ATEX	IBExU13ATEX1087X	
IECEX	IECEX IBE 13.0045X	

Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed



Twin solenoids Ex 04



- 24 V DC flame proof twin solenoid
- Force: 15 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX04	NEC 500 (USA)	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	NEC 505 (USA) NEC 506 (USA)	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db
	CEC Section 18 Annex J	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	CEC Section 18	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb
	ATEX	-40 °C up to +55 °C	II 2G Ex d IIB T4 Gb II 2D Ex tb IIIC T135 °C Db
	IECEX	-40 °C up to +55 °C	Ex d IIB T4 Gb Ex tb IIIC T135 °C Db

EX

Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	1.2	0.6
Power-on-time [%]	100	
Ambient temperature [°C]	-40 °C up to +55°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)	
Isolation class of coil	H	

Certification data	
NEC 500	FM approved 3050442
NEC 505	FM approved 3050442
NEC 506	FM approved 3050442
CEC Section 18	FM approved 3050442C
ATEX	FM14ATEX xxxxX
IECEX	IECEX FMG14.xxxxX

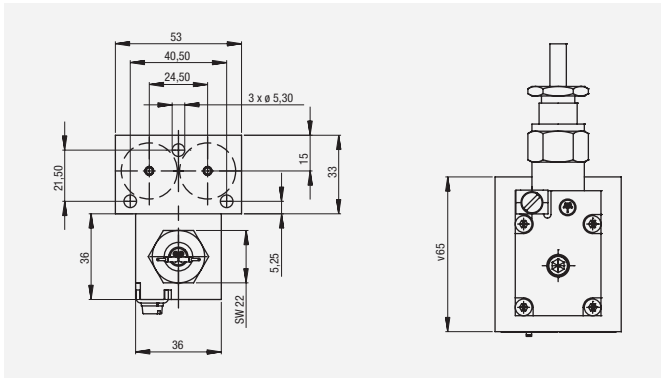
Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

TECHNICAL DETAILS

Twin solenoids Ex 05 “d”



DESCRIPTION



- 24 V DC flame proof twin solenoid
- Force: 21 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

EX

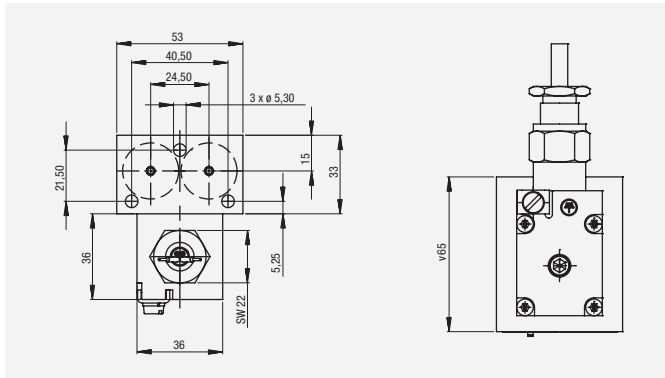
Type	Certification	Ambient temperature	Labeling
EX05	ATEX	-20 °C up to +40 °C	Ⓔ I M2 Ex d I Mb
	IECEX		Ex d I Mb
	MSHA (USA)		Ex d I
	MA (China)		Ex d I
	ANZEx		Ex d I

TECHNICAL DETAILS

Electrical data		Mechanical data	
Nominal voltage [V]	12 24	Working pressure [bar]	50
Limiting current [A]	1.33 0.63	Stroke [mm]	1.2
Power-on-time [%]	100	Manual override	yes
Ambient temperature [°C]	-20 °C up to +40°	Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//TO RoHS-conformed
Max. medium temperature [°C]	+70 °C		
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)		
Isolation class of coil	H		
Certification data			
ATEX	IBExU05ATEX1115X		
IECEX	IECEX IBE 09.0004X		
MSHA	18-NXA050003-0		
MA (China)	J2012078		
ANZEx	ANZEx 10.3019X		



Twin solenoids Ex 05 "i"



- 12 V DC flame proof and/or inherently safe twin solenoid
- Force: 12 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX05	ATEX	-20 °C up to +40 °C	⊕ I M1 Ex d ia I Ma
			⊕ I M2 Ex d ib I Mb
			⊕ I M1 Ex ia I Ma
	IECEX		Ex d ia I Ma
			Ex d ib I Mb
			Ex ia I Ma
	MA		see IECEX

EX

Electrical data	
Limited voltage [V]	12.8
Limiting current [A]	0.4
Power-on-time [%]	100
Supply circuit	UI ≤ 12,8 V; II = 1,7A
Ambient temperature [°C]	-20 °C up to +40°
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)
Isolation class of coil	H

Certification data	
ATEX	IBExU05ATEX1116X
IECEX	IECEX IBE 09.0006X
MA (China)	J2012077
GOST R	RU C-DE. 08.B.00111

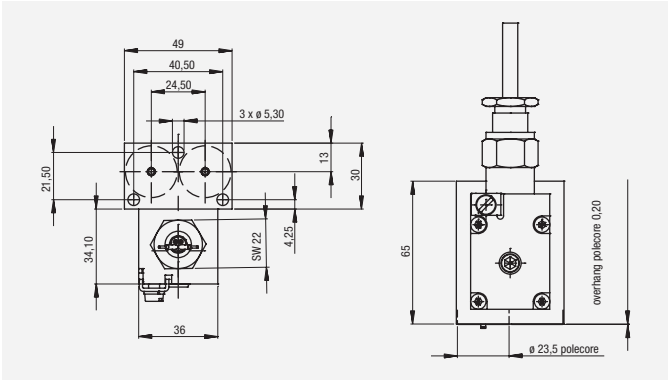
Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

TECHNICAL DETAILS

Twin solenoids Ex 06



DESCRIPTION



- 24 V DC flame proof twin solenoid
- Force: 12 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

EX

Type	Certification	Ambient temperature	Labeling
EX06	ATEX	-20 °C up to +70 °C	⊕ II 2G Ex d IIB T4 Gb
			⊕ II 2D Ex tb IIIC T135 °C Db
			⊕ I M2 Ex d I Mb
	IECEX		Ex d IIB T4 Gb
			Ex tb IIIC T135 °C Db
			Ex d I Mb

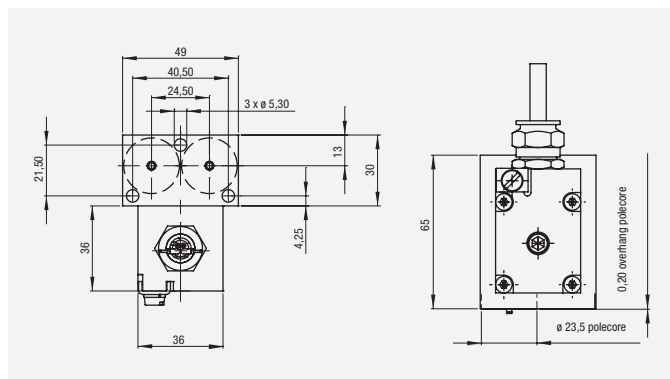
TECHNICAL DETAILS

Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	0.48	0.24
Power-on-time [%]	100	
Ambient temperature [°C]	-20 °C up to +70°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP6x (mounted)	
Isolation class of coil	H	
Certification data		
ATEX	IBExU07ATEX1089X	
IECEX	IECEX IBE 09.0005X	

Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed



Twin solenoids Ex 08



- 24 V DC flame proof twin solenoid
- Force: 21 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX08	ATEX	-25 °C up to +55 °C	Ⓔ II 2G Ex d IIB T4 Gb
			Ⓔ II 2D Ex tb IIIC T135 °C Db
	IECEx	-25 °C up to +55 °C	Ex d IIB T4 Gb
			Ex tb IIIC T135 °C Db

EX

Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	1.33	0.63
Power-on-time [%]	100	
Ambient temperature [°C]	-25 °C up to +55°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)	
Isolation class of coil	H	

Certification data	
ATEX	IBExU11ATEX1109X
IECEX	IECEx IBE 11.0016X

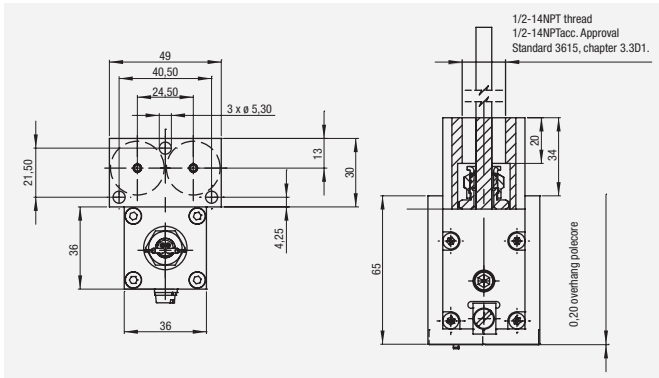
Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

TECHNICAL DETAILS

Twin solenoids Ex 11



DESCRIPTION



- 24 V DC flame proof twin solenoid
- Force: 21 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

EX

Type	Certification	Ambient temperature	Labeling
EX11	NEC 500 (USA)	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	NEC 505 (USA) NEC 506 (USA)	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db
	CEC Section 18 Annex J	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	CEC Section 18	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb
	ATEX	-40 °C up to +55 °C	II 2G Ex d IIB T4 Gb II 2D Ex tb IIIC T135 °C Db
	IECEX	-40 °C up to +55 °C	Ex d IIB T4 Gb Ex tb IIIC T135 °C Db

TECHNICAL DETAILS

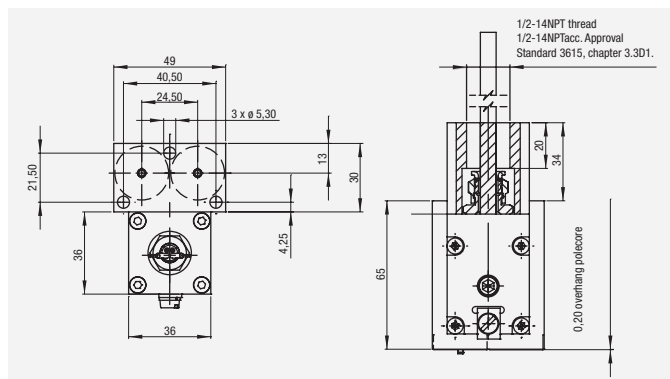
Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	1.33	0.63
Power-on-time [%]	100	
Ambient temperature [°C]	-40 °C up to +55°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)	
Isolation class of coil	H	

Certification data	
NEC 500	FM approved 3044176
NEC 505	FM approved 3046414
NEC 506	FM approved 3044176
CEC Section 18	FM approved 3047928C
ATEX	FM13ATEX 0077X
IECEX	IECEX FMG13.0029X

Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed



Twin solenoids Ex 12



- 24 V DC flame proof twin solenoids
- Force: 12 N
- Stroke: 1.2 mm
- Coil and gland area waterproof effused, housing and cable housing are zero gas volume devices

Type	Certification	Ambient temperature	Labeling
EX12	NEC 500 (USA)	-40 °C up to +70 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	NEC 505 (USA) NEC 506 (USA)	-40 °C up to +70 °C	Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db
	CEC Section 18 Annex J	-40 °C up to +70 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	CEC Section 18	-40 °C up to +70 °C	Class I, Zone 1, AEx d IIB, T4 Gb
	ATEX	-40 °C up to +70 °C	II 2G Ex d IIB T4 Gb II 2D Ex tb IIIC T135 °C Db
	IECEx	-40 °C up to +70 °C	Ex d IIB T4 Gb Ex tb IIIC T135 °C Db

Electrical data		
Nominal voltage [V]	12	24
Limiting current [A]	0.48	0.24
Power-on-time [%]	100	
Ambient temperature [°C]	-40 °C up to +70°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP6x (mounted)	
Isolation class of coil	H	

Certification data	
NEC 500	FM approved 3044176
NEC 505	FM approved 3046414
NEC 506	FM approved 3044176
CEC Section 18	FM approved 3047928C
ATEX	FM13ATEX 0077X
IECEx	IECEx FMG13.0029X

Mechanical data	
Working pressure [bar]	50
Stroke [mm]	1.2
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

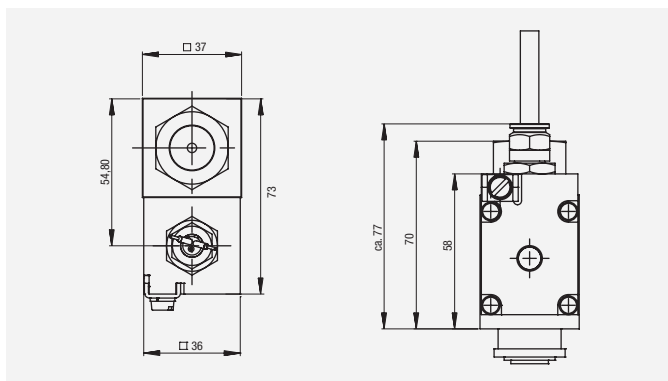


Betätigungssysteme
Actuator Systems





Single stroke solenoids Ex 02



- 12 – 205 V DC flame proof solenoid
- Available as 23 W (T4 or T4 120 °C) or 28 W T4 version
- Pressure tight tube up to 400 bar
- Force*: 110 N
- Stroke*: 4 mm
- Coil and connector area waterproof effused, housing and cable housing are zero gas volume devices.

* Characteristic, adaptor flange and stroke are arbitrary

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX02	ATEX	-35 °C up to +40 °C	Ⓜ II 2G Ex d IIB + H2 120 °C (T4) Gb Ⓜ II 2D Ex tb IIIC T120 °C Db or Ⓜ II 2G Ex d IIB +H2 T4 Gb Ⓜ II 2D Ex tb IIIC T135 °C Db

EX

Electrical data			
Nominal voltage [V]	12	205	
Limiting current [A]	23 W	1.35	0.08
	28 W	1.56	0.09
Power-on-time [%]	100		
Ambient temperature [°C]	-35 °C up to +40°		
Max. medium temperature [°C]	+70 °C		
Protection class	according to DIN EN 60529 device and connection IP67		
Isolation class of coil	H		

Certification data	
ATEX	TÜV-A12ATEX0006X

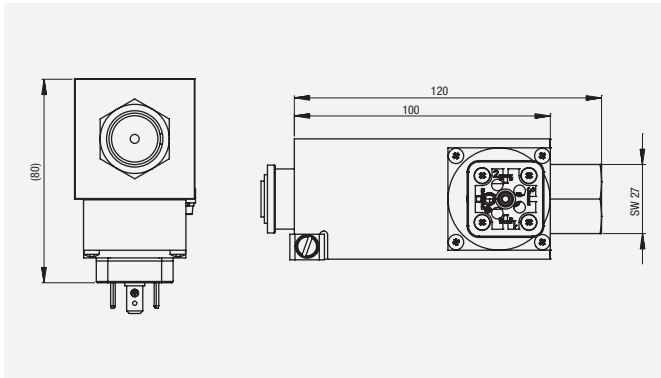
Mechanical data	
Tube diameter [mm]	19
Working pressure [bar]	up to 400
Adaptor flange	free
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

TECHNICAL DETAILS

Single stroke solenoids Ex 07



DESCRIPTION



- 12 V DC solenoid intrinsically safe with a pressure tight tube
- Force*: 100 N
- Stroke*: 1 mm
- Coil and connector area waterproof effused, housing and cable housing are zero gas volume devices

* Characteristic, adaptor flange and stroke are arbitrary

EX

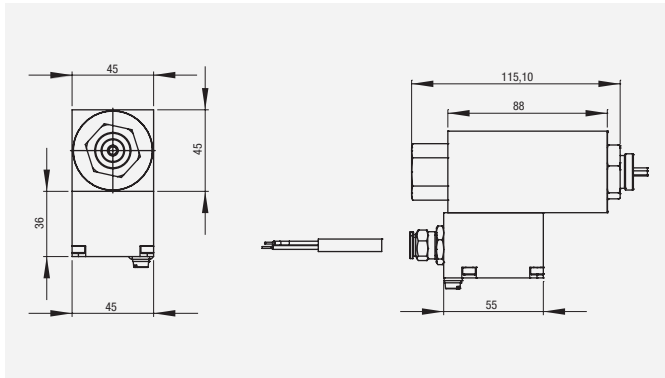
Type	Certification	Ambient temperature	Labeling
EX07	ATEX	-20 °C up to +40 °C	⊕ II 1G Ex ia IIC T6
			⊕ II 1D Ex ia IIIC T80 °C

TECHNICAL DETAILS

Electrical data		Mechanical data	
Limited voltage [V]	12	Tube diameter [mm]	22
Limiting current [A]	0.08	Working pressure [bar]	max. 300
Power-on-time [%]	100	Stroke [mm]	1
Supply circuit	Ui = 21 V DC; li = 400 mA Pi = 2 W; Li+Ci = negligible Suggestion: BXNE412002 company Georgin	Adaptor Flange	free
Ambient temperature [°C]	-20 °C up to +40°	Manual override	yes
Max. medium temperature [°C]	+70 °C	Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cu//T0 RoHS-conformed
Protection class	according to DIN EN 60529 device and connection IP65 (mounted)		
Isolation class of coil	H		
Certification data			
ATEX	IBExU 10ATEX1135		



Single stroke solenoid Ex 10



- Single stroke solenoid, flame-proof enclosed "d", dust ignition "tb" protected version
- Minimum valve volume: 161.000 mm³
- Up to 400 bar pressure tight tube
- Force*: 140 N
- Stroke*: 3 mm

* Characteristic, adaptor flange and stroke are arbitrary

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX10	ATEX	-40 °C up to +50 °C	⊕ II 2G Ex d IIC T6
			⊕ II 2D Ex tb IIIC T80 °C
		-40 °C up to +60 °C	⊕ II 2G Ex d IIC T5
			⊕ II 2D Ex tb IIIC T95 °C
		-40 °C up to +80 °C	⊕ II 2G Ex d IIC T4
			⊕ II 2D Ex tb IIIC T130 °C
	IECEX	-40 °C up to +50 °C	Ex d IIC T6 Gb
			Ex tb IIIC T80 °C Db
		-40 °C up to +60 °C	Ex d IIC T5 Gb
			Ex tb IIIC T95 °C Db
		-40 °C up to +80 °C	Ex d IIC T4 Gb
			Ex tb IIIC T130 °C Db

EX

Electrical data	
Nominal voltage [V]	DC 12..205 / AC 24..230 V
Limiting power [W]	A < 8.5 / B < 8.5
Power-on-time [%]	100
Ambient temperature [°C]	T6: Tamb = -40 °C up to +50 °C T5: Tamb = -40 °C up to +60 °C T4: Tamb = -40 °C up to +80 °C
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)
Isolation class of coil	H

Certification data	
ATEX	IBExU 11ATEX1018X
IECEX	IECEX IBE 14.0017X

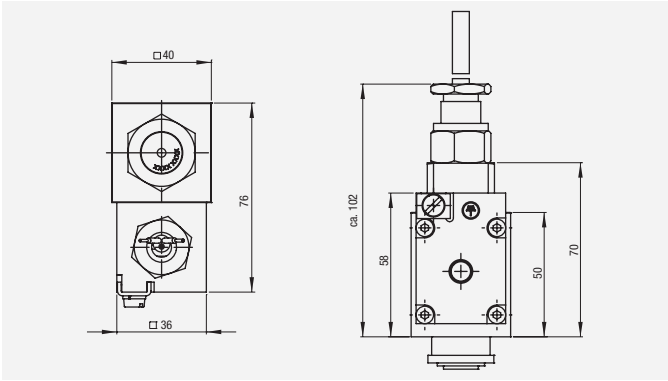
Mechanical data	
Tube diameter [mm]	22
Working pressure [bar]	max. 400
Stroke [mm]	3
Adaptor flange	free
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

TECHNICAL DETAILS

Single stroke solenoid Ex 13



DESCRIPTION



- 12, 24 V DC flame proof solenoid
- Available as 23 W
- Pressure tight tube up to 400 bar
- Force*: 110 N
- Stroke*: 4 mm
- Coil and connector area waterproof effused, housing and cable housing are zero gas volume devices.

* Characteristic, adaptor flange and stroke are arbitrary

EX

Type	Certification	Ambient temperature	Labeling
EX13	ANZEx	-20 °C up to +40 °C	Ex d I Mb

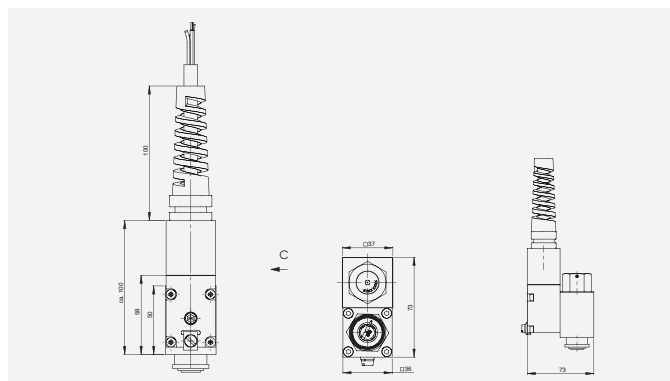
TECHNICAL DETAILS

Electrical data			
Nominal voltage [V]	12	24	
Limiting current [A]	23 W	1.35	0.67
Power-on-time [%]	100		
Ambient temperature [°C]	-20 °C up to +40°		
Max. medium temperature [°C]	+70 °C		
Protection class	according to DIN EN 60529 device and connection IP67		
Isolation class of coil	H		
Certification data			
ANZEx	ANZEx 12.4117X		

Mechanical data	
Tube diameter [mm]	19
Working pressure [bar]	up to 400
Stroke [mm]	free
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cr//T0 RoHS-conformed



Single stroke solenoids Ex 14



- 12 – 205 V DC flame proof solenoid
- Pressure tight tube up to 250 bar
- Force*: 110 N
- Stroke*: 4 mm
- Coil and connector area waterproof effused, housing and cable housing are zero gas volume devices.
- on demand with H₂

* Characteristic, adaptor flange and stroke are arbitrary

Type	Certification	Ambient temperature	Labeling
EX14	NEC 500 (USA)	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	NEC 505 (USA) NEC 506 (USA)	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db
	CEC Section 18 Annex J	-40 °C up to +55 °C	XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2
	CEC Section 18	-40 °C up to +55 °C	Class I, Zone 1, AEx d IIB, T4 Gb
	ATEX	-40 °C up to +55 °C	II 2G Ex d IIB T4 Gb II 2D Ex tb IIIC T135 °C Db
	IECEX	-40 °C up to +55 °C	Ex d IIB T4 Gb Ex tb IIIC T135 °C Db

Electrical data		
Nominal voltage [V]	12	205
Limiting current [A]	1.35	0.08
Power-on-time [%]	100	
Ambient temperature [°C]	-40 °C up to +55°	
Max. medium temperature [°C]	+70 °C	
Protection class	according to DIN EN 60529 device and connection IP67 (mounted)	
Isolation class of coil	H	

Certification data	
NEC 500 (USA)	FM approved 3046447
NEC 505 (USA)	FM approved 3046447
NEC 506	FM approved 3046447
CEC Section 18	FM approved 3046447C
ATEX	FM13ATEX 0071X
IECEX	IECEX FMG13.0027X
GOST R	in work

Mechanical data	
Tube diameter [mm]	19
Working pressure [bar]	up to 250
Adaptor flange	free
Manual override	yes
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed

DESCRIPTION

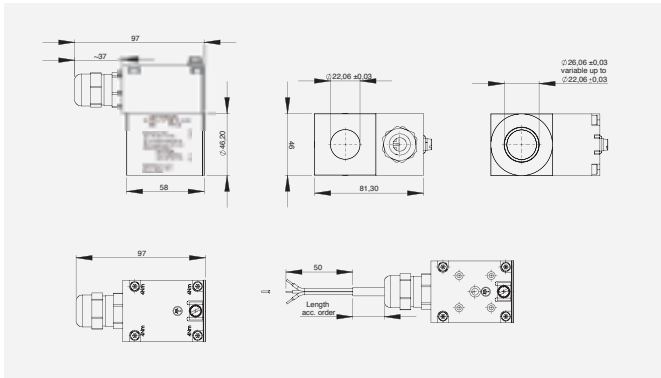
EX

TECHNICAL DETAILS

Single stroke solenoids Ex 18



DESCRIPTION



- 12 – 205 V DC flame proof solenoid an 110 – 230 V AC
- Available as 10 W (T4, T5 and T6) and 18 W (T4)
- DC Version with Ex e connection box
- Coil and connector area waterproof effused, housing and cable housing are zero gas volume devices

EX

Type	Certification	Ambient temperature	Labeling DC	AC
EX18	ATEX	-40 °C up to +70 °C	I M2 Ex e mb I Mb	I M2 Ex mb I Mb
		for Tx = T4 or T135 °C and Pn = 10 W	II 2G Ex e mb IIB Tx Gb	II 2G Ex mb IIB Tx °C Gb
		-40 °C up to +55 °C	II 2D Ex tb IIIC Tx °C Db	II 2D Ex mb IIIC Tx °C Db
		for Tx = T5 or T100 °C and Pn = 10 W		
		-40 °C up to +45 °C	Ex e mb I Mb	Ex mb I Mb
		for Tx = T6 or T85 °C and Pn = 10 W	Ex e mb IIB Tx Gb	Ex mb IIB Tx °C Gb
		-40 °C up to +60 °C	Ex tb IIIC Tx °C Db	Ex mb IIIC Tx °C Db
		for Tx = T4 or T135 °C and Pn = 18 W		
IECEx				

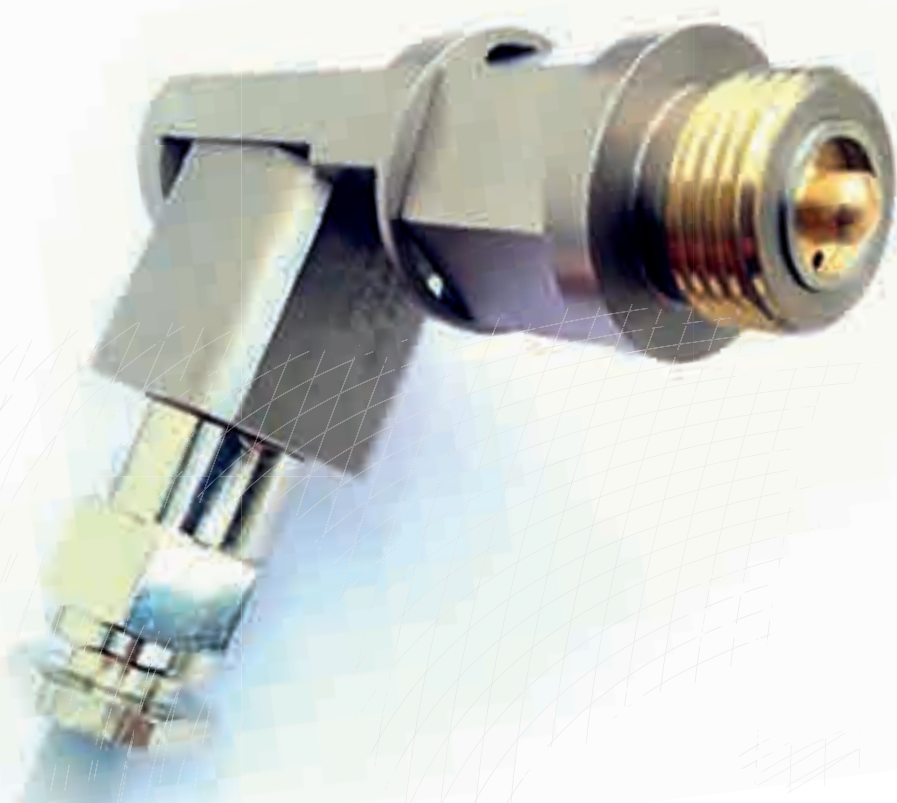
TECHNICAL DETAILS

Electrical data						
Nominal voltage [V]		12 – 110 V DC		12 – 230 V AC		
Limiting current [A]						
Type	Spannung	Widerstand	Nominalstrom	Beharrungsstrom	Schutzschaltung	Leistung
	U _N	R ₂₀	I _N	I _G		P _N
	[V DC]	[Ohm]	[A]	[A]		[W]
xx EX18 046A A012	12	16,1	0,75	0,65	Diode (36 V)	8,9
xx EX18 046A A024	24	61,8	0,39	0,34	Diode (36 V)	9,3
xx EX18 046A A048	48	252,4	0,19	0,16	Diode (75 V)	9,1
xx EX18 046A A110	110	1171,5	0,094	0,08	Diode (180 V)	10,3
xx EX18 046B A012	12	7,7	1,56	1,37	Diode (36 V)	18,8
xx EX18 046B A024	24	32,3	0,74	0,65	Diode (36 V)	17,8
xx EX18 046B A048	48	125,7	0,38	0,33	Diode (75 V)	18,3
xx EX18 046B A110	110	655,6	0,17	0,15	Diode (180 V)	18,5
	[VAC] 50/60 Hz					
xx EX18 046A B110	110	894,1	0,112	0,095	Gleichrichter	11,2
xx EX18 046A B230	230	3987	0,052	0,044	Gleichrichter	10,7
xx EX18 046B B110	110	524,4	0,19	0,167	Gleichrichter	19,1
xx EX18 046B B230	230	2251,4	0,092	0,08	Gleichrichter	19

Electrical data	
Power-on-time [%]	100
Ambient temperature [°C]	
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP65
Isolation class of coil	H

Mechanical data	
Tube diameter [mm]	22
Surface protection	iron parts zinc-plated EN 12329-Fe/Zn12//C or DIN 50979 Fe//ZnNi12//Cu//TO RoHS-conformed

Certification data	
ATEX	EPS14ATEX1744X
IECEx	IECEx EPS 14.0064X



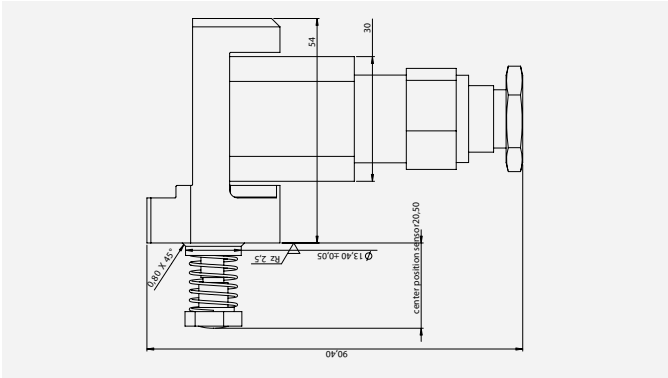
Wegaufnehmer
Displacement transducer



Displacement transducer Ex i 3H



DESCRIPTION



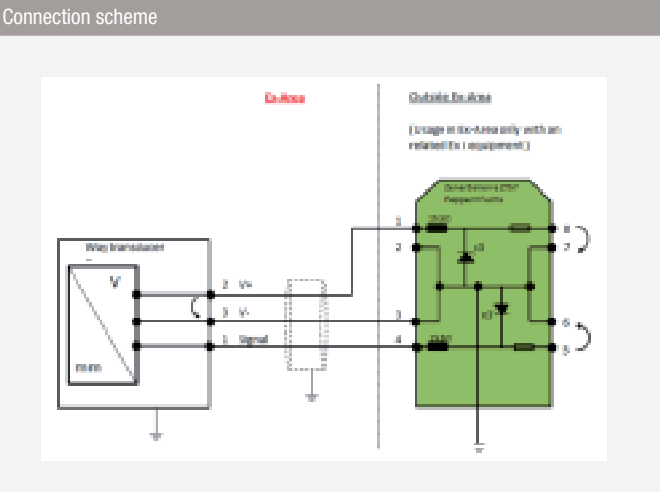
- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.
- Intrinsic safety given only by usage of a Zener Barrier Z757, Peperl+Fuchs or an appropriate Zener Barrier.

EX

Type	Certification	Ambient temperature	Labeling
EX16 Way Transducer	ATEX	-40 °C up to +70 °C	⊗ I M1 Ex ia I Ma
			⊗ II 1G Ex ia IIC T6 Ga
			⊗ II 1D Ex ia IIIC T85 °C Da
	IECEX		Ex ia I Ma
			Ex ia IIC T6 Ga
			Ex ia IIIC T85 °C Da

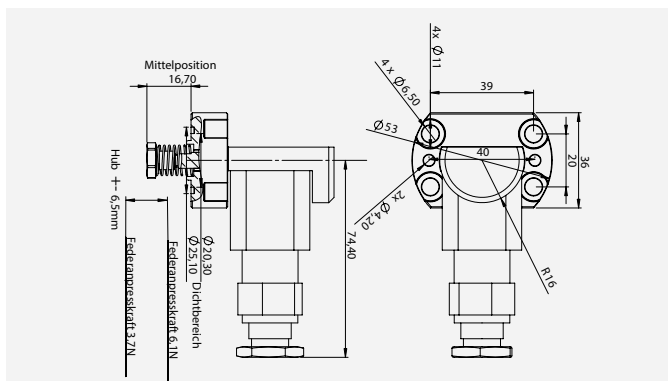
TECHNICAL DETAILS

Electrical data	
Nominal voltage [V]	max. 6
Limiting current [A]	< 0.01
Ambient temperature [°C]	-40 °C up to +70°
Supply circuit	Ui ≤ 10,5 V li ≤ 197 mA Pi ≤ 0,47 W
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm
Certification data	
ATEX	IBExU 14ATEXxxxxX
IECEX	IECEX IBE14.xxxxX





Displacement transducer Ex d 4H



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.

Type	Certification	Ambient temperature	Labeling
EX09 Way Transducer	ATEX	-30 °C up to +70 °C	Ⓜ I M 2 Ex d I Mb
			Ⓜ II 2G Ex d IIB T4 Gb
			Ⓜ II 2D Ex tb IIIC IP6X T135 °C
	IECEX		Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IIIC T135 °C Db
	ANZEx	-30 °C up to +40 °C	Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IP6X T135 °C Db

Electrical data

Nominal voltage [V]	max. 10
Limiting current [A]	max. 0.025
Ambient temperature [°C]	-30 °C up to +40°
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

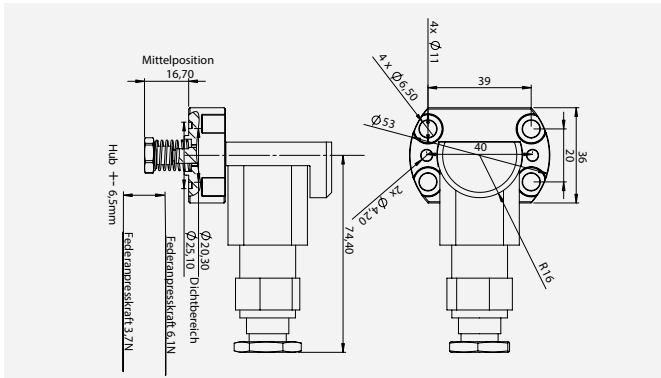
Certification data

ATEX	IBExU 09ATEX1001X
IECEX	IECEX IBE11.0004X
ANZEx	ANZEx 11.3007X

Displacement transducer Ex i 4H



DESCRIPTION



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.
- Intrinsic safety given only by usage of a Zener Barrier Z757, Pepperl+Fuchs or an appropriate Zener Barrier.

EX

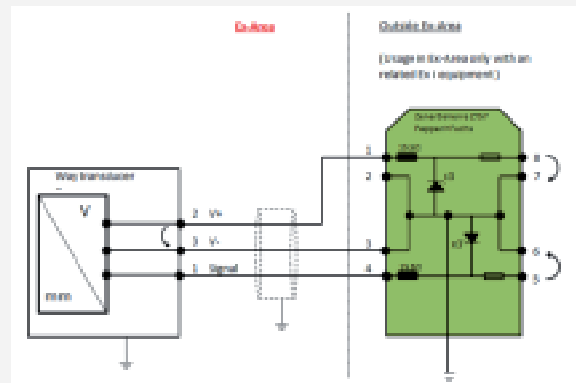
Type	Certification	Ambient temperature	Labeling
EX16 Way Transducer	ATEX	-40 °C up to +70 °C	⊗ I M1 Ex ia I Ma
			⊗ II 1G Ex ia IIC T6 Ga
			⊗ II 1D Ex ia IIIC T85 °C Da
	IECEX		Ex ia I Ma
			Ex ia IIC T6 Ga
			Ex ia IIIC T85 °C Da

TECHNICAL DETAILS

Electrical data	
Nominal voltage [V]	max. 6
Limiting current [A]	< 0.01
Ambient temperature [°C]	-40 °C up to +70°
Supply circuit	$U_i \leq 10,5 \text{ V}$ $I_i \leq 197 \text{ mA}$ $P_i \leq 0,47 \text{ W}$
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

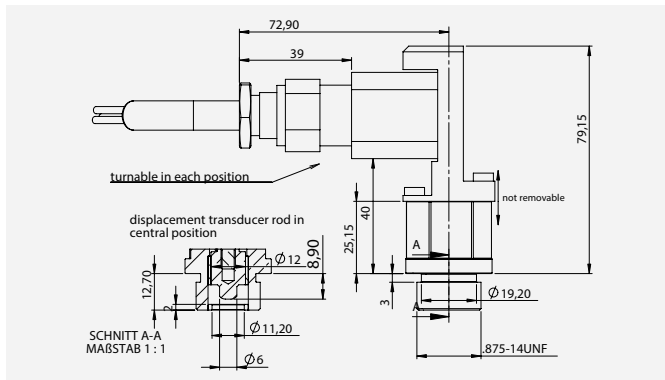
Certification data	
ATEX	IBExU 14ATEXxxxxX
IECEX	IECEX IBE14.xxxxX

Connection scheme





Displacement transducer Ex d SI1



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX09 Way Transducer	ATEX	-30 °C up to +70 °C	⊕ I M 2 Ex d I Mb
			⊕ II 2G Ex d IIB T4 Gb
			⊕ II 2D Ex tb IIIC IP6X T135 °C
	IECEX		Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IIIC T135 °C Db
	ANZEx	-30 °C up to +40 °C	Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IP6X T135 °C Db

EX

Electrical data

Nominal voltage [V]	max. 10
Limiting current [A]	max. 0.025
Ambient temperature [°C]	-30 °C up to +40°
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

Certification data

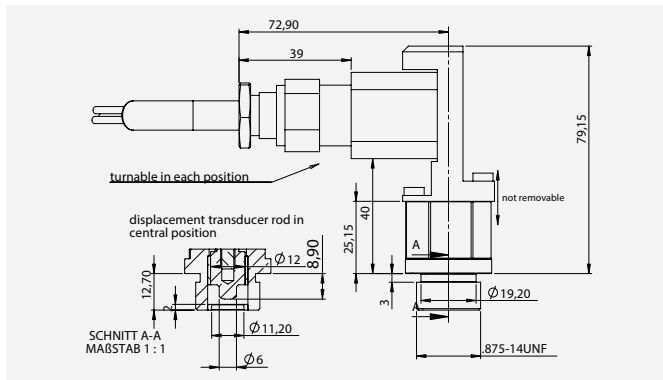
ATEX	IBExU 09ATEX1001X
IECEX	IECEX IBE11.0004X
ANZEx	ANZEx 11.3007X

TECHNICAL DETAILS

Displacement transducer Ex i SI1



DESCRIPTION



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.
- Intrinsic safety given only by usage of a Zener Barrier Z757, Peperl+Fuchs or an appropriate Zener Barrier.

EX

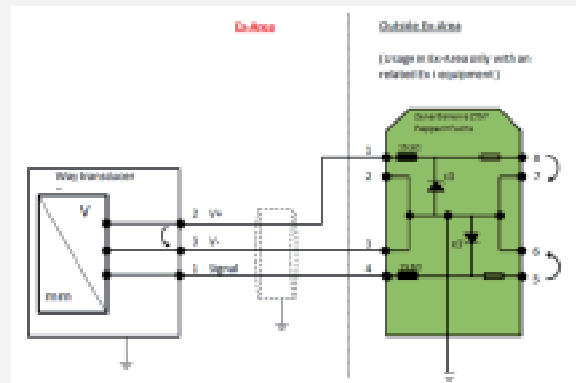
Type	Certification	Ambient temperature	Labeling
EX16 Way Transducer	ATEX	-40 °C up to +70 °C	⊕ I M1 Ex ia I Ma
			⊕ II 1G Ex ia IIC T6 Ga
			⊕ II 1D Ex ia IIIC T85 °C Da
	IECEX		Ex ia I Ma
			Ex ia IIC T6 Ga
			Ex ia IIIC T85 °C Da

TECHNICAL DETAILS

Electrical data	
Nominal voltage [V]	max. 6
Limiting current [A]	< 0.01
Ambient temperature [°C]	-40 °C up to +70°
Supply circuit	$U_i \leq 10,5 \text{ V}$ $I_i \leq 197 \text{ mA}$ $P_i \leq 0,47 \text{ W}$
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

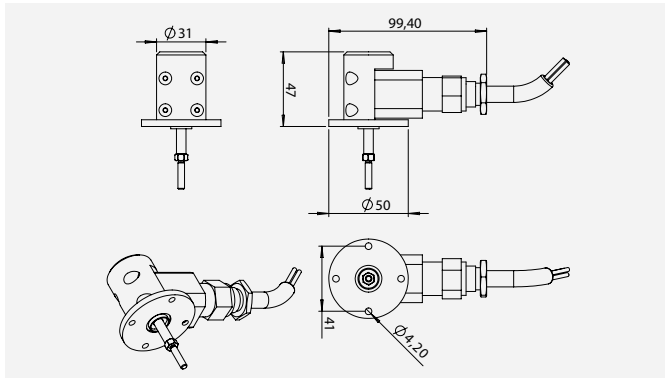
Certification data	
ATEX	IBExU 14ATEXxxxxX
IECEX	IECEX IBE14.xxxxX

Connection scheme





Displacement transducer Ex d 3HSP



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.

DESCRIPTION

Type	Certification	Ambient temperature	Labeling
EX09 Way Transducer	ATEX	-30 °C up to +70 °C	⊕ I M 2 Ex d I Mb
			⊕ II 2G Ex d IIB T4 Gb
			⊕ II 2D Ex tb IIIC IP6X T135 °C
	IECEX		Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IIIC T135 °C Db
	ANZEx	-30 °C up to +40 °C	Ex d I Mb
			Ex d IIB T4 Gb
			Ex tb IP6X T135 °C Db

EX

Electrical data

Nominal voltage [V]	max. 10
Limiting current [A]	max. 0.025
Ambient temperature [°C]	-30 °C up to +40°
Max. medium temperature [°C]	+70 °C
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

Certification data

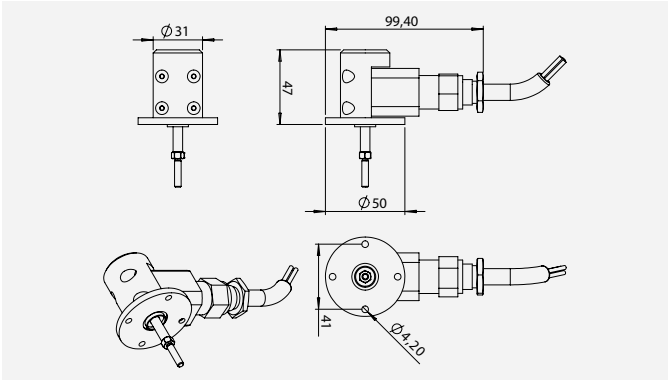
ATEX	IBExU 09ATEX1001X
IECEX	IECEX IBE11.0004X
ANZEx	ANZEx 11.3007X

TECHNICAL DETAILS

Displacement transducer Ex i 3HSP



DESCRIPTION



- The Hall effect sensor varies its output voltage in response to changes in magnetic field, caused by a moveable magnetical axis segment.
- This Hall effect sensor requires external analog circuitry to be interfaced to digital control devices.
- The pressure housing and axis must be adapted to the valve and spool requirements.
- Maximum pressure according to customer needs.
- Intrinsic safety given only by usage of a Zener Barrier Z757, Pepperl+Fuchs or an appropriate Zener Barrier.

EX

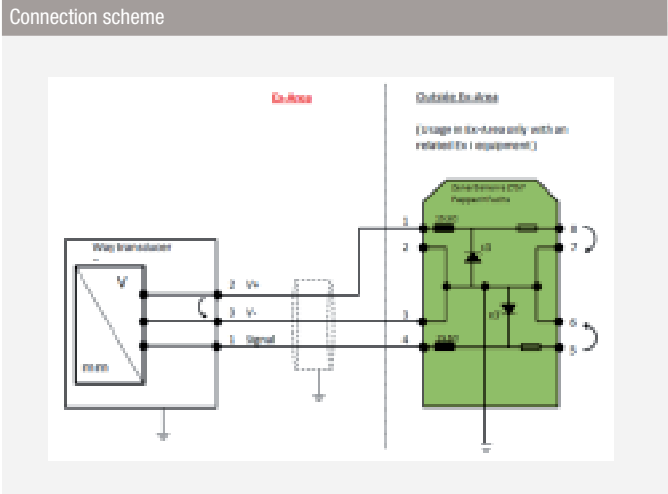
Type	Certification	Ambient temperature	Labeling
EX16 Way Transducer	ATEX	-40 °C up to +70 °C	⊕ I M1 Ex ia I Ma
			⊕ II 1G Ex ia IIC T6 Ga
			⊕ II 1D Ex ia IIIC T85 °C Da
	IECEX		Ex ia I Ma
			Ex ia IIC T6 Ga
			Ex ia IIIC T85 °C Da

TECHNICAL DETAILS

Electrical data	
Nominal voltage [V]	max. 6
Limiting current [A]	< 0.01
Ambient temperature [°C]	-40 °C up to +70°
Supply circuit	Ui ≤ 10,5 V li ≤ 197 mA Pi ≤ 0,47 W
Protection class	according to DIN EN 60529 device and connection IP6X (mounted)
Surface protection	nickel-plated
Hub	+/- 10 mm

Certification data	
ATEX	IBExU 14ATEXxxxxX
IECEX	IECEX IBE14.xxxxX

Connection scheme



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