GEMÜ 4241

Combi switchbox

Features

- Position feedback via 2-wire proximity switch (NAMUR)
- Adjustable switch point tolerances using locking levers
- Can be fitted to GEMÜ valves or third-party actuators
- Integrated manual override
- Explosion protection for zone 1 and 21

Description

The GEMÜ 4241 combi switchbox is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and fed back via the play-free and non-positive mounting by means of a 2-wire proximity switch (NAMUR). Integrated pilot valves enable direct activation of the process valve connected to them.

Technical specifications

- **Ambient temperature:** 0 to 50 °C
- **Linear measuring range:** 5 to 75 mm
- **Radial measuring range:** 0to 90°
- **Flow rate:** 250 Nl/min
- **Supply voltages:** 8 V DC
- **Protection class:** IP 65. IP 67
- **Electrical connection types:** Cable glands
- **Switch types:** 2-wire proximity switch (NAMUR)
- **Conformities:** ATEX | EAC | IECEx

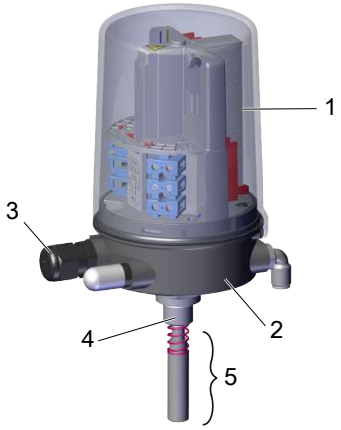
Technical data depends on the respective configuration

further information
webcode: GW-4241

Product line

			
	GEMÜ 4240	**GEMÜ 4241**	**GEMÜ 4242**
Linear measuring range	5 to 75 mm	5 to 75 mm	2 to 75 mm
Radial measuring range	0 - 90°	0 - 90°	0 - 90°
Ambient temperature	0 to 60 °C	0 to 50 °C	0 to 60 °C
Flow rate			
14 Nl/min	-	-	●
145 Nl/min	-	-	●
23 Nl/min	-	-	●
250 Nl/min	●	●	●
Electrical connection types			
Cable glands	●	●	-
Connectors	-	-	●
Switch types			
Microswitch	●	-	-
2-wire proximity switch (NAMUR)	●	●	-
3-wire proximity switch	●	-	-
Communication modes			
ASi-5	-	-	●
AS-Interface	-	-	●
DeviceNet	-	-	●
IO-Link	-	-	●
Supply voltage			
24 V DC	●	-	●
250 V AC	●	-	-
8 V DC	●	●	-
Conformities			
ATEX	-	●	●
EAC	-	●	●
ETL Listed C US	-	-	●
Functional safety	-	-	●
IECEx	-	●	●

Product description



Item	Name	Materials
1	Housing cover	PC
2	Housing base	PPS
3	Electrical connection	SS, PP
4	Adapter piece	SS
5	Mounting kit, valve specific	SS, PP
	Seals	NBR

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.

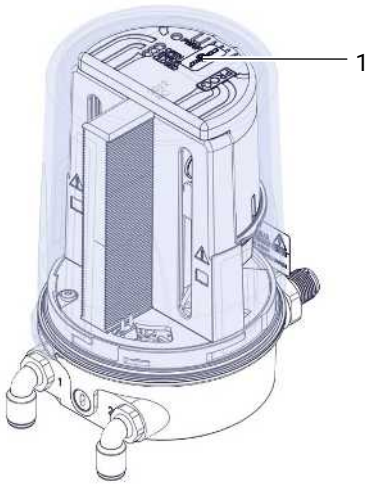
Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit:
www.gemu-group.com/conexo

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).

Installing the RFID chip (1)



Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Note: A valve specific mounting kit is required for assembly. For designing the mounting kit, the valve type, nominal size, control function and actuator size must be stated.

Order codes

1 Type	Code
Combi switchbox	4241

2 Fieldbus	Code
Without	000

3 Accessory	Code
Accessory	Z

4 Housing material	Code
PPS base, PC cover	01

5 Action	Code
Single acting, with manual override	01
Double acting, with manual override	02
Single acting, without manual override	E1

6 Electrical connection	Code
M16 Skintop cable gland; connection diagram "N"	03

7 Pneumatic connection	Code
G1/8 connection thread	01
Air supply 6 mm angled connection, exhaust air 6 mm angled connection	04
Air supply 6 mm T-connection, exhaust air 6 mm angled connection	05

7 Pneumatic connection	Code
G1/8 connection thread (for IP67 or piped air outlet)	E1
Air supply 6 mm angled connection, exhaust air 6 mm angled connection (for IP67 or piped air outlet)	E4
Air supply 6 mm T-connection, exhaust air 6 mm angled connection (for IP67 or piped air outlet)	E5

8 Switch	Code
Proximity switch, 2-wire, NAMUR P+F, NJ1,5-6,5-15-N-Y180094	N1

9 Connection diagram	Code
NAMUR terminals OPEN/CLOSED 8 V NAMUR sensor; 24 V DC pilot valve	N1
NAMUR terminals OPEN/CLOSED 8 V NAMUR sensor; 12 V DC pilot valve	N2

10 Travel sensor version	Code
Potentiometer, 75 mm length	075

11 Special version	Code
ATEX (2014/34/EU), IECEx	X

Order example

Ordering option	Code	Description
1 Type	4241	Combi switchbox
2 Fieldbus	000	Without
3 Accessory	Z	Accessory
4 Housing material	01	PPS base, PC cover
5 Action	01	Single acting, with manual override
6 Electrical connection	03	M16 Skintop cable gland; connection diagram "N"
7 Pneumatic connection	E1	G1/8 connection thread (for IP67 or piped air outlet)
8 Switch	N1	Proximity switch, 2-wire, NAMUR P+F, NJ1,5-6,5-15-N-Y180094
9 Connection diagram	N1	NAMUR terminals OPEN/CLOSED 8 V NAMUR sensor; 24 V DC pilot valve
10 Travel sensor version	075	Potentiometer, 75 mm length
11 Special version	X	ATEX (2014/34/EU), IECEx

Technical data

Medium

Working medium: Quality classes to DIN ISO 8573-1

Dust content: Class 3, max. particle size 5 µm, max. particle density 5 mg/m³

Pressure dew point:
Size 1
Class 3, max. pressure dew point -20 °C
Size 2
Class 4, max. pressure dew point +3 °C

Oil content:
Size 1
Class 3, max. oil concentration 1 mg/m³
Size 2
Class 5, max. oil concentration 25 mg/m³

Temperature

Ambient temperature: 0 to 50 °C

Media temperature: 0 — 50 °C

Storage temperature: 0 — 40 °C

Pressure

Operating pressure: 2 to 7 bar

Flow rate: 250 Nl/min
The applied pressure must not exceed the maximum control pressure of the process valve.

Product compliance

Machinery Directive: 2006/42/EC

Explosion protection: ATEX (2014/34/EU)
IECEx

ATEX marking: Gas: Ⓔx II 2G Ex ib IIB T4 Gb
Dust: Ⓔx II 2D Ex ib IIIC T120°C Db
EC type examination certificate: IBExU17ATEX 1160 X
Notified body: IBExU, No. 0637

IECEx marking: Gas: Ⓔx Ex ib IIB T4 Gb
Dust: Ⓔx Ex IIIC T120°C Db
Certificate: IECEx IBE 19.0017 X

Mechanical data

Installation position: Optional

Weight: 420 g

Protection class: IP 65 acc. to EN 60529
IP 67 acc. to EN 60529, is reached with piped air outlet

Stroke:	5 to 75 mm

Electrical data

2-wire proximity switch (NAMUR)

Supply voltage: 8 V DC

Current consumption: ≤ 0.1 mA (damped)
≥ 3 mA (undamped)

Electrical connection type: Connection thread: M16 x 1.5, WAF 19
Cable diameter: 4.5 to 10 mm
Recommended wire cross section: 0.75 mm² x 8 cables

Pilot valve

Rated voltage: 24 V DC ±10 % (code N1)
12 V DC -5/+10 % (code N2)

Rated power: 0.5 W

Resistance: 1152 Ω ± 5 % (code N1)
288 Ω ± 5 % (code N2)

Duty cycle: Continuous duty

Intrinsically safe characteristic values

Proximity switch

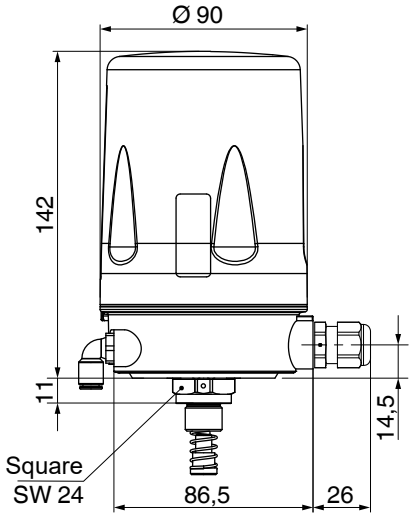
Proximity switch: Ui = 16 V
Ii = 52 mA
Pi = 169 mW
Li = 50 µH
Ci = 30 nF

Pilot valve

Pilot valve, code N1: Ui = 30 V
Ii = 330 mA
Li negligible
Ci negligible

Pilot valve, code N2: Ui = 30 V
Ii = 330 mA
Li negligible
Ci negligible

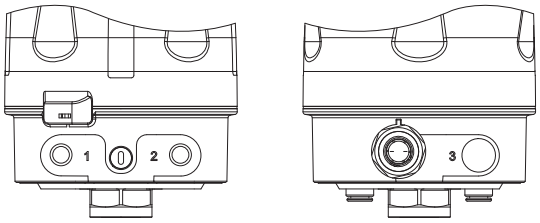
Dimensions



Dimensions in mm

Pneumatic connection

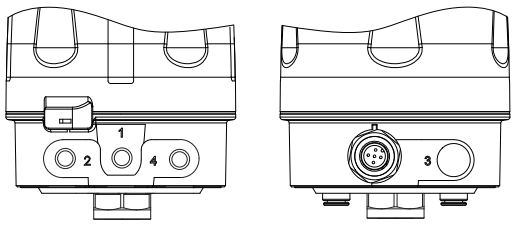
Standard, single acting



Connection	Designation	Connection size
1	Air supply connection P	G 1/8
2	Working connection for process valve A1	G 1/8
3	Venting connection R with silencer (integrated housing ventilation)	G 1/8 [1)]

1) only relevant for exhaust air duct and/or increase of protection class

Standard, double acting



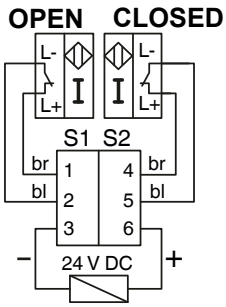
Connection	Designation	Connection size
1	Air supply connection P	G 1/8
2	Working connection for process valve A1	G 1/8
3	Venting connection R with silencer (integrated housing ventilation)	G 1/8 [1)]
4	Working connection for process valve A2	G 1/8

1) only relevant for exhaust air duct and/or increase of protection class

Electrical connection

24 V DC pilot valve, ordering option Connection diagram, code N1

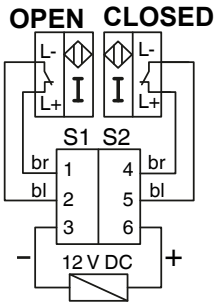
Connection diagram



Pin	Signal name
1	L+, OPEN switch
2	L-, OPEN switch
3	GND, solenoid valve actuation
4	L+, CLOSED switch
5	L-, CLOSED switch
6	24 V DC, solenoid valve actuation

12 V DC pilot valve, ordering option Connection diagram, code N2

Connection diagram



Pin	Signal name
1	L+, switch S1 OPEN
2	L-, switch S1 OPEN
3	GND, control input
4	L+, switch S2 CLOSED
5	L-, switch S2 CLOSED
6	12 V DC, control input

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