



[1] **EU – TYPE EXAMINATION CERTIFICATE**

[2] Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU.

[3] EU-Type Examination Certificate Number: **FIDI 22 ATEX 0062X** Issue: **1**

[4] Product: **Limit switch box**

Type: **Guardbox – GI series**

[5] Manufacturer: **Eisenbau Srl**

[6] Address: **Viale Europa 39, 20047 Cusago (MI) - Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

[8] FIDITAS Ltd., Notified Body number 2829 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II of the Directive.

The examination and test results are recorded in confidential Report No: **FIDI 22 CR 065**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018

EN 60079-11:2012

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

[11] This EU-Type Examination Certificate relates only to the design, examination and test of the specified product in accordance with Annex III. Further requirements of the Directive apply to the manufacturing process and supply of this products. These are not covered by this certificate.

[12] The marking of the product shall include the following:



II 1G Ex ia IIB/IIC T6...T1 Ga or II 2G Ex ia IIB/IIC T6...T1 Gb
II 1D Ex ia IIIC T135°C Da

Our ref.: 20.CRT.019

Date: 02.05.2023



FIDITAS Ltd.
Certification department

Approved:


Marino Kelava, M.E.Eng.



[13]

SCHEDULE

[14] **EU - TYPE EXAMINATION CERTIFICATE No.:** **FIDI 22 ATEX 0062X**

[15] **Description of product**

Guardbox Limit switch boxes are electromechanical devices for monitoring the operation of industrial valves in plants. The Guardbox devices are used to control the position of the valve and provide electrical feedback signal of valve status to plant control systems. They are equipped with visible position indicator that represents a true indication of valve position.

Marking of Ex Equipment: Gas group, temperature class, maximum and minimum ambient temperature depend on device configuration type i.e., on type of installed components.

Ambient temperature range is: $T_{amb} = -60^{\circ}\text{C}$ to 105°C and it is reduced according to ambient temperature range of installed components.

Connection for limit switch box shall be provided with cable of thermal stability not less than maximum ambient temperature of particular configuration + 13K.

Intrinsically safe circuits:

Maximum of 6 independent intrinsically safe circuits inside + extra poles for externally installed intrinsically safe equipment:

Total number of poles on PCB is 24 + 6.

Possible versions of terminal configurations are: 2 pole terminals, 3 pole terminals, double level 2+2 pole terminals and double level 3+3 pole terminals.

Extra terminal blocks (up to 6 poles total) for connection of externally installed intrinsically safe equipment (e.g., an external solenoids) with following parameters $U_i = 30\text{V}$, $I_i = 250\text{mA}$.

List of installed certified components:

Switch series	Manufacturer	ATEX certificate
Cylindrical inductive proximity sensors of types NC..and NJ...	Pepperl&Fuchs	PTB 00 ATEX 2048X
SN-type proximity sensors series NJ..and SJ...	Pepperl&Fuchs	PTB 00 ATEX 2049X
Slot-type proximity sensors series SJ..and SC...	Pepperl&Fuchs	PTB 99 ATEX 2219X
Cuboidal inductive proximity sensors series FJ..., NB..., NC..., NJ...	Pepperl&Fuchs	PTB 00 ATEX 2032X
Valve position sensors type NCN.-.....N.... and PL.-F25.-N4...	Pepperl&Fuchs	TUV 99 ATEX 1479X
Inductive proximity switch series N*50**	IFM electronics GmbH	BVS 04 ATEX E091X
Inductive proximity switch series N7S21A (I7S23,5-N/1G/1D) I7S2002-N; I7S23,5N; I7R2010-N***; I7R2010-NL***; I7R2015-NL***	IFM electronics GmbH	BVS 08 ATEXE026

DM



Transmitter/encoder type	Manufacturer	Description	ATEX certificate
ST-0907-V2-A ST-1509-V1-A ST-1910-V1-A	ZETTEX	Programmable encoder	FTZU09ATEX0221X
5333D, 5343B	PR electronics	2-wire programmable transmitter	DEKRA 20 ATEX 0105X
5335D, 5337D	PR electronics	2-wire transmitter with Hart protocol	DEKRA 20 ATEX 0108X
5350B	PR electronics	Profibus PA/Foundation Fieldbus Transmitter	KEMA 02ATEX1318
5437D	PR electronics	2-wire transmitter with Hart protocol	DEKRA 16ATEX0047X
TTH200, TTH300	ABB	Measuring transducer	PTB 20 ATEX 2008X
T15.H-AI	WIKA	Temperature transmitter	BVS 19 ATEX E 020 X
T32.1*.0IS	WIKA	Temperature transmitter	BVS 08 ATEX E019X
2W2	Camille Bauer	Transmitter for angular position	ZELM 03 ATEX 0123
3W2	Camille Bauer	Transmitter for angular position	ZELM 10 ATEX 0427X

Surge protection device	Manufacturer	Description	ATEX certificate
SURGETRAB S-PT-EX..., S-PT-2XEX... and S-PT-4-EX...	Phoenix Contact	Surge protection device	KEMA 09 ATEX 0028X

List of simple apparatus:

Potentiometer	Manufacturer	Characteristic	Description
Potentiometer 640 Series	Honeywell	Model with Power Rating $\leq 2W$ (70°C)	Works with transmitters listed in this certificate or without transmitter with these input parameters: $U_i = 32 V$ $I_i = 30 mA$ $P_i = 100 mW$ $C_i = 0$ $L_i = 0$
Potentiometer WAL 305 Series	Contelec	Model with Power Rating $\leq 2W$ (70°C)	
Potentiometer NP32HS	Uni-Automation	Model with Power Rating $\leq 2W$ (70°C)	
Potentiometer 157 - Series	Vishay Spectrol	Model with Power Rating $\leq 1W$ (40°C)	
Potentiometer NP24HS	Uni-Automation	Model with Power Rating $\leq 0.5W$ (70°C)	

DN



Switch Type	Switch series & Contact type		Max nominal switching voltage/ current	Manufacturer	Equipment Category	Intrinsically safe input parameters for dry contact simple apparatus
	Electromechanical/ Micromechanical switch SPDT/DPDT gold plated or Reed switch	Configuration series				
SPDT*	D41 series	ES series	0,1A-250Vac	Cherry	2G	Ui: 16V Ii: 76mA Pi: 242mW
	DC3 series (sealed)	ES series				
	V3D series	ES series	0,1A-250Vac	Crouzet		
	V3 series	ES series	0,1A-30Vdc			
	V15W series (sealed IP67)	ES series	0,1A-250Vac	Honeywell		
	SM series	ES series	0,1A-30Vdc			
DPDT**	DB3 series	ED series	0,1A-250Vac	Cherry		
SPDT	Reed switch sealed glass contact	MS series	0,1A-250Vac 1A-24Vdc	As applicable or Eisenbau	1G or 2G	
DPDT	Reed switch sealed glass contact	MD series				

* SPDT is single-pole double-throw switch type.
* DPDT is double-pole double-throw switch type.

EORL Resistor	Manufacturer	Ci [nF]	Li [μH]	Intrinsically safe input parameters	Min Ambient temperature [°C]	Max Ambient temperature for temperature class [°C]		
						T6	T5	T4
MRS25	Vishay Components	0	0	Ui : 16V Ii: 76mA Pi: 242mW	-40	70	110	120

List of possible device configurations:

There are many configurations possible but there is total 6 independent intrinsically safe circuits possible (total of 6 components) if 3 poles per circuit used or total 4 independent safe circuits possible if 4 poles per circuit used.

Any combination between 2 poles, 3 poles and 4 poles circuits are possible.

Total number of poles on PCB is 24 and in some configurations some poles are not used.

Extra terminal blocks (up to 6 poles total) for connection of externally installed intrinsically safe equipment (e.g., an external solenoids) is possible.

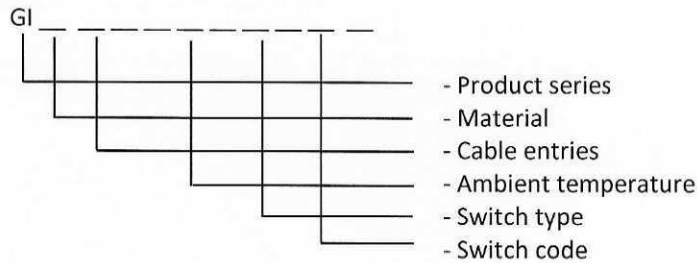


Maximum number of installed components of the same kind is:

n° -> means "quantity of"

- n°6 - Electromechanical SPDT
- n°4 - Electromechanical DPDT
- n°6 - Magnetic reed switch SPDT
- n°4 - Magnetic reed switch DPDT
- n°4 - EORL resistors circuits (loop terminations)
- n°6 - inductive proximity sensors of any kind
- n°1 - potentiometers without installed transmitter
- n°2 - potentiometers with transmitters
- n°2 - encoders
- n°1 - surge protector

Marking:



[16] Confidential Report No. FIDI 22 CR 065

[16.1] Routine testing

None

[17] Specific Conditions of Use

Appropriate method of installation, maintenance and operation, should prevent accumulation of static charge on the device.

[18] Essential Health and Safety Requirements

Covered by the conformity with harmonized standards listed under item 9.

[19] Drawings and Documents

Title:	Drawing No.:	Rev. level:	Date:
IOM (Installation, operating & maintenance manual)	IOM0101	02	20.07.2015
GI – Aluminum body	EC-0101003	00	30.10.2014
GI - Stainless steel body	EC-0101004	00	30.10.2014
GI – Aluminum cover	EC-0102003	00	30.10.2014

SR



Title:	Drawing No.:	Rev. level:	Date:
GI – Aluminum blind cover	EC-0102005	00	30.10.2014
GI - Stainless steel cover	EC-0102004	00	30.10.2014
GI - Stainless steel blind cover	EC-0102006	00	30.10.2014
GI – standard shaft	EC-0104002	00	04.09.2014
GI – blind cover shaft	EC-0104004	00	04.09.2014
GI – PCB base support	EC-0106001	00	16.12.2014
GI – PCB upper support	EC-0106002	00	17.12.2014
GI – Body gasket	EC-0107001	00	24.09.2014
GI – Shaft gasket	EC-0107003	00	18.12.2014
GI – External adhesive label	EC-0108003	00	08.01.2015
GI – Internal adhesive label	EC-0108004	00	08.01.2015
GI- Limit switch box assembly	EC-0120007	01	26.06.2015
GI- Limit switch box assembly (blind cover)	EC-0120008	01	26.06.2015
Standard circuit board	EC-0106001	04	12.10.2020
Standard circuit board/TOP	EC-0106002	01	25.11.2020
Printed circuit board + 6 extra poles	EC-0106042	00	30.10.2020
PCB with 24 poles + 6 Extra poles	EC-0106043	00	25.11.2020
Printed circuit board for KINAX transmitter	EC-0106044	00	25.11.2020
Printed circuit board for DPDT switches	EC-0106046	00	25.11.2020
Vertical Printed circuit board for DPDT switches	EC-0106047	00	26.11.2020
PCB for resistor network applications	EC-0106073	00	27.12.2021
PCB Circuit board with N°4 SPDT proxy magnetic switches with EOL resistors + N°2 extra poles	EC-0150131	01	07.03.2022
GI - Limit switch box assembly configuration ES-ED type	EC-0120015	00	23.12.2021
GI - Limit switch box assembly configuration MS-MD type	EC-0120016	00	2021-12-23
GI - Limit switch box assembly configuration PN type	EC-0120017	00	23.12.2021
GI - Limit switch box assembly configuration PX-PY type	EC-0120018	00	23.12.2021
GI - Limit switch box assembly configuration TX-TY type	EC-0120019	00	23.12.2021
JB - Junction box assembly configuration JB-type	EC-0120021	00	23.12.2021
List of installed equipment	LIE	00	06.02.2023