IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BAS 09.0012X issue No.:7
Status:	Current
Date of Issue:	2016-10-21 Page 1 of 4
Applicant:	**Bifold Fluidpower Limited** Broadgate Oldham Broadway Business Park Chadderton **United Kingdom**
Equipment: *Optional accessory:*	**Type 'FP' Solenoid**
Type of Protection:	**Increased Safety, Encapsulation**
Marking:	**Ex emb IIC T* Gb Tamb -25°C to +**°C (For * and ** see below)** **Ex tD A21 IIIC T120°C Db** **Only solenoids with a 126°C thermal fuse will be rated as T4.**
Approved for issue on behalf of the IECEx Certification Body:	R S Sinclair
Position:	Technical Manager
Signature: *(for printed version)*	
Date:	21/10/16

Certificate history:
Issue No. 7 (2016-10-21)
Issue No. 6 (2015-1-27)
Issue No. 5 (2014-3-20)
Issue No. 4 (2013-9-12)
Issue No. 3 (2013-2-21)
Issue No. 2 (2012-4-17)
Issue No. 1 (2011-9-20)
Issue No. 0 (2009-3-26)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom

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Manufacturer: **Bifold Fluidpower Limited**
Broadgate
Oldham Broadway Business Park
Chadderton
Oldham
Greater Manchester
OL9 9XA
United Kingdom

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-18 : 2004 Edition: 2.0	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
GB/BAS/ExTR09.0026/00
GB/BAS/ExTR11.0215/00
GB/BAS/ExTR12.0106/00
GB/BAS/ExTR13.0049/00
GB/BAS/ExTR13.0172/00
GB/BAS/ExTR14.0055/00
GB/BAS/ExTR16.0274/00

Quality Assessment Report:

GB/BAS/QAR07.0038/06

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The Type 24 solenoid consists of an aluminium housing and cover. The Type 74 Solenoid consists of a stainless steel main housing and cover.

Both the Type 24 and 74 incorporate a female threaded hole for cable gland entry, an optional bracket lug and an M4 external earth mounting (including washers). The threaded cable gland entry may be M20 x 1.5 or ½"NPT 14TPI. When the NPT option is used the thread size is to be marked on the housing face.

The solenoid is rated up to 50VDC. The Temperature Classification, Power Level and maximum ambient temperature are shown in the table below and the apparatus is marked in accordance with these parameters.

Equipment Marking Variations			
Temperature Classification (T*)	Maximum ambient temperature (**°C)	Power Level Limit (Watts)	Thermal Fuse Limit (°C)
T3	+55	≤ 3W	+146
T3	+45	≤ 4.5W	+146
T3	+40	≤ 6.8W	+146
T4	+50	≤ 4W	+126

See Annex for full description.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The supply circuit shall be fitted with a fuse capable of meeting a 1500Amp short circuit current.
2. Termination to the Weidmuller MK3 terminal block shall be in accordance with Sira Certificate IECEx SIR05.0036U.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 7.1

To change the name of the electrical Apparatus to: Type 24 and 74 Solenoid.

Variation 7.2

To introduce a new variant rated at 4.5 Watts or below, in an ambient of up to +45°C with a T3 temperature classification.

ExTR: GB/BAS/ExTR16.0274/00 File Reference: **16/0677**

Annex: IECEx BAS 09.0012X Annex Issue 2.pdf

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SK17 9RZ
United Kingdom

The Type 24 solenoid consists of an aluminium housing and cover. The Type 74 Solenoid consists of a stainless steel main housing and cover.
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The top of the main housing is fitted with a cover and a rubber O-ring seal is fitted between these two components. The lid is mounted to the main housing by four of M4 socket head cap screws. The lid incorporates two types of mechanical override facility, Spring Return Manual Override and Detente Manual Override. The lid has a groove around its collar housing a spring clip which retains the stainless steel certification label. The base of the main housing is fitted with a stainless steel adaptor bush. A rubber o-ring seal and stainless steel washer between these two components maintains the IP rating of the enclosure. The exposed/connection end of the adaptor bush varies to suit different hydraulic/pneumatic valve mountings. The adaptor bush is also fitted with a clear silicone protective tube.

Within the lower internal area of the main housing there is the solenoid assembly. The solenoid assembly consists of a magnetic iron coil holder and soft magnetic iron armature. The coil holder and armature surround the adjusting rod (including stainless steel spring) and coil assembly. As the adjusting rod passes through the bore of the adaptor bush there is a stainless steel retaining washer and rubber o-ring seal. The adjusting rod is secured into the armature by a stainless steel socket screw, nut and spring washer.

The coil assembly consists of a moulded glass filled nylon bobbin that is wound with copper wire and insulation tape, with entry tag for supply lead wire connection. The coil winding incorporates a diode and a 146°C or 126°C thermal fuse. The assembled bobbin is then fully encapsulated in glass filled nylon with the supply leads ready for termination.

The coil assembly is seated into the holder. Within the upper area of the main housing there is a terminal plate assembly. The terminal plate assembly consists of a stainless steel circular plate that has two mounting holes, a central clearance hole for the adjusting rod fixing and a raised tab. This plate is fitted with a Weidmuller MK3 terminal block IECEx SIR05.0036U with 2 way entry. The plate is also fitted with a stainless steel M4 internal earth mounting (including washers). The terminal plate assembly is mounted on two stainless steel support pillars with nylon retaining sleeves that vary in length depending on the override option of the solenoid. The plate assembly is secured through the support pillars into the coil holder by two stainless steel M3 (variable length) cheese head screws.

When required, the Solenoid may be fitted with 2 bonded magnets in the coil housing to provide a 'Latch Energised' option or 2 bonded magnets on the terminal plate to provide the 'Tamper Proof' option.