

SRD991-_____ - Z Intelligent Positioner stainless steel (316L)

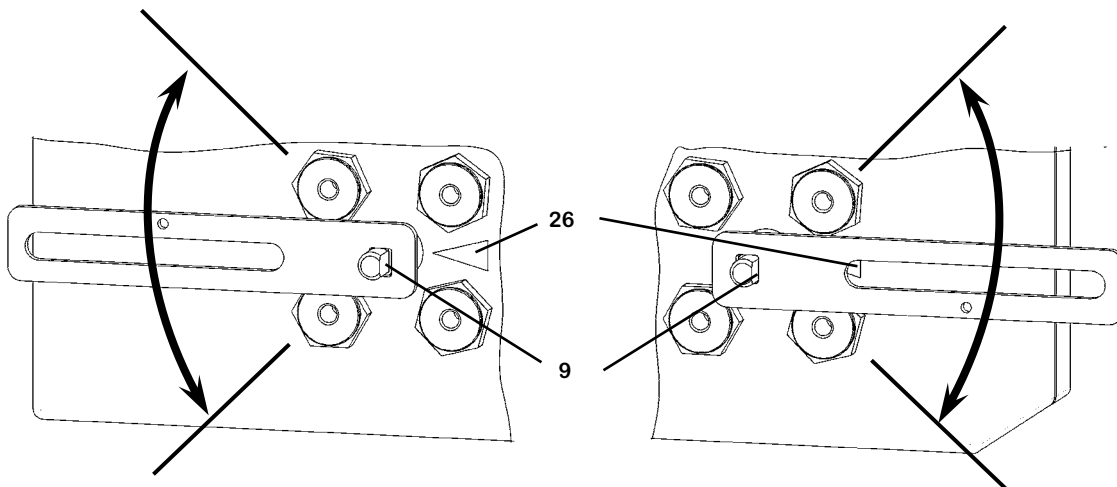
These instructions are to be used as a guide for quick start-up.

Versions with LCD, Amplifier Spoolvalve



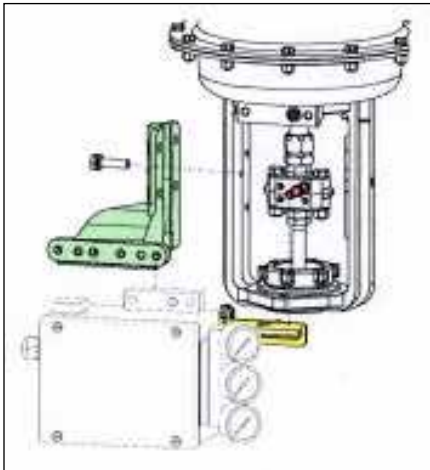
1. MOUNTING TO ACTUATORS

During operation the flat side of the spindle 9 on the back of the positioner must always point towards the arrow 26. The working angle around this position is $\pm 45^\circ$.

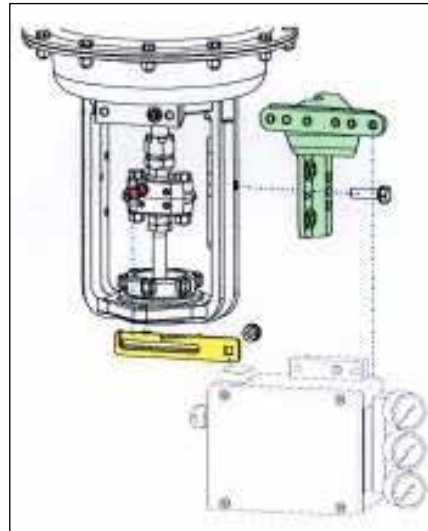


Mounting To Linear Actuators

NAMUR Mounting - left hand -

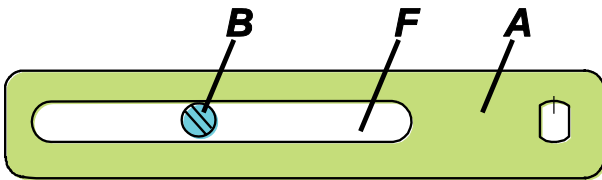


NAMUR Mounting - right hand

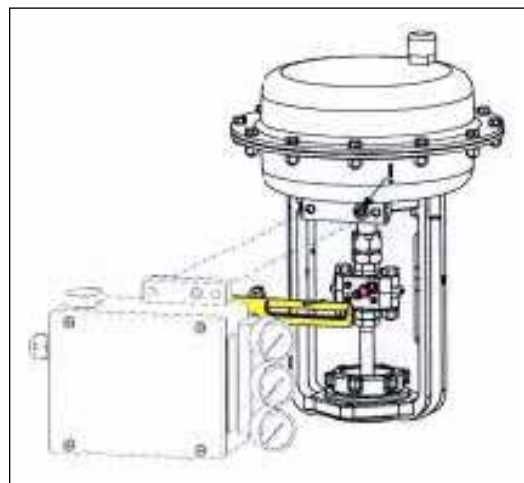


Feedback lever for linear actuators:

The carrier bolt **B** is in the slot of the feedback lever **A** and the compensating spring **F** touches the carrier bolt.

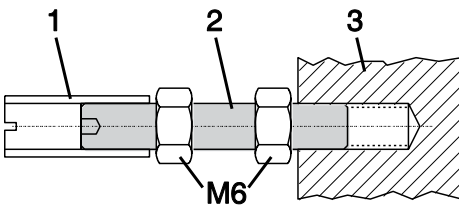


Direct Mounting



Carrier bolt B:

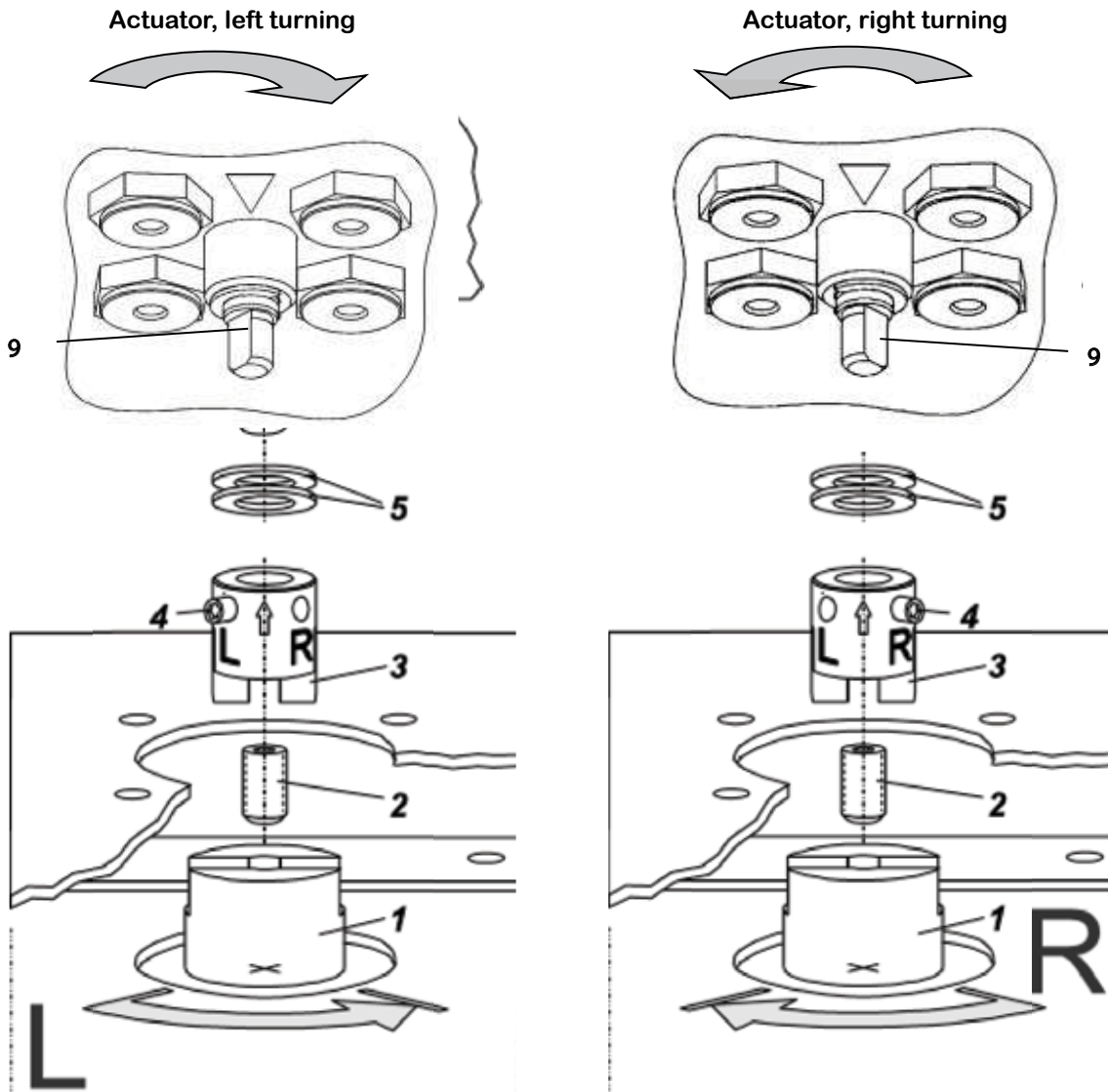
1 threaded sleeve 2 Stud 3 coupling piece



Mounting to rotary actuators

- Do not tighten grub screw 4 against the thread of spindle 9!
- When in use the flat side of the spindle 9 must move (0 100%) in front of the arrow 26.
- When the product temperature rises, the drive shaft 1 increases in length. Therefore, the rotary adapter 3 must be mounted so that approx. 1 mm (0.04 in.) of clearance results between the drive shaft 1 and the rotary adapter 3. This is achieved by placing an appropriate number of washers 5, on the feedback spindle 9, before attaching the rotary adapter.





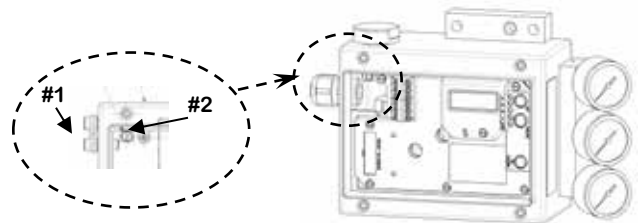
2. CONNECTIONS

On the housing the pneumatic connections are always in G $\frac{1}{4}$ ".

Mise à la terre.

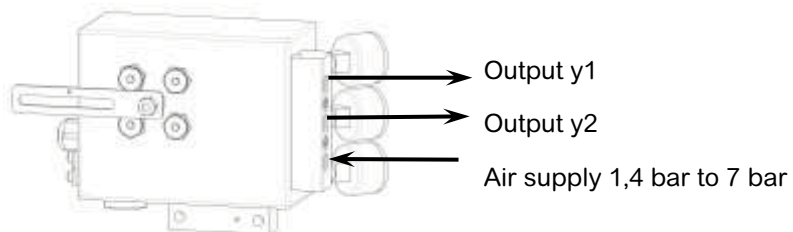
Ground

Connect earth cable to screw #1 or screw #2 (in the electrical connection compartment).



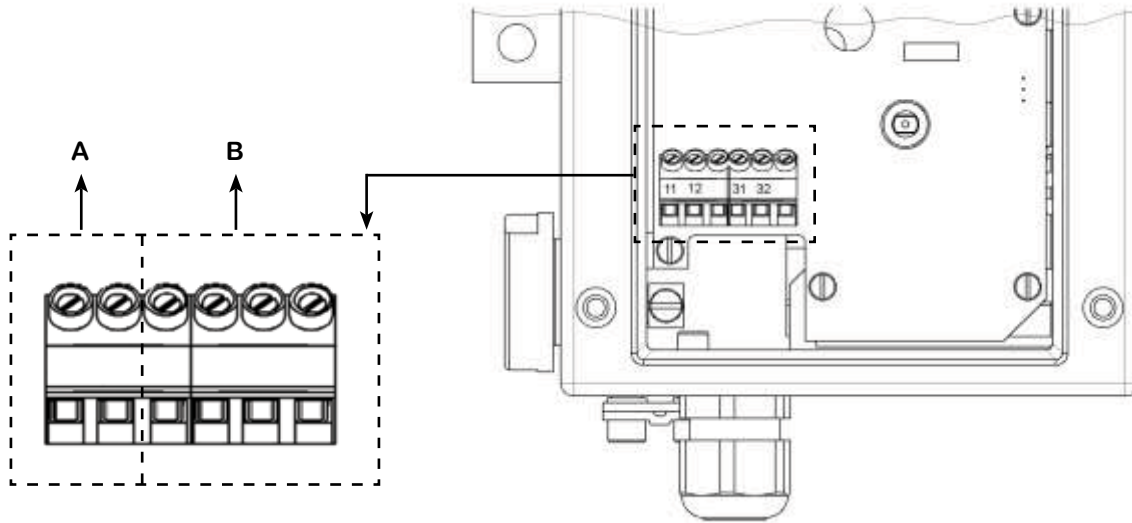
2.1 Pneumatic Connections

Air supply (s): 1.4 to 7 bar (but not more than the max. pressure of actuator), free of oil, dust and water !



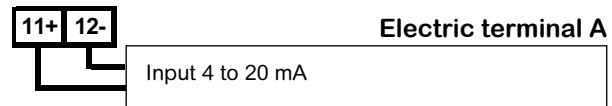
3. ELECTRICAL CONNECTIONS

The safety requirements of document EX EVE0001 as well as the requirements of PSS EVE0105 and MI EVE0105 for SRD991 must be observed!

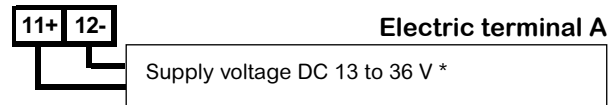


3.1 Setpoint

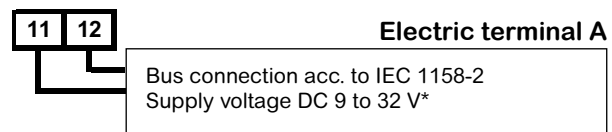
- 3.1.1 SRD991-xD (w/o communication)
SRD991-xH (HART)
SRD991-xE (FoxCom it1)



- 3.1.2 SRD991-xF (FoxCom it2)

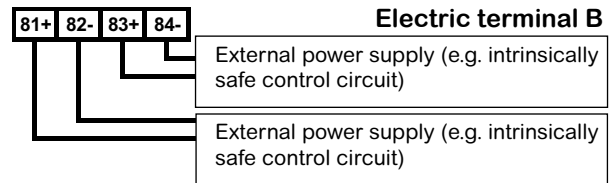


- 3.1.3 SRD991-xP (PROFIBUS PA)
SRD991-xQ (FIELDBUS FF)



3.2 Option Board

- 3.2.1 Two binary outputs (SRD991-xxP)
Two-wire system, acc. to DIN 19234 or switched output.

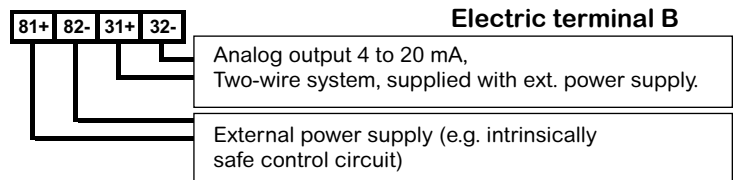


- 3.2.2 Two binary inputs (SRD991-xxB)
Binary inputs with internal supply for connection of sensors or switches (switch closed for a normal operation!)

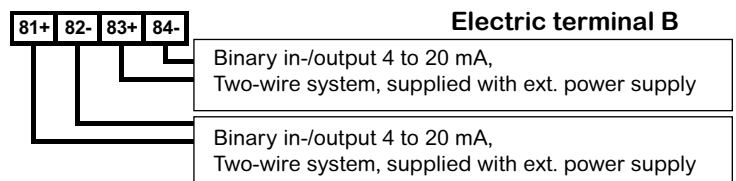
- 3.2.3 Position feedback 4 to 20 mA and 1 Alarm (SRD991-xxQ ou SRD991-xxF)
Analog output 4 to 20 mA and Binary output Two-wire system acc. to DIN 19234 or switched.



- 3.2.4 Two binary in-/outputs (SRD991-xxE)
Two-wire system acc. to DIN 19234 or switched in-/output.



* For intrinsically safe circuits please refer to certificate / data label for max. operating voltages etc.



4. START UP (Setting by means of local keys and LCD / LEDs)

After mounting the positioner on the actuator, air and electrical input connected, you can start-up the SRD. The SRD991 can be adjusted by means of a local key-pad and LCD/LED display.

Attention: Do not touch behind the positioner housing while operating the keys! DANGER OF INJURIES!

Description of display

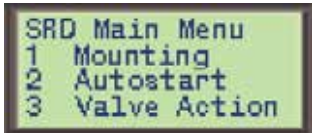
Process variable



Process variable and diagnostics



At configuration: Main menu



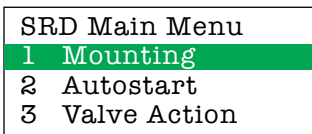
Configuration and operation with push buttons and LCD:

An already configured device may show the following display:



For configuration press (M) and main menu appears.

If the SRD wasn't configured yet, the Main menu*) appears automatically after power-up:

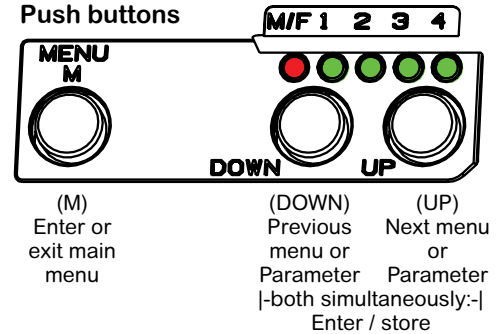


In menu 1 you can select the type of mounting.

*) On delivery the menu language in the display is English. The menu language can be changed over to another stored language. For this select 9.8.2 [german] or 9.8.3 [as ordered] and confirm with keys (UP)+(DOWN) (simultaneously). Leave menu by repeated pressing of (M) key.

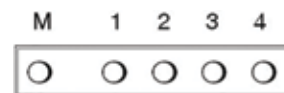
...and LCD:

Push buttons



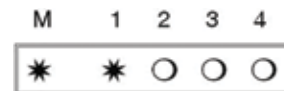
and LED display:

An already configured device is IN OPERATION after power up, and all LEDs are off.



For configuration press (M), and LEDs 'M/F' and '1' flash (= menu 1 is offered).

If the SRD wasn't configured yet, menu 1 is offered automatically after power-up:



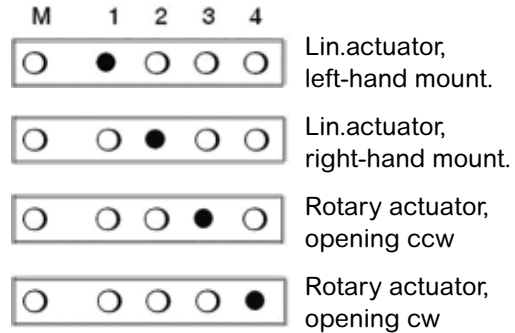
In menu 1 you can select the type of mounting.

...and LED display:

Press keys (UP)+(DOWN) simultaneously to enter menu 'Type of mounting'. Select the 'Type of mounting' by pressing (UP) or (DOWN).

1 Mounting
1.1 Lin left
1.2 Lin right
1.3 rot cclockw

(Further menus with (UP) key.)

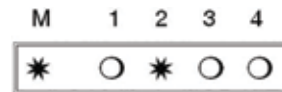
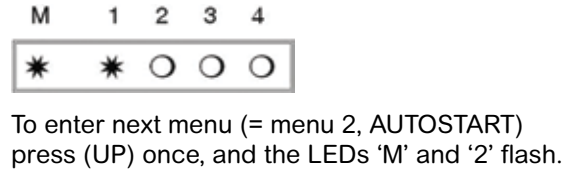


Press keys (UP)+(DOWN) simultaneously to confirm and save. The SRD moves back to menu level 1 and is in main menu again.

SRD Main Menu
1 Mounting
2 Autostart
3 Valve Action

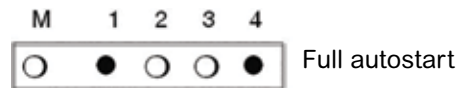
To enter next menu (= menu 2, AUTOSTART) press (UP) once.

SRD Main Menu
1 Mounting
2 Autostart
3 Valve Action



Press keys (UP)+(DOWN) simultaneously to enter menu 'Autostart'. Select Full or Short autostart* by pressing (UP) or (DOWN).

2 Autostart
2.1 Endpoints
2.2 Standard
2.3 Enhanced



Different Autostart options are available:

2.1 Endpoints

Determines only the mechanical stops of actuator/valve

2.2 Standard

Autostart recommended for standard application.

2.3 Enhanced

Enhanced Autostart. Optimized control behaviour compared to Standard Autostart.

2.4 Smooth resp.

Extended Autostart. Dampened control behaviour for e.g. smaller actuators.

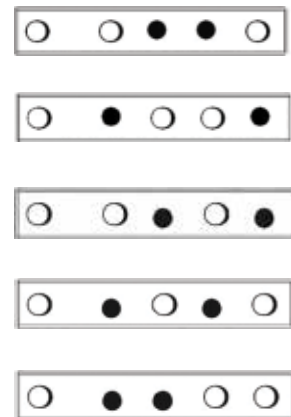
2.5 Fast resp.

Extended Autostart. Undampened control behaviour for e.g. larger actuators.

Press keys (UP)+(DOWN) simultaneously to confirm and to launch Autostart.

The automatic adaptation to the valve is composed of a sequence of steps, explained on the LCD or indicated by the LEDs.

Following the last step the device is IN OPERATION.-



Menustructure for SRD991/SRD960 with LCD

SRD Main Menu

Menu	Factory configuration	Description
1 Mounting		
1.1 Lin left	✓	Linear actuator, left-hand or direct mounting
1.2 Lin right		Linear actuator, right-hand mounting
1.3 Rot cclockw		Rotary actuator, opening counter-clockwise
1.4 Rot clockw		Rotary actuator, opening clockwise
2 Autostart		
2.1 Endpoints		Adaptation of the mechanical stops only
2.2 Standard		Autostart recommended for standard application
2.3 Extended		Enhanced Autostart. Optimized control behaviour compared to Standard Autostart
2.4 Smooth resp.		Extended Autostart. Dampened control behaviour for e.g. smaller actuators
2.5 Fast resp.		Extended Autostart. Undampened control behaviour for e.g. larger actuators
3 Valve Action		
3.1 SRD		
3.1.1 Direct	✓	Valve opens with increasing setpoint value
3.1.2 Reverse		Valve closes with increasing setpoint value
3.2 Feedback		
3.2.1 Direct	✓	Increasing Current with increasing valve position
3.2.2 Reverse		Decreasing Current with increasing valve position
4 Character		
4.1 Linear	✓	Linear characteristic
4.2 Eq Perc 1:50		Equal percentage characteristic 1:50
4.3 Quick open		Inverse equal percentage characteristic 1:50 (quick opening)
4.4 Customer		Custom characteristic
5 Limits/alarms		<i>Not locally available with LED versions of communication FF and Profibus</i>
5.1 Lower limit	0 %	Closing limit is set to input value
5.2 Cutoff low	1 %	0%-tight sealing point is set to input value
5.3 Cutoff high	100 %	100%-tight sealing point is set to input value
5.4 Upper limit	100 %	Opening limit is set to input value
5.5 Splitr 0 %	4 mA	Split range 0 %: input value corresponds to 0 %
5.6 Splitr 100 %	20 mA	Split range 100 %: input value corresponds to 100 %
5.7 Lower Alarm	-10 %	Lower position alarm on output 1 is set to input value
5.8 Upper Alarm	110 %	Upper position alarm on output 2 is set to input value
5.9 Valve 0%	4 mA	Configuration of rated-stroke of 0% at 4 mA
5.10 Valve 100%	20 mA	Configuration of rated-stroke of 100% at 20 mA
5.11 Stroke Range	x° / 20mm	Configuration of nominal travel
5.12 Units	SI	Configuration of temperature and pressure unit SI or Anglo US
6 Parameters		
6.1 Gain closing	15	P: Proportional gain for 'close valve'
6.2 Gain opening	2	P: Proportional gain for 'open valve'
6.3 Res time cl	7.5	I: Integration time for 'close valve'
6.4 Res time op	2.4	I: Integration time for 'open valve'
6.5 Rate lim cl	0.35	T63: Setting time for 'close valve'
6.6 Rate lim op	0.35	T63: Setting time for 'open valve'
6.7 Control gap	0.1	Permitted neutral zone for control difference
7 Output		Manual setting of IP-Module for testing of pneumatic output
8 Setpoint		Manual setting of valve position
8.1 12.5% Steps		Setpoint changes of 12.5% steps by using push buttons Up or Down
8.2 1% Steps		Setpoint changes of 1% steps by using push buttons Up or Down
8.3 Do PST		Start Partial Strok Test

9 Workbench			
9.1	Reset Config		Resetting of configuration to setting "ex factory"
9.2	Calib. 4 mA		Calibrate input current to 4 mA
9.3	Calib. 20 mA		Calibrate input current to 20 mA
9.4	Calib. -45°		Calibrate position measuring value to -45°
9.5	Calib. +45°		Calibrate position measuring value to +45°
9.6	Reset all 1		Resetting of configuration and Calibration (!) to "ex factory" setting for single-acting output
9.7	Reset all 2		Resetting of configuration and Calibration (!) to "ex factory" setting for double-acting output
9.8	Go Online		Setting position into mode Online
9.9	Menu Lang		
	9.9.1 English	✓	Standard
	9.9.2 Deutsch		Standard
	9.9.3 Français		Preselected / Freely Defiable
9.10	LCD orient		
	9.10.1 Normal	✓	Normal orientation of writing on LCD
	9.10.2 Flipped		Reverse orientation of writing on LCD
9.11	Cal. Feedbk		Calibration of output current of position transmitter
	9.11.1 Cal 4mA		Calibration of 0% at 4mA
	9.11.2 Cal. 20mA		Calibration of 100% at 20mA
10 - not available - for HART			
10 Profibus PA - Bus Address			
	10.1 Address LSB		Ratio from Dec. 0 / Hex 00 to Dec. 15 / Hex 0F
	10.2 Address MSB		Ratio from Dec. 0 / Hex 00 to Dec. 112 / Hex 70
	10.3 Address	126	Display of Bus Address from Dec. 1 to 127 (Hex 00 to 7F)
10 FOUNDATION Fieldbus H1			
	10.1 Simulate		
	Disabled	✓	Simulate disabled
	Enabled		Simulate enabled
	10.2 Profile		
	Link Master	✓	Link Master active
	Basic Device		Link Master de-activated

Additional Documentation for this product:

Technical Information of Attachment Kits for Positioners

TI EVE0011 A Overview of Attachment Kits of all positioners on actuators/valves of different manufacturers

Quick Guide

QG EVE0105 A Extract of Master Instruction for an easy to use, easy understandable and fast start-up. This document highlights the most important.

Master Instructions:

MI EVE0105 E SRD991 -all versions-

Technical Information for Fieldbus-Communication:

TI EVE0105 P SRD991/960 -PROFIBUS-PA

TI EVE0105 Q SRD991/960 -FOUNDATION Fieldbus H1

Master Instruction for HART-Communication:

MI EVE0105 B HART with Hand-Held Terminal

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