

SRD991 Intelligent Positioner



Quick Guide (English)

Kurzanleitung (Deutsch)

Guide rapide d'utilisation. (Français)

Guida rapida (Italiano)

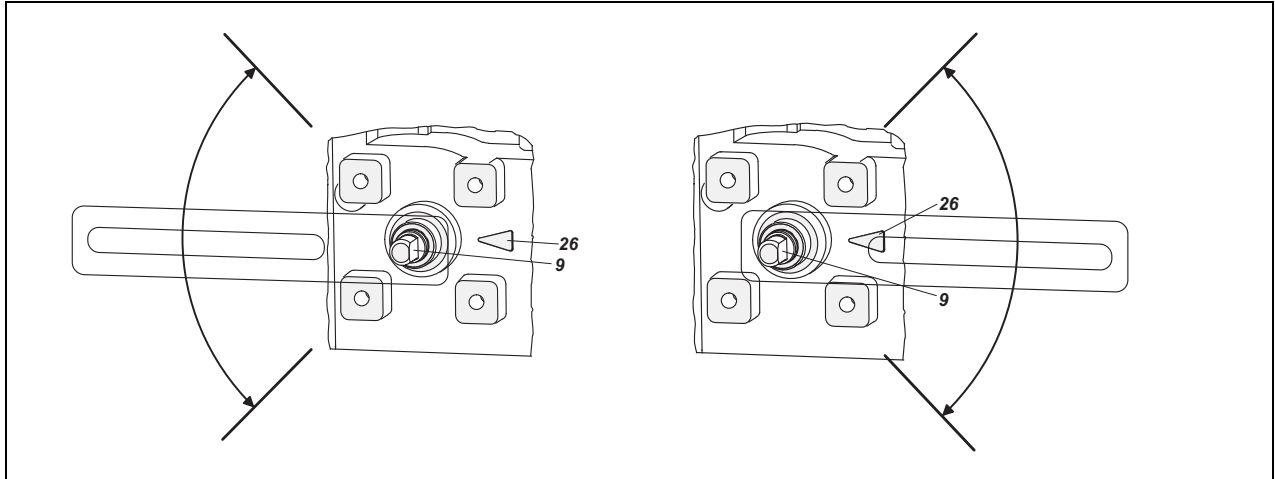
Trouble shooting. (English)

SRD991 Intelligent Positioner

These instructions are to be used as a guide for quick start-up. For more detailed information, please refer to the standard documents “Master Instructions” and “Product Specification Sheet”. These can be found on our Website.

1. MOUNTING TO ACTUATORS

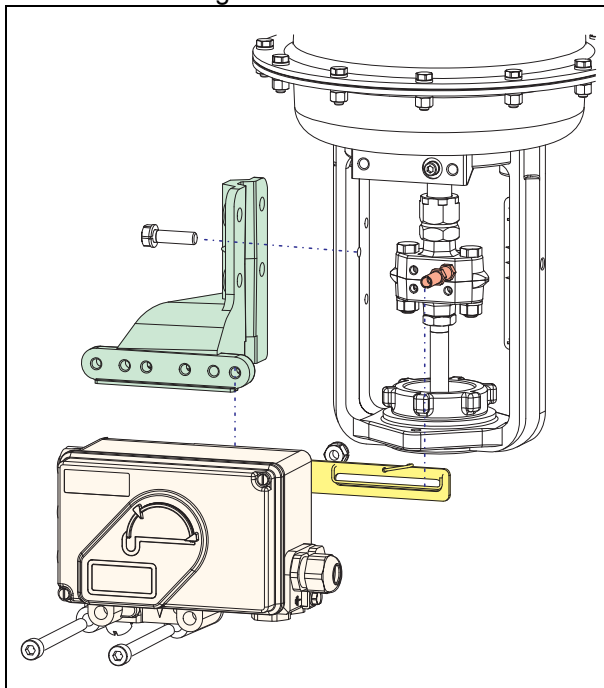
During operation, the flat side of the spindle **9** on the back of the positioner must **always** point towards the arrow **26**. The working angle around this position is $\pm 45^\circ$.



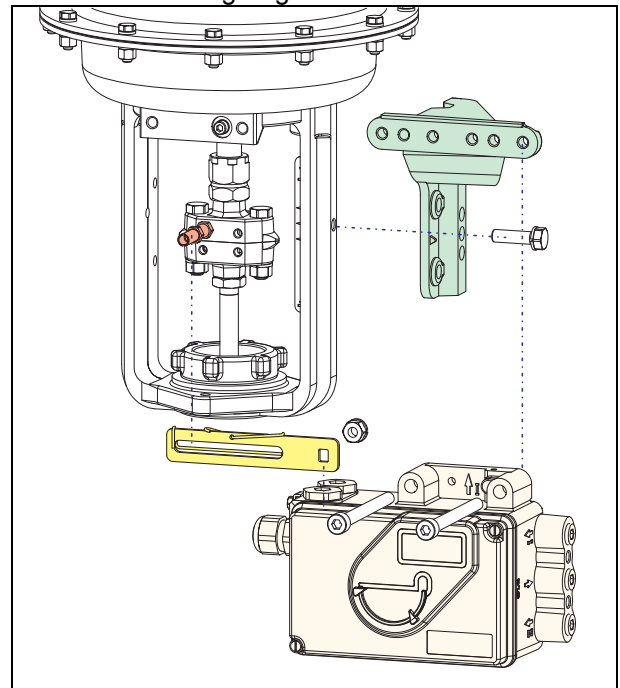
Any mechanical backlash may be source of poor control, oscillation and hunting as well as long duration of Autostart. Please use only original mounting parts and ensure that they are correctly mounted and tighten. By not using the original feedback lever or by using them in an inappropriate way, the performance of the positioner may be compromised.

MOUNTING TO LINEAR ACTUATORS

NAMUR Mounting - left hand -



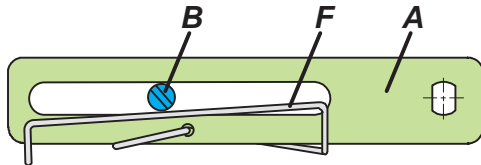
NAMUR Mounting - right hand -



MOUNTING TO LINEAR ACTUATORS (cont'd)

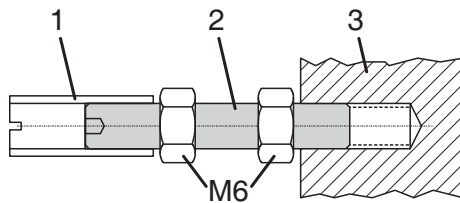
Feedback lever for linear actuators :

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

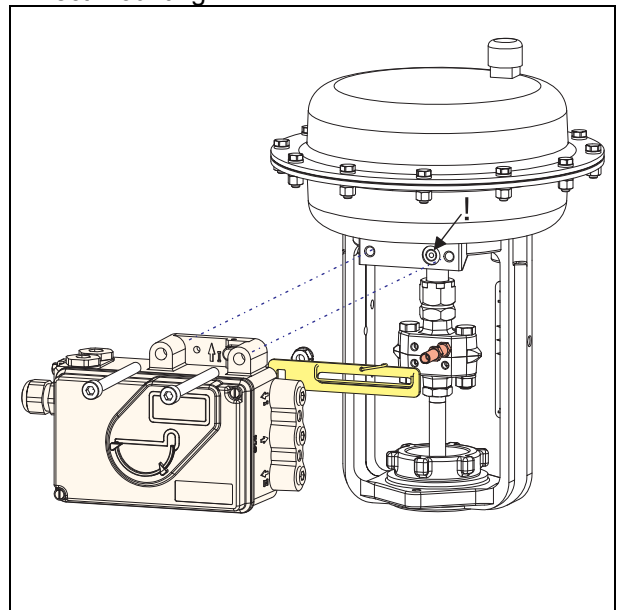


Carrier bolt B:

1 threaded sleeve 2 Stud 3 coupling piece

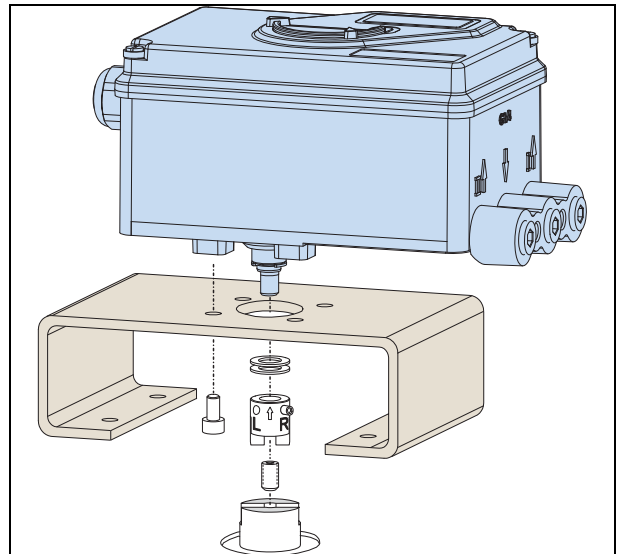


Direct Mounting

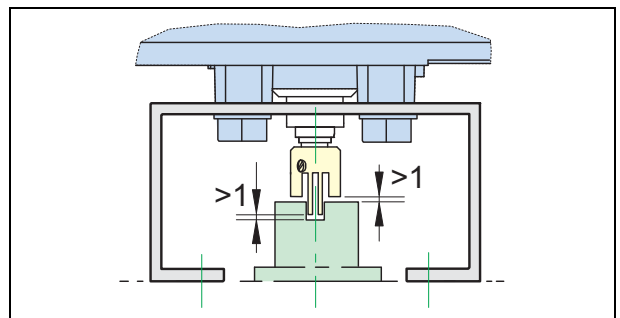


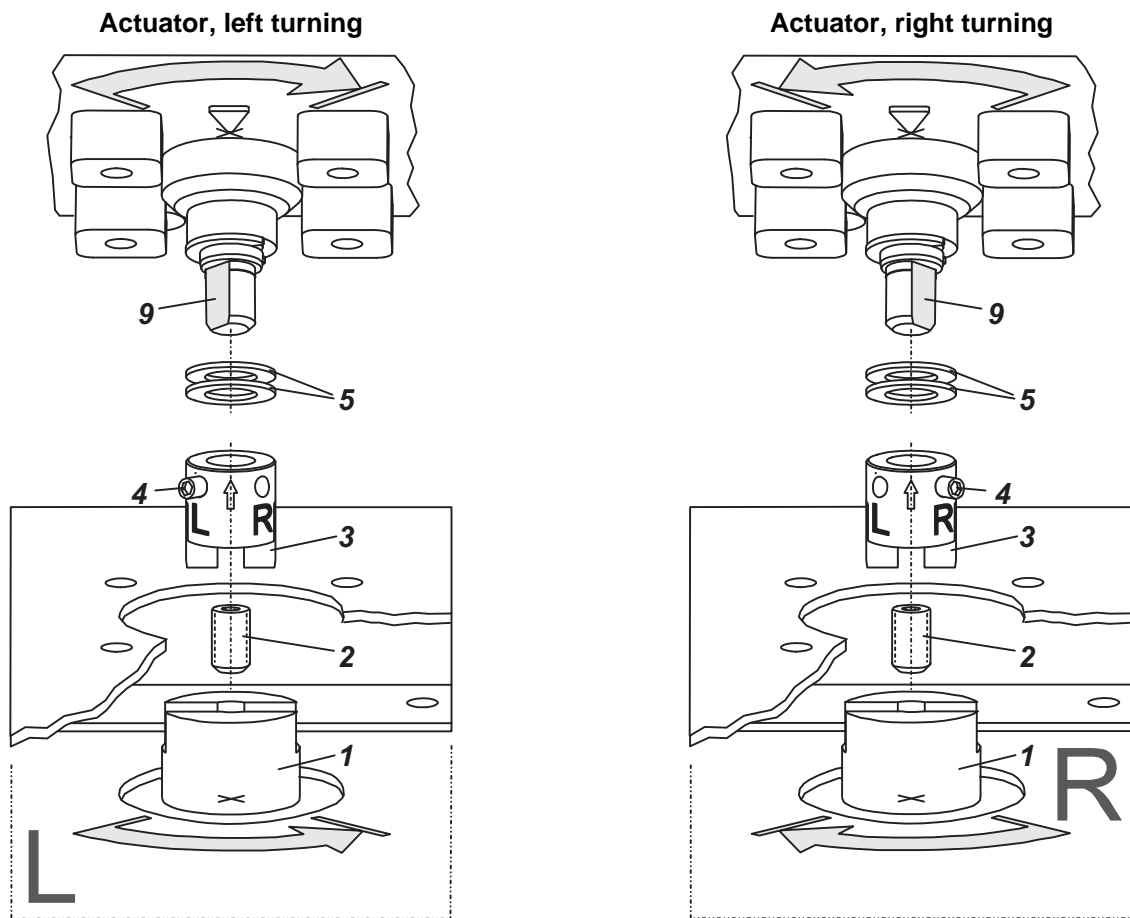
MOUNTING TO ROTARY ACTUATORS

- Do not tighten grub screw **4** against the thread of spindle **9**! (see next page).
- 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. Two washers should result in a clearance of 1 mm.



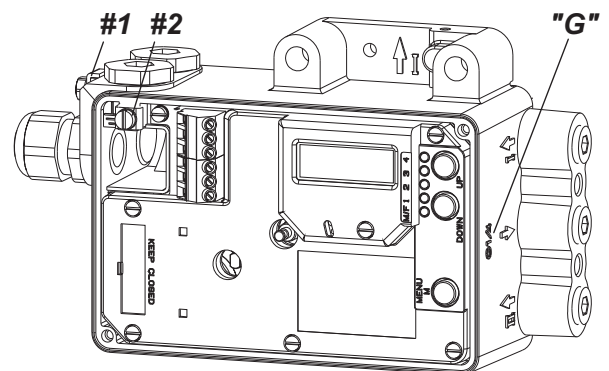


2. CONNECTIONS

Check before mounting fittings and cable glands that the threads are matching; otherwise the housing can be damaged. The letter "G" on the housing marks where the pneumatic connections are in G 1/4 (otherwise NPT).

Ground

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

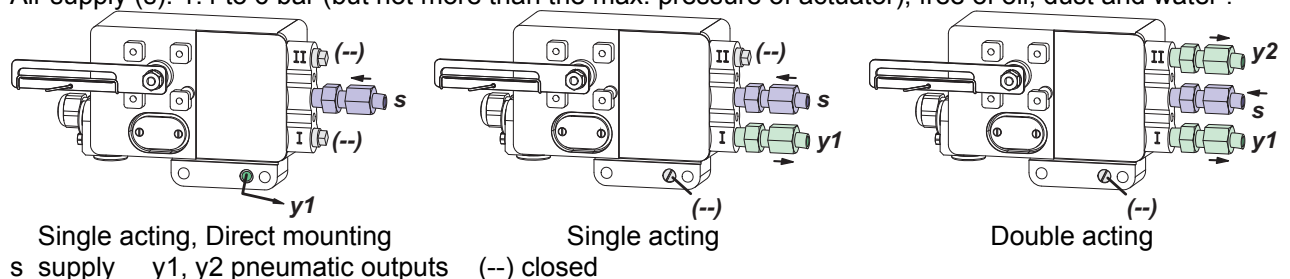


PNEUMATIC CONNECTIONS

WARNING

To avoid any personal injury resulting from bursting of parts, do not exceed maximum supply pressure of positioner and actuator. To avoid any personal injury or property damage from sudden or fast movement, during air connection: **Do not put your finger or other part at any time inside the valve or in any moving part of the actuator or in the feedback lever mechanism. Do not touch the rear part of the positioner at any time.** Connect air supply only after connections y1 (and y2 for double acting) are done.

Air supply (s): 1.4 to 6 bar (but not more than the max. pressure of actuator), free of oil, dust and water !

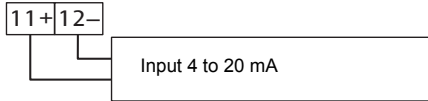


3. ELECTRICAL CONNECTIONS

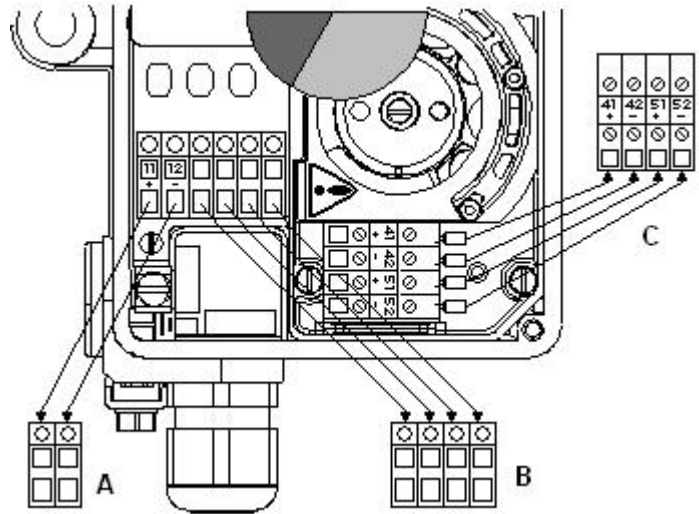
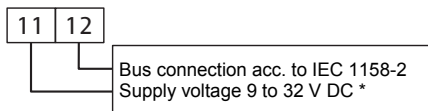
The safety requirements of document EX EVE0001 as well as the requirements of PSS EVE0105 and MI EVE0105 for SRD991 must be observed!

3.1 Setpoint Electric Terminal A

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



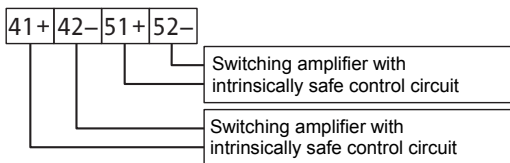
3.1.3 SRD991-xP (PROFIBUS PA) SRD991-xQ (FIELDBUS FF)



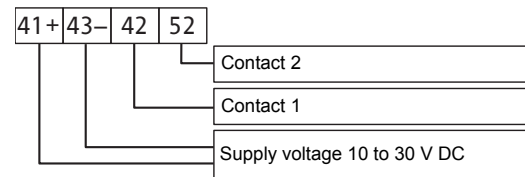
3.2 Inductive Limit Switch Electric Terminal C

3.2.1 SRD991-xxxT or U

Two-wire proximity sensors, acc. to DIN 19234 or NAMUR



3.2.2 SRD991-xxxR



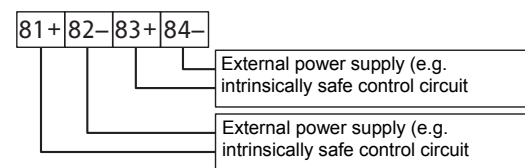
3.2.3 SRD991-xxxV

Warning: For connection of micro switches please refer to MI (Master Instruction) and obey the safety requirements described in document EX EVE0001.

3.3 Option Board Electric Terminal B

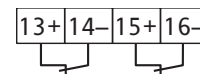
3.3.1 Two binary outputs (SRD991-xxP)

Two-wire system, acc. to DIN 19234 or switched output.



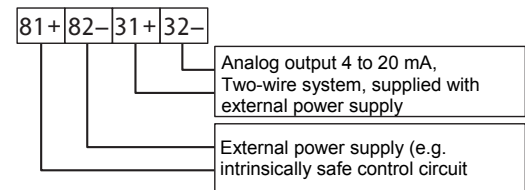
3.3.2 Two binary inputs (SRD991-xxB)

Binary inputs with internal supply for connection of sensors or switches (switch closed for a normal operation!)



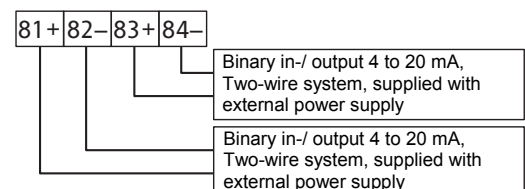
3.3.3 Position feedback 4 to 20 mA and 1 Alarm (SRD991-xxQ ou SRD991-xxF)

Analog output 4-20 mA and Binary output Two-wire system acc. to DIN 19234 or switched.



3.3.4 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.

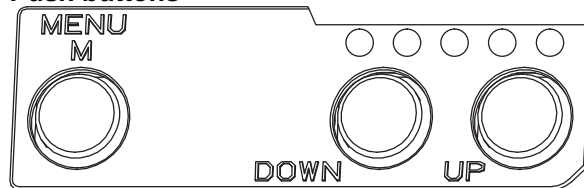
4. START UP (Setting by means of local keys and LCD)

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

WARNING

To avoid any personal injury or property damage from sudden or fast movement, during configuration: **Do not put your finger or other part at any time inside the valve or in any moving part of the actuator or in the feedback lever mechanism. Do not touch the rear part of the positioner at any time.**

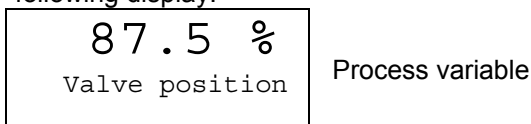
Push buttons



(M) Enter or exit Main menu
 (DOWN) Previous menu or Parameter [-both simultaneously:]
 (UP) Next menu or Parameter Enter / store

IN OPERATION:

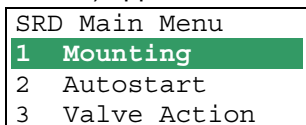
An already configured device may show the following display:



For configuration press (M) and Main menu appears.

CONFIGURATION with push buttons and LCD:

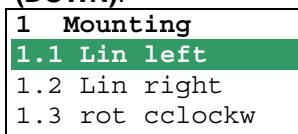
If the SRD wasn't configured yet, the Main menu*) appears automatically after power-up:



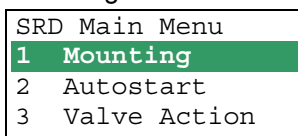
(The selected item is displayed with dark background.)

In menu 1 you select the type of mounting: Press keys (UP)+(DOWN) simultaneously to enter this menu.

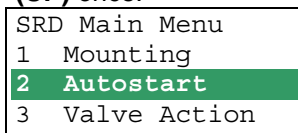
Select your 'Type of mounting' by pressing (UP) or (DOWN).



Press keys (UP)+(DOWN) simultaneously to confirm and save. The SRD moves back to Main menu again.



To enter next menu (= menu 2, Autostart) press (UP) once:



Now press keys (UP)+(DOWN) simultaneously to enter menu 'Autostart'.

(Continued on next page.)

*) 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.

Several Autostart options are available . Select relevant Autostart by pressing **(UP)** or **(DOWN)**:

2 Autostart

2.1 Endpoints

2.2 Standard

2.3 Enhanced

2.4 Smooth resp.

2.5 Fast resp.

→ Determines only the mechanical stops of actuator / valve

→ **Recommended for standard applications**

→ Optimized control behaviour compared to Standard Autostart

→ Dampened control behaviour for e.g. smaller actuators

→ Undampened control behaviour for e.g. larger actuators

Press keys **(UP)+(DOWN)** simultaneously to confirm and to launch Autostart. The automatic adaptation to the actuator is composed of a sequence of steps indicated on the LCD.

With the last step the device is **IN OPERATION**:

87.5 %	Process variable
Valve position	

87.5 %	Diagnostic messages see following table.
Valve position Ctrl diff error	

5 TROUBLE SHOOTING (For more details see MI EVE0105 E)

Autostart err 1	
Description of message / LCD text	Remedy
Air supply too low	Check air supply
Feedback lever (linear actuator) or Coupling (rotary actuator) incorrectly linked. Potentiometer moves out of operating range of $\pm 47^\circ$ of 0° position	Check mounting. Flat area points to arrow on housing
Coupling (rotary actuator) incorrectly linked (R and L interchanged)	Check mounting
Pneumatic output to actuator closed or untight. When direct mounting onto FlowTop or FlowPak, the screw plug y1-d is not removed	Check pneumatic connections
Mechanical stops not determinable	Check spring movement of actuator / check air supply / Check mounting
When using a booster or spool valve, no control parameters can be determined, since air capacity is too high	Device version is not suitable for this actuator; select version with smaller air capacity or remove booster
Control parameter too high since air capacity is too high (in general, oscillation in valve movement)	Use a booster or the version with spool valve. Reduce control parameter prop.-gain (Menu 6.1 and 6.2) to Code 10 = value 26.6.
Possibly incomprehensible configuration data	Reset configuration, see Menu 9.1

Optionboard err	
Description of message / LCD text	Remedy
Configured status of the SRD deviates from existing version (e.g. Option board has been inserted subsequently)	Check if correct option board has been connected Confirm message by pressing keys (UP)+(DOWN) simultaneously
Bad contact	Connections to terminals interchanged Check connections Tighten electronics
Defective	Exchange option board

Ctrl diff error	
Description of message / LCD text	Remedy
Actuator problems (high friction or blocked)	Check actuator
Insufficient air supply	Check air supply / air filter
Insufficient parameters for position controls, for example, amplification too small	Check control parameter, check pneumatic components
IP module or pneumatic amplifier defect	Check with Menu 7; replace if necessary

6 MENU STRUCTURE FOR SRD991 / SRD960

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
1.5 Linear		For Top Mounting (only for SRD991)
2 Autostart		
2.1 Endpoints		Adaptation of the mechanical stops only
2.2 Standard		Autostart recommended for standard application
2.3 Enhanced		Enh. Autostart. Optimized control behaviour compared to Standard Autostart
2.4 Smooth resp.		Enh. Autostart. Dampened control behaviour for e.g. smaller actuators
2.5 Fast resp.		Enh. Autostart. Undampened control behaviour for e.g. larger actuators
3 Valve Action		
3.1 SRD		Action of Positioner:
3.1.1 Direct	✓	Valve opens with increasing setpoint value
3.1.2 Reverse		Valve closes with increasing setpoint value
3.2 Feedback		Action of Feedback Unit:
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 (Configuration via DTM)
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° / 20 mm	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 dead band 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 Stroke 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 (Service function only)
9.9	Menu Lang		Language on LCD:
9.9.1	English	✓	Standard English
9.9.2	Deutsch		Standard German
9.9.3	Français		Preselected / freely definable
9.10	LCD orient		LCD Orientation:
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. 4 mA		Calibration of 0% at 4 mA
9.11.2	Cal 20mA		Calibration of 100% at 20 mA
10	Profibus PA - Bus Address		Profibus only.
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		FF only.
10.1	Simulate		
	Disabled	✓	Simulate disabled
	Enabled		Simulate enabled
10.2	Profile		
	Link Master	✓	Link Master active
	Basic Device		Link Master de-activated

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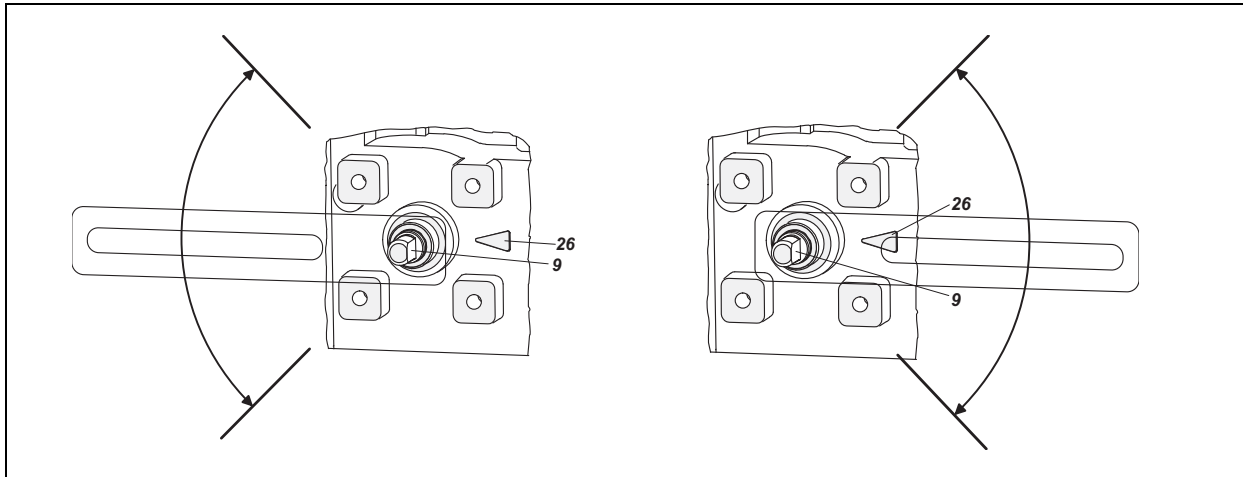
DOKT 534 022 302
FD-QG-PO-002-EN

SRD991 Intelligenter Stellungsregler

Diese Anleitung dient zur schnellen Inbetriebnahme des Stellungsreglers. Ausführlichere Informationen können den Dokumenten "Inbetriebnahme- und Wartungsanleitung" und "Typenblatt" entnommen werden, die Sie auch auf unserer Webseite finden.

1. MONTAGE AN ANTRIEBE

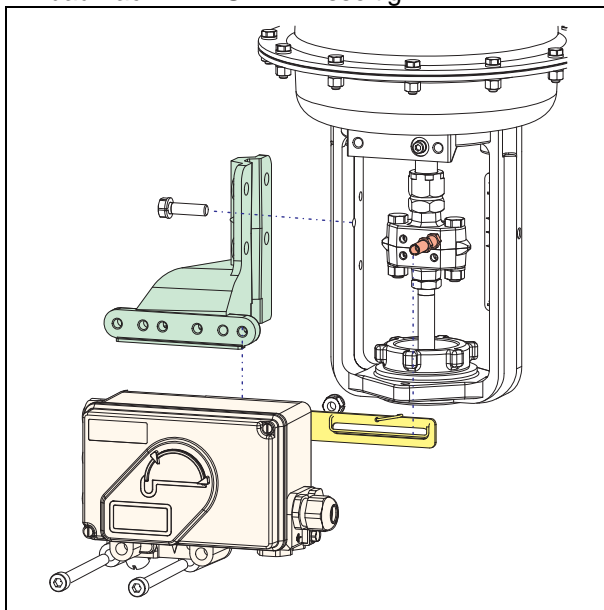
Auf der Rückseite des Stellungsreglers ist die Anlenkwelle **9**. Die Anlenkwelle steht richtig, wenn der Pfeil **26** auf die Flachstelle der Anlenkwelle zeigt. Der Arbeitsbereich ist dann ± 45 Grad um diese Position.



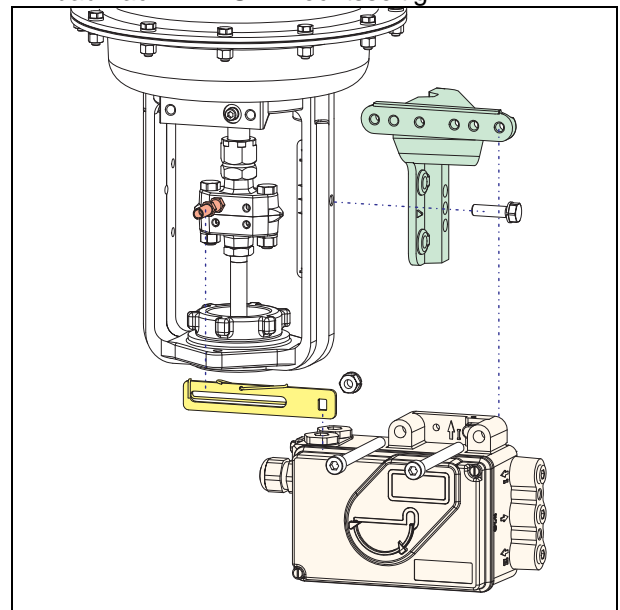
Jedes mechanische Spiel kann Ursache sein für schlechtes Regelverhalten, Schwingneigung oder unnötigen Zeitbedarf beim Autostart. Verwenden Sie daher nur Original-Anbauteile und achten Sie auf richtige und feste Montage. Ohne Original-Anlenkhebel oder falsch montiert wird die Leistungsfähigkeit dieses Stellungsreglers nur eingeschränkt zur Verfügung stehen.

MONTAGE AN LINEARANTRIEBE

Anbau nach NAMUR - linksseitig -

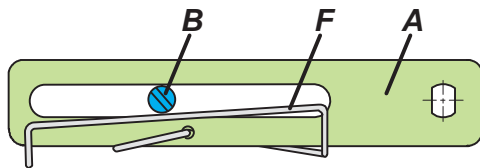


Anbau nach NAMUR - rechtsseitig -

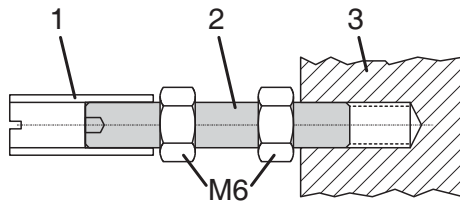
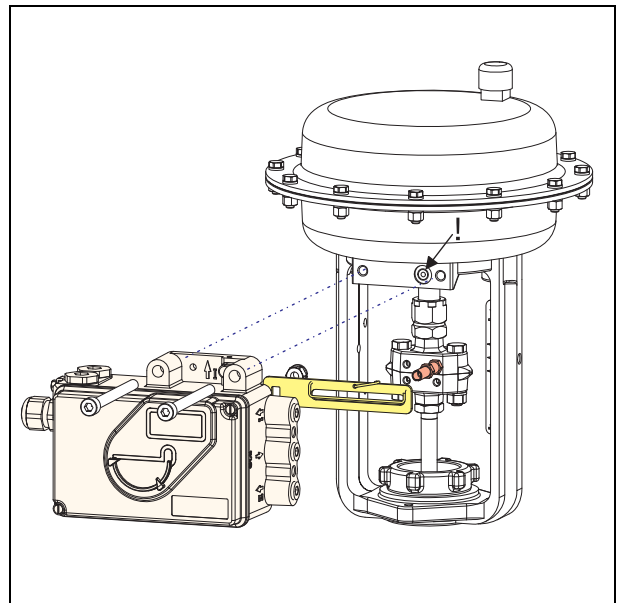


MONTAGE AN LINEARANTRIEBE (Fortsetzung)**Anlenkhebel bei Linearantrieben:**

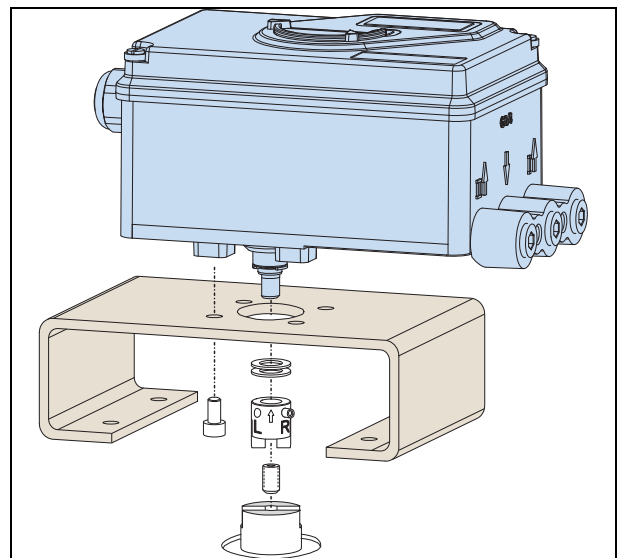
Der Anlenkbolzen **B** greift in den Schlitz des Anlenkhebels **A** ein. Die Ausgleichsfeder **F** liegt unten am Anlenkbolzen an.

**Anlenkbolzen B:**

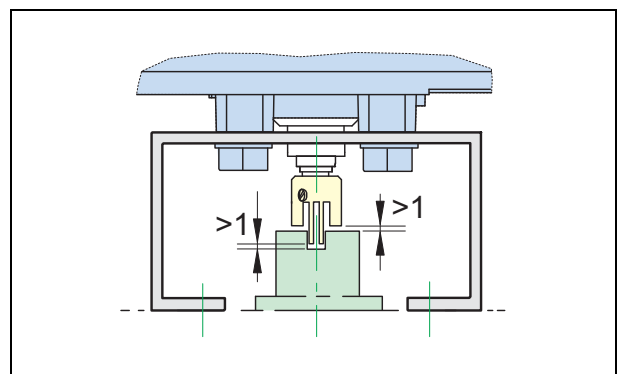
1 Gewindehülse 2 Gewindestift
3 Kupplungsstück

**Direktanbau****ANBAU AN SCHWENKANTRIEBE**

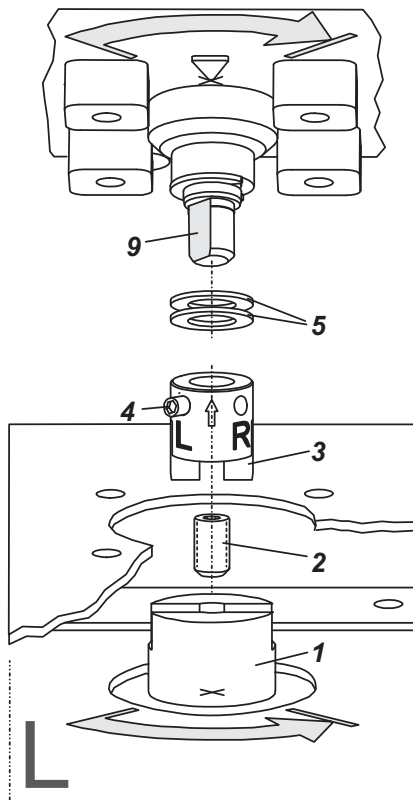
- Den Gewindestift **4** NICHT gegen das Gewinde der Anlenkwelle **9** schrauben, sondern gegen die Flachstelle!
- Bei 50% Sollwert muss sich die Flachstelle der Anlenkwelle **9** vor dem Pfeil **26** befinden.



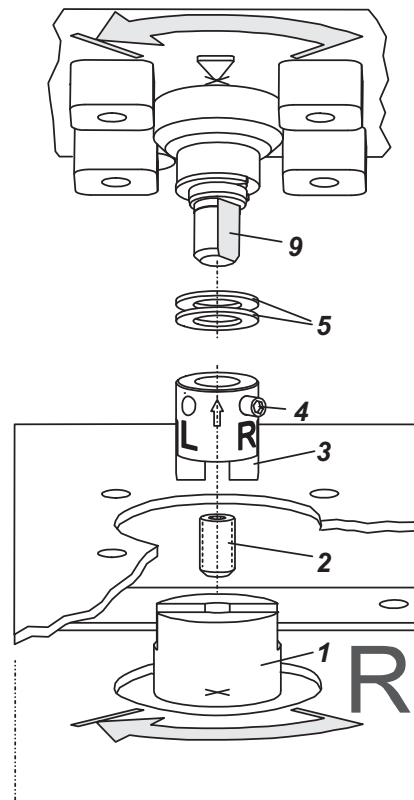
- Bei steigender Produkttemperatur reduziert sich der Abstand zwischen Antriebswelle **1** und Kupplungsstück **3**. Daher sollte ein Spiel von etwa 1 mm gewährleistet sein. Dies wird erreicht, indem vor dem Anschrauben des Kupplungsstücks eine entsprechende Anzahl von Scheiben **5** auf die Anlenkwelle **9** gelegt wird. Die genaue Anzahl der Scheiben ist durch Versuch zu bestimmen. 2 Scheiben sollten ein Spiel von ca. 1 mm ergeben.



Anbau bei linksdrehendem Antrieb

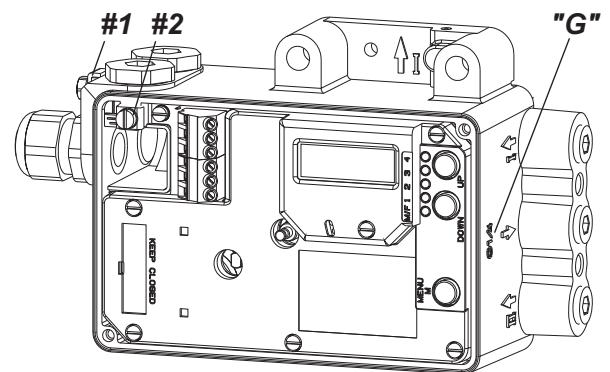


Anbau bei rechtsdrehendem Antrieb



2. ANSCHLÜSSE

Prüfen Sie vor Eindrehen der elektrischen und pneumatischen Verschraubungen, ob die Gewinde zueinander passen, sonst kann das Gehäuse beschädigt werden.
Der Buchstabe "G" am Gehäuse kennzeichnet pneum. Anschlüsse mit G 1/4 (sonst: NPT).



Erdung

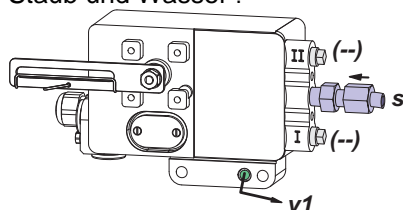
Anschluss der Erdleitung an Schraube #1 oder an Schraube #2 (im Klemmenraum).

PNEUMATISCHE ANSCHLÜSSE

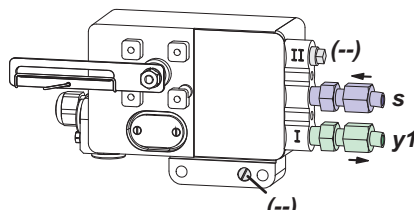
WARNUNG

Zur Vermeidung von Schäden durch berstende Teile darf **niemals** der Maximaldruck von Antrieb und Stellungsregler überschritten werden. Der Antrieb kann sich plötzlich und sehr schnell bewegen! Zur Vermeidung von Personen- und Anlagenschäden beachten Sie grundsätzlich: **Stecken Sie niemals Finger oder anderes in das Ventil oder den Antrieb oder in irgendwelche bewegliche Teile der Anlenkung. Berühren Sie niemals die Mechanik auf der Rückseite des Stellungsreglers.** Schließen Sie erst dann die Zuluft an, nachdem der Ausgang y1 zum Antrieb angeschlossen ist (und auch y2 bei doppeltwirkendem Antrieb).

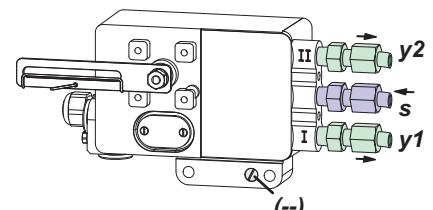
Zuluftversorgung (s): 1,4 bis 6 bar (aber nicht höher als der Maximaldruck des Antriebes), frei von Öl, Staub und Wasser !



Einfachwirkend, Direktanbau
s Zuluft y1, y2 pneumatische Ausgänge



Einfachwirkend
(--) verschlossen



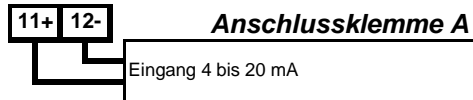
Doppeltwirkend

3. ELEKTRISCHE ANSCHLÜSSE

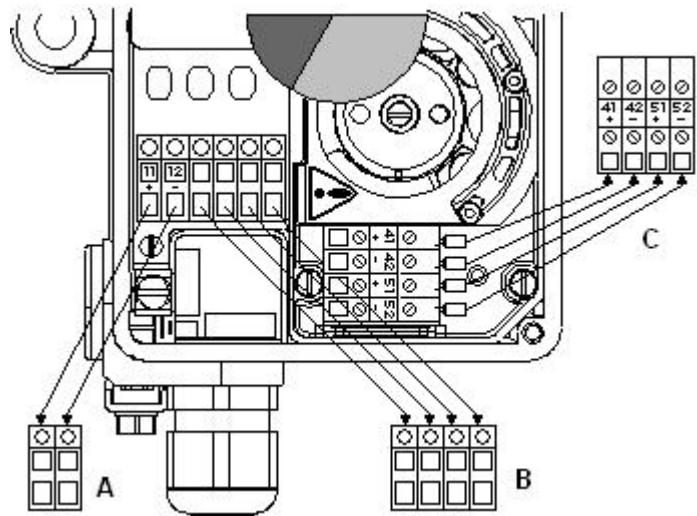
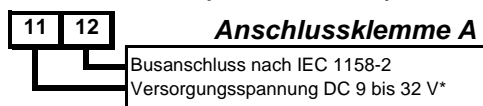
Die Sicherheitsbestimmungen im Dokument EX EVE0001 sowie die Bestimmungen in PSS EVE0105 und MI EVE0105 müssen beachtet werden!

3.1 Sollwert Anschlussklemme A

- 3.1.1 SRD991-xD (ohne Kommunikation)
SRD991-xH (HART)



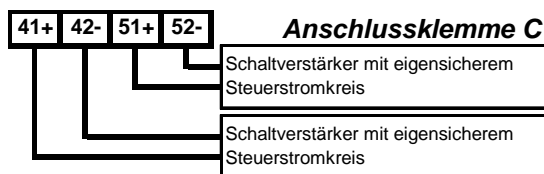
- 3.1.3 SRD991-xP (PROFIBUS PA)
SRD991-xQ (FIELD BUS FF)



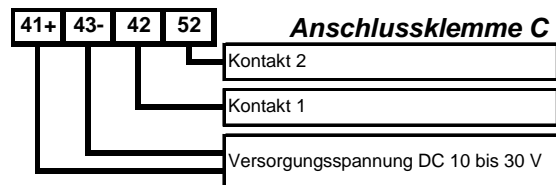
3.2 Induktiver Grenzwertgeber Anschlussklemme C

- 3.2.1 SRD960-xxxT oder U

Zweidraht-Sensoren, nach DIN 19234 oder NAMUR



- 3.2.2 SRD991-xxxR



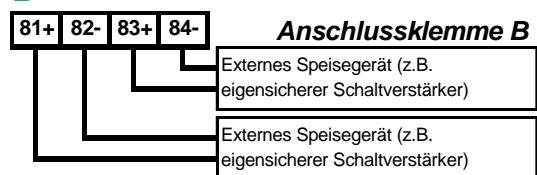
- 3.2.3 SRD991-xxxV

Achtung: Beim Anschluss der Mikroschalter sind die Hinweise in der MI sowie die Sicherheitsbestimmungen im Dokument EX EVE0001 zu beachten.

3.3 Zusätzliche Ein-/Ausgänge Anschlussklemme B

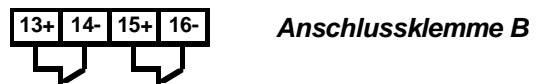
- 3.3.1 Zwei Binärausgänge (SRD991-xxP)

Zweidraht-System nach DIN 19234 oder Schaltausgang



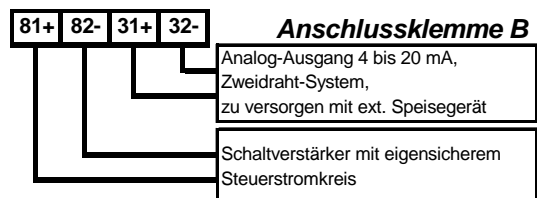
- 3.3.2 Zwei Binäreingänge (SRD991-xxB)

Binäreingänge mit interner Versorgung zum Anschluss von Schaltern oder Sensoren (Schalter **geschlossen** im Normal-Zustand!)



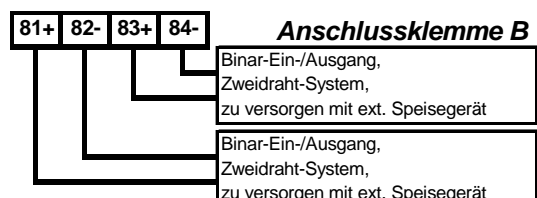
- 3.3.3 Stellungsrückmeldung 4- 20 mA und 1 Alarm (SRD991-xxQ oder SRD991-xxF)

Analogausgang 4-20 mA und Binärausgang Zweidraht-System nach DIN 19234 oder schaltend



- 3.3.4 Zwei Binärein-/ausgänge (SRD991-xxE)

Zweidraht-System nach DIN 19234 oder Schaltein-/ausgang



* Bei Einsatz im Ex-gefährdeten Bereich sind die max. Versorgungsspannungen etc. auf dem Typenschild bzw. Baumusterprüfbescheinigung zu beachten!

4. INBETRIEBNAHME (Einstellung mit lokalen Tasten und LCD / LEDs)

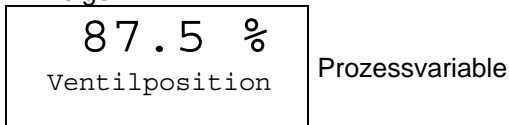
Nach Anbau an den Antrieb, und pneumatischem und elektrischem Anschluss, können Sie den SRD in Betrieb nehmen. Die Inbetriebnahme kann mit den lokalen Drucktasten und dem LCD erfolgen.

WARNUNG

*Der Antrieb kann sich plötzlich und sehr schnell bewegen! Zur Vermeidung von Personen- und Anlagenschäden beachten Sie grundsätzlich: **Stecken Sie niemals Finger oder anderes in das Ventil oder den Antrieb oder in irgendwelche bewegliche Teile der Anlenkung. Berühren Sie niemals die Mechanik auf der Rückseite des Stellungsreglers.***

IN BETRIEB:

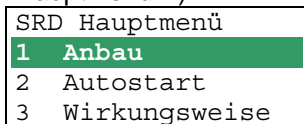
Ein bereits konfigurierter SRD hat z.B. folgende Anzeige:



Zum Konfigurieren **(M)** drücken, es erscheint das Hauptmenü.

KONFIGURIERUNG mit Drucktasten und LCD

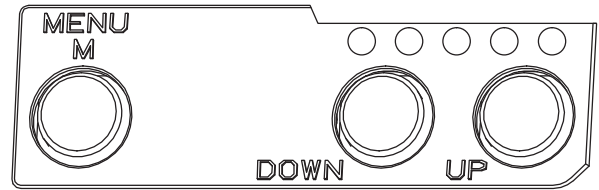
Wenn der SRD noch nicht konfiguriert ist, erscheint nach dem Einschalten automatisch das Hauptmenü: *):



(Beim Konfigurieren ist der jeweils angewählte Menüpunkt dunkel hinterlegt.)

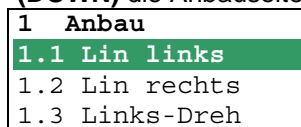
In Menü 1 kann die Anbauseite ausgewählt werden: Durch gleichzeitiges Drücken der Tasten **(UP)+(DOWN)** kommt der SRD in dieses Menü.

Drucktasten

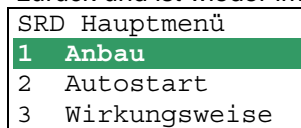


- (M)** Hauptmenü aufrufen oder verlassen
- (DOWN)** voriges Menü oder voriger Parameter |-- beide gleichzeitig:--| Eingabe / Speichern
- (UP)** nächstes Menü oder nächster Parameter

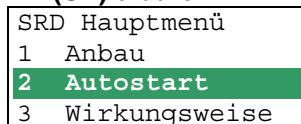
Wählen Sie dann mit den Tasten **(UP)** oder **(DOWN)** die Anbauseite aus:



Mit **(UP)+(DOWN)**(gleichzeitig) bestätigen und speichern. Der SRD springt eine Menü-Ebene zurück und ist wieder im Hauptmenü:



Zum nächsten Menü (= Menü 2, AUTOSTART) 1x **(UP)** drücken.



Durch gleichzeitiges Drücken der Tasten **(UP)+(DOWN)** kommt der SRD in das Menü zur Auswahl des gewünschten Autostarts:

(Fortsetzung auf nächster Seite)

*) Im Auslieferungszustand ist die voreingestellte Menüsprache im Display in Englisch. Die Menüsprache kann z.B. auf Deutsch umgestellt werden. Hierzu 9.8.2 auswählen, mit den Tasten **(UP)+(DOWN)** (gleichzeitig) bestätigen und durch mehrmaliges Betätigen von **(M)** das Menü wieder verlassen.

Es sind verschiedene Autostart-Optionen verfügbar. Wählen Sie aus mit den Tasten **(UP)** oder **(DOWN)**.

2 Autostart	
2.1 Anschläge	--> Ermittelt nur die mechanischen Anschläge des Antriebs/Ventils
2.2 Standard	--> Empfohlener Autostart für Standard-Applikationen
2.3 Erweitert	--> Zur Optimierung der Reglereinstellung gegenüber dem Standard
2.4 Sanfte Antw.	--> Gedämpfte Reglereinstellung für z.B. kleinere Antriebe
2.5 Schnell.Antw.	--> Ungedämpfte aggressivere Reglereinstellung für z.B. größere Antriebe

Mit den Tasten **(UP)+(DOWN)** gleichzeitig bestätigen, um Autostart einzuleiten.

Die automatische Anpassung an den Antrieb erfolgt in nacheinander ablaufenden Schritten, die auf dem LCD angezeigt werden.

Nach dem letzten Schritt ist der Stellungsregler IN BETRIEB:

87.5 % Ventilposition	Prozessvariable	87.5 % Ventilposition	Fehlermeldungen siehe nächsten Abschnitt
		Regelabweichung	

5. DIAGNOSE, FEHLERSUCHE (Weitere Einzelheiten siehe auch MI EVE0105 E)

Autost. Fehler 1	
Beschreibung / LCD-Anzeige	Abhilfe
Zuluftdruck zu gering	Zuluftdruck prüfen
Anlenkhebel (Hubantrieb) bzw. Kupplung (Schwenkantrieb) falsch montiert. Potentiometer fährt aus dem Arbeitsbereich $\pm 47\%$ um Mittellage	Anlenkung prüfen Flachstelle muss zum Pfeil am Gehäuse zeigen
Kupplungsstück (Schwenkantrieb) falsch montiert (R und L verwechselt)	Anlenkung prüfen
Pneumatischer Ausgang zum Antrieb verschlossen oder undicht / Bei Direktanbau ist die Verschluss-schraube y1-d nicht entfernt	Pneumatische Anschlüsse überprüfen
mech. Anschläge nicht bestimmbar	Federlaufbereich des Antriebs prüfen / Zuluftdruck prüfen / Anlenkung prüfen
Beim Einsatz eines Leistungsverstärkers oder Spool valve lassen sich keine Regelungsparameter bestimmen, da die Luftleistung zu hoch ist	Gerätevariante ist nicht geeignet für diesen Antrieb; Ausführung mit geringerer Luftleistung wählen oder Leistungsverstärker entfernen
Regelungsparameter wurden zu hoch ermittelt, da Luftleistung zu gering ist (i.d.R. Oszillation in Ventilbewegung)	Einsatz eines Leistungsverstärkers (Booster) oder der Variante mit Spool valve. Regelungsparameter Prop.-Verstärkung verkleinern (Menü 6.1 und 6.2 auf Code 10 = Wert 26.6)
evtl. unplausible Konfigurierungsdaten	Rücksetzen der Konfigurierung, siehe Menü 9.1

Optionskarte ?	
Beschreibung / LCD-Anzeige	Abhilfe
Konfigurierter Zustand des SRD weicht von vor-liegender Ausführung ab (Optionsplatine wurde z.B. nachträglich gesteckt)	Prüfen, ob richtige Options-Platine gesteckt ist. Meldung und somit neue Geräteausführung bestätigen mit Tasten (UP)+(DOWN) (gleichzeitig)
Kontaktproblem	Anschlüsse an Klemmen vertauscht Steckkontakte prüfen Elektronik festschrauben
Defekt	Tausch der Options-Platine

Regelabweichung	
Beschreibung / LCD-Anzeige	Abhilfe
Antriebsprobleme, z.B. Spindelreibung zu hoch	Antrieb und Stopfbuchse prüfen
Zuluftdruck oder Luftleistung zu gering	Zuluft / Luftfilter prüfen
unzureichende Parameter für Positionsregler, z.B. Verstärkung zu klein	Regler-Parameter prüfen, Pneumatik-Komponenten prüfen
I/P-Modul oder pneumatischer Verstärker defekt	mit Menü 7 testen, ggf. austauschen

Menüstruktur des SRD991 / SRD960 mittels LCD

SRD Hauptmenü

Menüpunkt / LCD-Anzeige	Einstellung ab Werk	Beschreibung:
1 Anbau		
1.1 Lin links	✓	Hubantrieb, Anbau links, Direktanbau
1.2 Lin rechts		Hubantrieb, Anbau rechts
1.3 links-Dreh		Schwenkantrieb, im Gegenuhrzeigersinn öffnend
1.4 Rechts-Dreh		Schwenkantrieb, im Uhrzeigersinn öffnend
1.5 Linear		Für Top Mounting (nur für SRD991)
2 Autostart		
2.1 Anschläge		Ermittlung der mechanischen Anschläge
2.2 Standard		Autostart empfohlen für Standard-Applikationen
2.3 Erweitert		Erweiterter Autostart. Zur Optimierung der Reglereinstellung gegenüber dem Standard-Modi
2.4 Sanfte Antw.		Erweiterter Autostart. Gedämpfte Reglereinstellung für z.B. kleinere Antriebe
2.5 Schnell.Antw.		Erweiterter Autostart. Ungedämpfte aggressivere Reglereinstellung für z.B. größere Antriebe
3 Wirkungsweise		
3.1 SRD		
3.1.1 Gleichsinnig	✓	Ventil öffnet mit zunehmendem Sollwert
3.1.2 Gegensinnig		Ventil schließt mit zunehmendem Sollwert
3.2 Rückmeldung		
3.2.1 Gleichsinnig	✓	Zunehmende Strom mit zunehmende Ventilposition
3.2.2 Gegensinnig		Abnehmende Strom mit zunehmende Ventilposition
4 Kennlinie		
4.1 Linear	✓	Lineare Kennlinie
4.2 Gl-Proz 1:50		Gleichprozentige Kennlinie 1:50
4.3 Invers gl-%		Invers gleichprozentige Kennlinie 1:50 (schnell öffnend)
4.4 Benutzerspez		Kundenspezifische Kennlinie (konf. mittels Kommunikation)
5 Grenz./Alarmer		<i>Nicht für Versionen mit FF und Profibus vor HW-Rev. 3.3</i>
5.1 Unt. Hubbegr	0 %	Schließgrenze auf Eingangswert setzen
5.2 Dichts. Unt	1 %	0%-Dichtschließ-Punkt auf Eingangswert setzen
5.3 Dichts. Oben	100 %	100%-Dichtschließ-Punkt auf Eingangswert setzen
5.4 Obere Hubbeg	100 %	Öffnungsgrenze wird auf Eingangswert gesetzt.
5.5 Splitr 0 %"	4 mA	Split range 0 %: Eingangswert entspricht 0 %
5.6 Splitr 100 %	20 mA	Split range 100 %: Eingangswert entspricht 100 %
5.7 Unter. Alarm	-10 %	Unterer Positionsalarm auf Ausgang 1 auf den Eingangswert setzen
5.8 Oberer Alarm	110 %	Obere Positionsalarm auf Ausgang 2 auf den Eingangswert setzen
5.9 Ventil 0%	4 mA	Konfiguration des Nennhubes von 0% bei 4 mA
5.10 Ventil 100%	20 mA	Konfiguration des Nennhubes von 100% bei 20 mA
5.11 Stellber.	x° / 20mm	Einstellung des Nennhubes für Hubantriebe
5.12 Einheiten	SI	Konfiguration der Temperatur und Druckeinheiten SI oder Anglo US
6 Parameter		
6.1 Verst. Zu	15	P: Proportional-Verstärkung für 'Ventil schließen'
6.2 Verst. Auf	2	P: Proportional-Verstärkung für 'Ventil öffnen'
6.3 Int-Zeit zu	7,5	I: Integrationszeit für 'Ventil schließen'
6.4 Int-Zeit auf	2,4	I: Integrationszeit für 'Ventil öffnen'
6.5 Stellzeit zu	0,35	T ₆₃ : Stellzeit für 'Ventil schließen'
6.6 Stellzeit au	0,35	T ₆₃ : Stellzeit für 'Ventil öffnen'
6.7 Totzone	0,1	Zulässige Totzone für Regeldifferenz
7 Pneumatikausg		Direkt Ansteuerung das IP-Modul zum Testen der Pneumatik
8 Sollwert		Manuelle Vorgabe der Ventilstellung zur Vorgabe von Sollwertsprüngen
8.2 12.5%-Schr.		Sollwert-Vorgabe in 12,5% Schritten mittels UP oder DOWN
8.2 1%-Schritte		Sollwert-Vorgabe in 1% Schritten mittels UP oder DOWN
8.3 PST Starten		Starten Partial Stroke Test

Fortsetzung auf nächster Seite

9 Werkstatt			
9.1 Werkseinst.			Rücksetzen der Konfiguration auf Einstellung 'ab Werk' danach Zustand AUSSER BETRIEB
9.2 Kalib. 4 mA			Eingangsstrom auf 4 mA kalibrieren
9.3 Kalib. 20 mA			Eingangsstrom auf 20 mA kalibrieren
9.4 Kalib. -45°			Positionsmesswert auf -45° kalibrieren
9.5 Kalib. +45°			Positionsmesswert auf +45° kalibrieren
9.6 Grundeinst 1			Rücksetzen der Konfiguration und Kalibrierungen (!) auf Einstellung 'ab Werk' für einfachwirkenden Ausgang → danach Zustand AUSSER BETRIEB
9.7 Grundeinst 2			Rücksetzen der Konfiguration und Kalibrierungen (!) auf Einstellung 'ab Werk' für doppelwirkenden Ausgang → danach Zustand AUSSER BETRIEB
9.8 Setze Online			Stellungsregler Online Setzen (nur für Service)
9.9 Menüsprache			Sprache auf dem LCD:
9.9.1 English	✓		Standard
9.9.2 Deutsch			Standard
9.9.3 Français			Vorselektierte / Frei wählbare Menüsprache
9.10 LCD Orient			Schriftrichtung auf dem LCD:
9.10.1 Normal	✓		Normale Ausrichtung der LCD-Anzeige
9.10.2 Gedreht			Gedrehte Ausrichtung der LCD-Anzeige
9.11 Kal. Feedbk			Kalibrierung des Analogen Stellungsumformers 4-20 mA
9.11.1 Kal. 4mA			Kalibrierung von 0% bei 4 mA
9.11.2 Kal. 20mA			Kalibrierung von 100% bei 20 mA
10 Busadresse - Profibus PA			Nur bei Profibus.
10.1 Adresse LSB			Bereich von Dez. 0 / Hex 00 bis Dez. 15 / Hex 0F
10.2 Adresse MSB			Bereich von Dez. 0 / Hex 00 bis Dez. 112 / Hex 70
10.3 Adresse		126	Anzeige der Busadresse von Dez. 1...127 (Hex 00...7F)
10 FOUNDATION Fieldbus H1			Nur bei Foundation Fieldbus.
10.1 Simulation			
Gesperrt	✓		Simulation gesperrt
Freigegeben			Simulation freigegeben
10.2 Profil			
Link Master	✓		Link Master aktiv
Basisgerät			kein Link Master

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Global Customer Support
Toll free: 1-866-746-6477
Global: 1-508-549-2424
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<http://support.ips.invensys.com>

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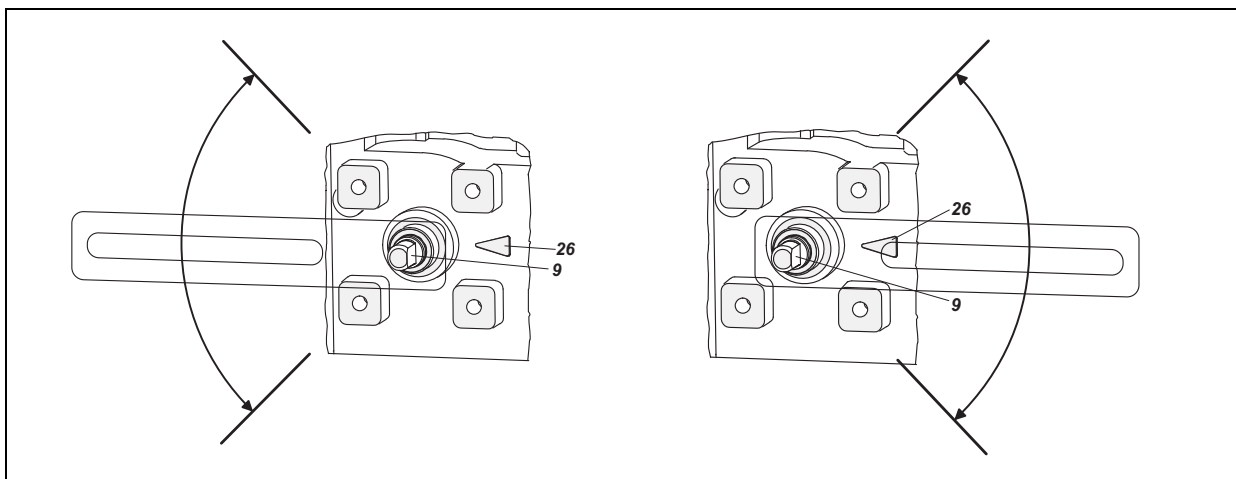
DOKT 534 022 311
FD-QG-PO-002-DE

SRD991 Positionneur intelligent

Ces instructions sont une aide pour une mise en service rapide. Pour plus d'information sur le produit veuillez-vous reporter aux documents standards «fiche technique» et «Instructions de montage et de service» disponible sur internet.

1. MONTAGE SUR SERVOMOTEUR

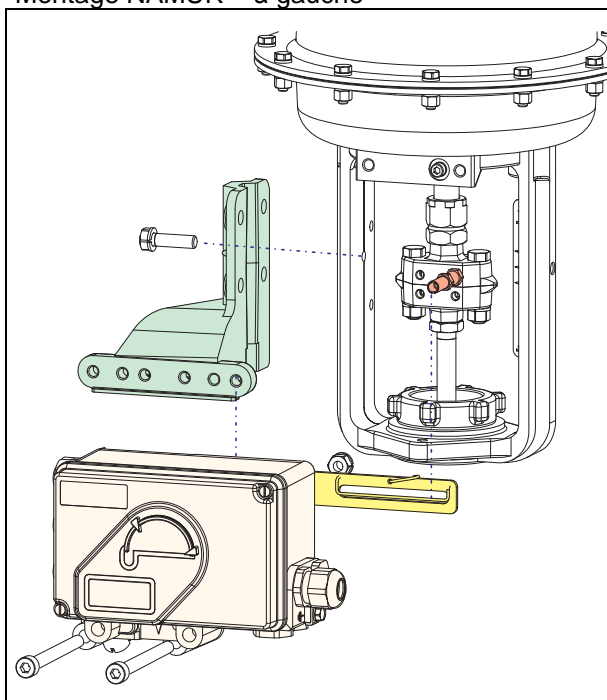
En fonctionnement la flèche **26** doit toujours pointer le méplat de l'axe de traversée **9**. La zone de travail est de $\pm 45^\circ$ autour de la position centrale.



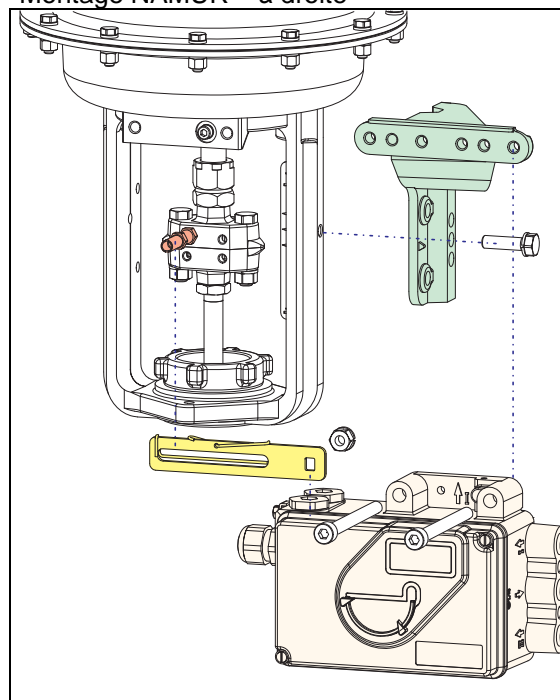
Les jeux mécanique dans le montage sont sources de mauvais contrôle, d'oscillation et d'instabilité ainsi que d'un long temps nécessaire pour l'autostart. Le montage du positionneur doit être fait selon les règles de l'art et utiliser uniquement des pièces d'origines.

MONTAGE SUR SERVOMOTEURS LINÉAIRES

Montage NAMUR – à gauche -

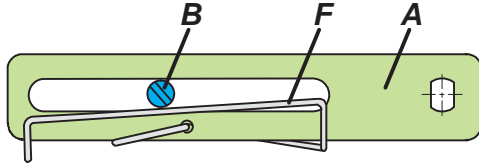


Montage NAMUR – à droite -

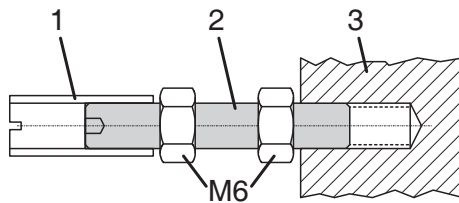
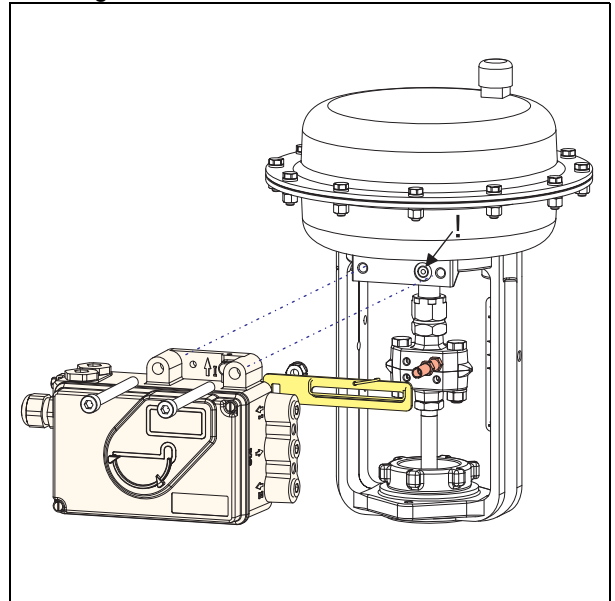


MONTAGE SUR SERVOMOTEURS LINÉAIRES (continuer)**Levier d'accouplement pour servomoteurs linéaires:**

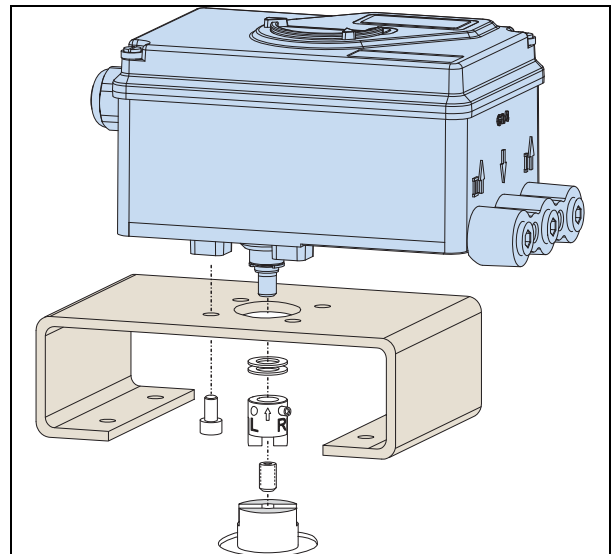
Le doigt d'accouplement **B** doit se trouver dans la lumière du levier d'accouplement **A** et le ressort de compensation **F** doit être en contact avec le doigt d'accouplement.

**doigt d'entrainement B::**

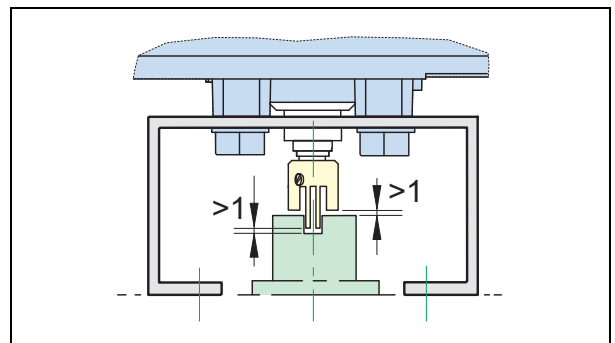
1 douille fileté 2 tige 3 pièce d'accouplement

**Montage direct****MONTAGE SUR SERVOMOTEURS ROTATIFS**

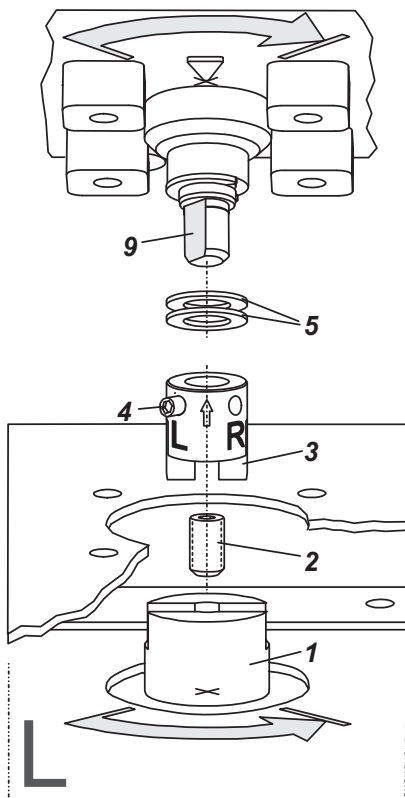
- Ne pas visser la vis **4** contre le filetage de l'axe de traversée **9**, mais sur le méplat!
- En fonctionnement le méplat de l'axe de traversée **9** doit tourner devant la flèche **26**.



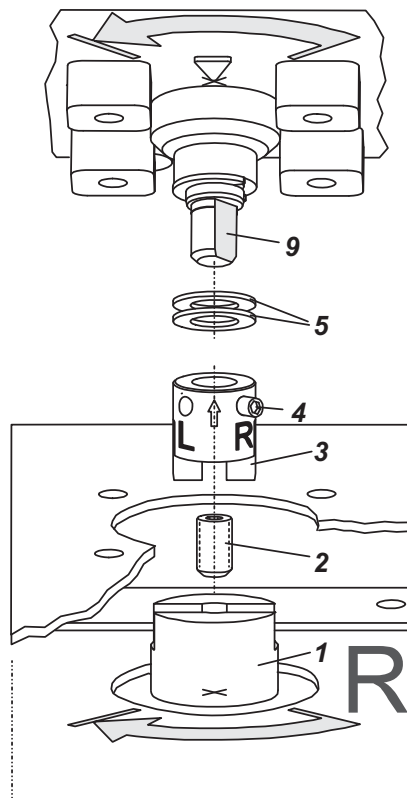
- L'axe du servomoteur **1** s'allonge sous l'effet de la chaleur produite lors du fonctionnement du servomoteur. C'est pourquoi l'adaptateur **3** doit être monter de façon à ce qu'il y ait, entre lui et l'axe de transmission **1**, un jeu d'environ 1 mm. Ce jeu peut être obtenu en ajoutant un nombre approprié de rondelles **5** sur l'axe de traversée **9**.



Servomoteur, sens de rotation anti-horaire



Servomoteur, sens de rotation horaire

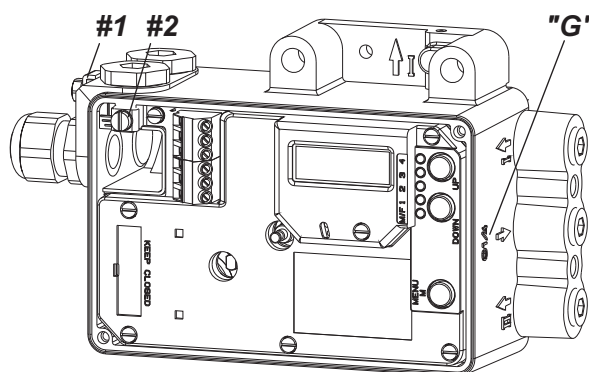


2. RACCORDEMENTS

Avant le montage des raccords pneumatiques vérifier le type de filetage du positionneur. Si une lettre "G" est gravée sur le boîtier cela veut dire que le filetage est G1/4 (au lieu de NPT).

Mise à la terre

Le raccordement à la terre peut se faire avec la vis #1 ou avec la vis #2 (à l'intérieur du compartiment raccords électriques).

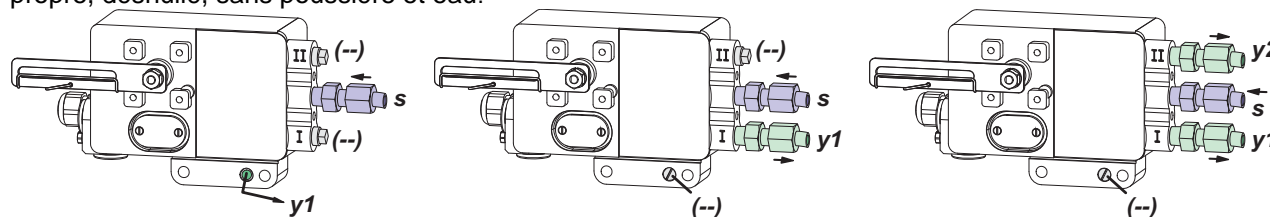


RACCORDEMENTS PNEUMATIQUES

ATTENTION

Pour éviter tout risque de blessure résultant d'éjection de pièces, ne pas dépasser la pression d'alimentation maximum du positionneur et du servomoteur. Pour éviter tout risque de blessure et dégâts dû à des mouvement brusque à la mise sous pression: **En aucun moment ne jamais mettre vos doigts ou tout autre objet dans la vanne ou dans le pièces en mouvement du servomoteur et du mécanisme de transmission de la position. Ne jamais toucher la partie postérieur du positionneur.** Raccorder l'air d'alimentation uniquement quand les sorties pneumatique y1 (et y2 en cas de double effet) sont elles-même raccordées.

Air d'alimentation (s) : 1,4 à 6 bar (en respectant la pression de travail maximum du servomoteur) air propre, déshuilé, sans poussière et eau!



Simple effet, montage direct
s air d'alimentation y1, y2 sorties pneumatiques (-- fermé

Simple effet

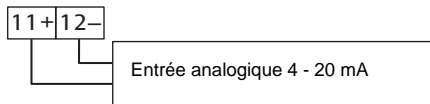
Double effet

3. RACCORDEMENTS ÉLECTRIQUES

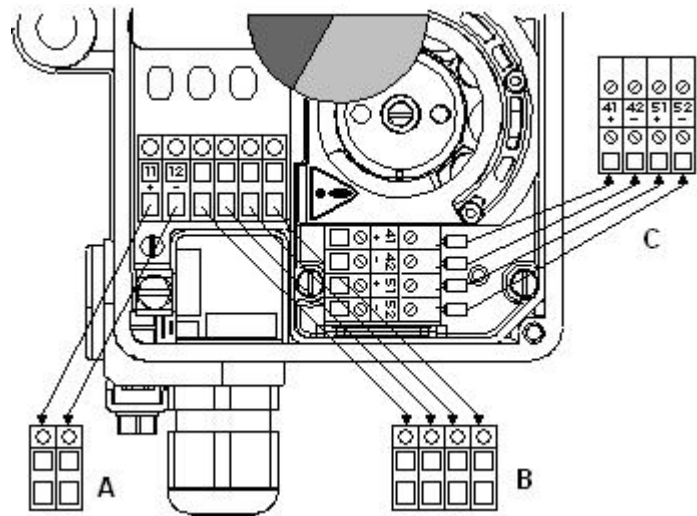
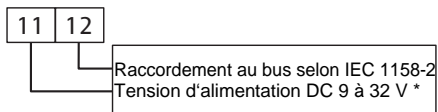
Les recommandations de sécurité du document EX EVE0001 ainsi que les recommandations de la PSS EVE0105 et de la MI EVE0105 doivent être observées !

3.1 Signal d'entrée Bornier A

3.1.1 SRD991-xD (sans communication) SRD991-xH (HART)



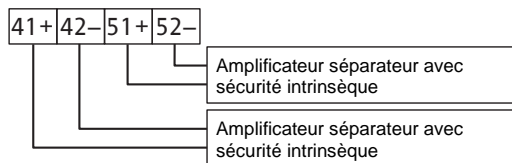
3.1.3 SRD991-xP (PROFIBUS PA) SRD991-xQ (FIELD BUS FF)



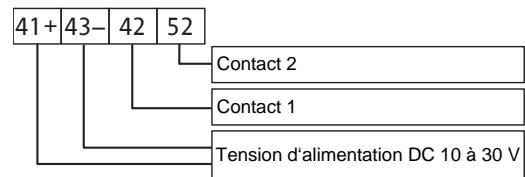
3.2 Fins de course Bornier C

3.2.1 SRD991-xxxT ou U

Capteurs inductifs technique deux fils, selon DIN 19234 ou NAMUR



3.2.2 SRD991-xxxR



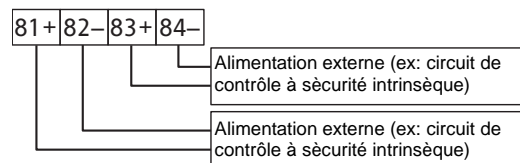
3.2.3 SRD991-xxxV

Attention : Pour le raccordement des micro-contacts respecter les recommandations de la MI (instructions de mise en service) et du document EX EVE0001.

3.3 Option Board Bornier B

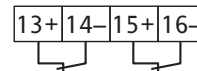
3.3.1 Deux sorties binaires (SRD991-xxP)

Technique deux fils.
Configuration selon DIN 19234 ou configuration "tout ou rien".



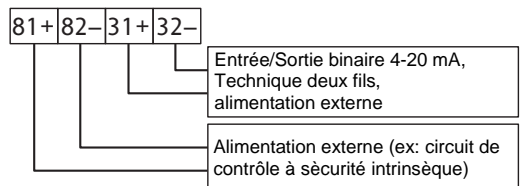
3.3.2 Deux entrées binaires (SRD991-xxB)

Entrées binaires avec alimentation interne pour raccordement sur capteurs ou contact (contacts fermés pour un fonctionnement normal!)



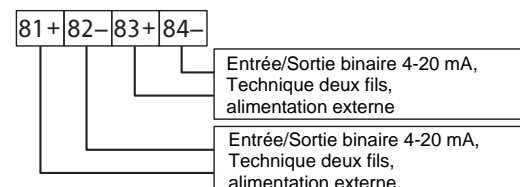
3.3.3 Recopie de position 4-20 mA + alarme (SRD991-xxQ ou SRD991-xxF)

Sortie analogique 4 à 20 mA et sortie binaire technique 2 fils. Configuration selon DIN 19234 ou configuration "tout ou rien".



3.3.4 Deux entrées/sorties binaires (SRD991-xxE)

Technique deux fils.
Configuration selon DIN 19234 ou configuration "tout ou rien".



* Pour les installations dans des zones à sécurité intrinsèque se reporter aux certificats et aux labels pour les tensions maxima d'utilisation.

4. MISE EN SERVICE (au moyen des boutons poussoirs et de l'écran LCD ou des LED)

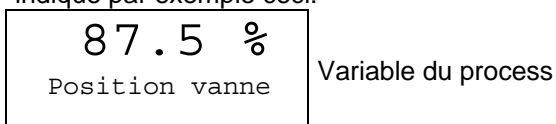
Après le montage sur le servomoteur, les raccordements pneumatiques et électriques faits, procéder comme ci dessous. Toute la configuration peut être réalisée au travers des touches locales et de l'écran LCD.

ATTENTION

Pour éviter tout risque de blessure et dégâts dû à des mouvement brusque durant la mise en service: **En aucun moment ne jamais mettre vos doigts ou tout autre objet dans la vanne ou dans le pièces en mouvement du servomoteur et du mécanisme de transmission de la position. Ne jamais toucher la partie postérieur du positionneur.**

EN SERVICE:

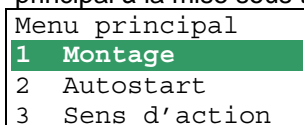
En fonctionnement (déjà configuré) l'écran indique par exemple ceci:



Pour entrer dans la configuration appuyer sur (M) et le menu principal apparaît.

CONFIGURATION avec les boutons poussoirs et l'écran LCD

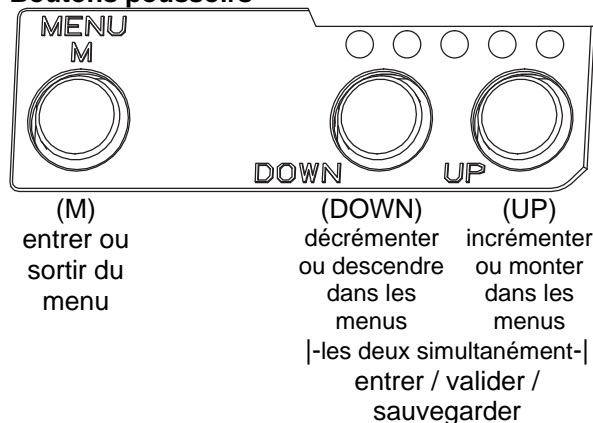
Quand le SRD n'a pas été configuré préalablement, apparaît automatiquement le menu principal à la mise sous tension:*)



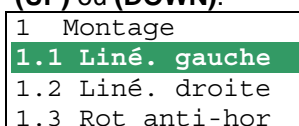
(En mode configuration le menu choisi apparaît en inverse vidéo.)

Dans le menu 1 doit être sélectionné le type de montage: Après avoir appuyé sur **(UP+DOWN)**, l'écran du SRD affiche ceci.

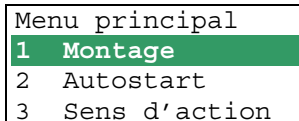
Boutons poussoirs



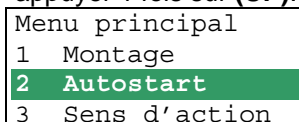
Choisissez le type de montage avec les touches **(UP)** ou **(DOWN)**.



Appuyé sur **(UP+DOWN)** simultanément pour sauvegarder. Le SRD revient au niveau de la sélection des menus:



Pour le menu suivant (= menu 2, AUTOSTART) appuyer 1 fois sur **(UP)**.



Appuyé sur **(UP+DOWN)** simultanément pour entrer le menu pour choisissez l'Autostart:

(Suite sur la page suivante...)

*) À la livraison la langue utilisée par l'écran LCD est l'anglais. Le Français peut être sélectionné à condition d'avoir un appareil où le Français est prévu ou téléchargé. Pour ceci aller dans le menu 9.8.2 et effectuer le changement de langue.

Plusieurs Autostart sont disponibles. Choisissez avec les touches **(UP)** ou **(DOWN)**.

2 Autostart	
2.1 Butée méca.	--> Uniquement les butées mécaniques sont déterminées
2.2 Standard	--> Autostart standard recommandé pour les applications standards.
2.3 Optimisé	--> Comportement rapide (petit overshoot possible).
2.4 Amortis	--> Comportement légèrement amortis pour éviter tout overshoot.
2.5 Agressif	--> Comportement très rapide avec petit overshoot.

Appuyé sur **(UP+DOWN)** simultanément pour confirmer et lancer l'Autostart désiré. La fonction Autostart est composée de étapes successives qui sont visualisées à chaque fois sur l'écran LCD.

Autostart terminé, le SRD est automatiquement **EN SERVICE**:

87.5 % Position vanne	Variable du process	87.5 % Position vanne	Messages d'erreur voir ci dessous.
		Ctrl diff erreur	

5 DÉPANNAGE (pour plus d'information voir MI EVE0105 E)

Autostart err 1	
Description du message	Solution
Alimentation d'air trop faible	Vérifier l'alimentation d'air
Le levier (servomoteur linéaire) est monté dans le mauvais sens. Le potentiomètre est en dehors de sa plage de lecture de $\pm 47^\circ$	Vérifier le montage du levier ; le méplat doit être en face de la flèche du positionneur
L'adaptateur (servomoteur rotatif) est monté dans le mauvais sens (R et L ont été inversés)	Vérifier le montage
Les sorties pneumatiques vers le servomoteur sont bouchées ou ne sont pas étanches, en cas de montage direct le bouchon au dos du positionneur n'est pas retiré.	Vérifier les connexions pneumatiques,
Les butées mécaniques sont indéterminables	Vérifier le montage / la pression d'air d'alimentation soit suffisante / la gamme de ressort du servomoteur
En cas d'utilisation d'un booster ou spool valve, Paramètre de régulation indéterminable car le débit d'air est trop important	Retirer le booster. Changer de version pour un positionneur sans spool valve
Paramètre de régulation indéterminable car la capacité d'air est trop grande	Utiliser un booster.
Installation de mauvais paramètres de régulation	Reset de la configuration avec Menu 9.1

Optionboard err	
Description du message	Solution
La configuration de l'option board est mauvaise (par exemple option board ajoutée a posteriori)	Vérifier la fixation de l'option board Confirmer l'ajout ou la substitution de l'option board en appuyant simultanément (UP)+(DOWN)
Mauvaise connexion	Les connexions aux bornes ont été inversées Vérifier les raccordements Vérifier la fixation de l'option board
option board défectueuse	Changer l'option board

Ctrl diff error	
Description du message	Solution
Problèmes liés au servomoteur comme par ex. les frottements	Vérifier le servomoteur et la vanne
L'alimentation d'air est insuffisante	Vérifier l'alimentation d'air/le filtre détenteur
Paramètres de régulation erronés, par ex. un gain trop faible	Vérifier les paramètres de régulation et les composants pneumatiques
Module IP ou amplificateur défectueux	Vérifier et changer la pièce si nécessaire

6 ARBORESCENCE DES MENUS POUR LE SRD991 / SRD960

Menu principal

	Config sortie d'usine	Description
1 Montage	✓	Montage direct ou à gauche de l'arcade sur un servomoteur linéaire Montage à droite de l'arcade sur un servomoteur linéaire Montage sur servomoteur rotatif qui tourne dans le sens anti-horaire Montage sur servomoteur rotatif qui tourne dans le sens horaire Pour la version Top Mounting (seulement pour SRD991)
1.1 Liné. gauche		
1.2 Liné. droite		
1.3 Rot anti-hor		
1.4 Rot horaire		
1.5 Lineaire		
2 Autostart		Uniquement butée mécanique Autostart standard recommandé pour les applications standards Autostart avec réponse optimisée. Comportement rapide (petit overshoot possible) Autostart avec réponse optimisée. Comportement légèrement amortis pour éviter tout overshoot Autostart avec réponse optimisée. Comportement très rapide avec petit overshoot
2.1 Butée méca.		
2.2 Standard		
2.3 Optimisé		
2.4 Amortis		
2.5 Agressif		
3 Sens d'action	✓	La vanne s'ouvre avec le signal qui va de 0 à 100% La vanne se ferme avec le signal qui va de 0 à 100%
3.1 SRD		
3.1.1 Direct		
3.1.2 Inverse		
3.2 Recopie	✓	Augmentation du courant lors de l'ouverture de la vanne Diminution du courant lors de l'ouverture de la vanne
3.2.1 Direct		
3.2.2 Inverse		
4 Courbe carac.	✓	Courbe caractéristique linéaire Courbe caractéristique égal pourcentage 1:50 Courbe carac. inverse égal pourcentage 1:50 (ouverture rapide) Courbe caractéristique spécifique définie via communication
4.1 Linéaire		
4.2 Egal %		
4.3 Inv. égal %		
4.4 Spécifique		
5 Limite/alarme		<i>Menu non disponible localement pour les versions LED des variantes FF, ProfibusPA,</i> Limite de fermeture (la vanne n'ira pas en dessous de cette valeur) Etanchéité à la fermeture (sous cette valeur la vanne se ferme) Etanchéité à l'ouverture (au dessus de cette valeur la vanne s'ouvre) Limite d'ouverture (la vanne n'ira pas au dessus de cette valeur) Valeur de courant pour le 0% Valeur de courant pour le 100% Valeur en dessous de laquelle une alarme sera donnée Valeur au dessus de laquelle une alarme sera donnée Nouvelle valeur de course pour le point 0% Nouvelle valeur de course pour le point 100% Valeur de course en mm ou en degrés Configuration des unités de température et de pression en SI (Système internationale) ou unités Anglosaxone US
5.1 Limite basse	0 %	
5.2 Cutoff 0%	1 %	
5.3 Cutoff 100%	100 %	
5.4 Limite haute	100 %	
5.5 Split r.0%	4 mA	
5.6 Split r.100%	20 mA	
5.7 Alarme basse	-10 %	
5.8 Alarme haute	110 %	
5.9 Nouveau 0%	4 mA	
5.10 Nouveau100%	20 mA	
5.11 Course	x° / 20mm	
5.12 Unités	SI	
6 Paramètres		Paramètre de gain à la fermeture Paramètre de gain à l'ouverture Paramètres d'amortissement à l'ouverture Paramètre d'amortissement à la fermeture Paramètre de retard à la fermeture Paramètre de retard à l'ouverture Paramètre de bande morte
6.1 P Gain ferme	15	
6.2 P Gain ouvre	2	
6.3 I fermeture	7.5	
6.4 I ouverture	2.4	
6.5 Retard ferme	0.35	
6.6 Retard ouvre	0.35	
6.7 Bande morte	0.1	
7 Sortie pneu.		Pilotage direct du convertisseur IP (de 0 à 100% de la pression d'air)
8 Consigne manu		Consigne manuelle local (pour forcer une valeur d'ouverture) Saut de 12,5% à chaque pression sur Up ou Down Saut de 1% à chaque pression sur Up ou Down Démarrage Partial Stroke Test
8.2 Pas de 12,5%		
8.2 Pas de 1%		
8.3 Lancer PST		

Suite sur la page suivante

9	Reset calibr.		
	9.1	Reset Config	Reset de l'appareil et retour à la configuration sortie d'usine
	9.2	Calib. 4 mA	Calibrage de la lecture de 4 mA
	9.3	Calib. 20 mA	Calibrage de la lecture de 20 mA
	9.4	Calib. -45°	Calibrage de la lecture de la position -45°
	9.5	Calib. +45°	Calibrage de la lecture de la position +45°
	9.6	Reset+1 effet	Reset de l'appareil et forçage de l'appareil en simple effet
	9.7	Reset+2 effet	Reset de l'appareil et forçage de l'appareil en double effet
	9.8	Forc. Online	Forçage en mode Online
	9.9	Choix Langue	Langue sur l'écran LCD
	9.9.1	English	✓ Standard English
	9.9.2	Deutsch	Standard Deutsch
	9.9.3	Français	Langue sélectionnée à la commande ou téléchargée ultérieurement
	9.10	Sens écr.LCD	
	9.10.1	Normal	✓ Sens d'écriture normal sur l'écran
	9.10.2	Tête-bêche	Ecran retourné (tête-bêche)
	9.11	Cal. Recopi	Calibrage de la sortie en courant de la recopie de position
	9.11.1	Cal. 4 mA	Ajustement de la valeur de 0% à 4 mA
	9.11.2	Cal. 20mA	Ajustement de la valeur de 100% à 20 mA
10	Adresse bus - Profibus PA		Seulement Profibus.
	10.1	Adresse LSB	Champ de Dec. 0 / Hex 00 jusqu'à Dec. 15 / Hex 0F
	10.2	Adresse MSB	Champ de Dec. 0 / Hex 00 jusqu'à Dec. 112 / Hex 70
	10.3	Adresse	126 Visualisation de l'adresse de Dec. 1...127 (Hex 00...7F)
10	FOUNDATION Fieldbus H1		Seulement FF.
	10.1	Simulation	✓
		Verouillé	Simulation impossible
		Possible	Simulation possible
	10.2	Profile	
		Link Master	✓ Link Master activé
		Basic Device	Link Master désactivé

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Global Customer Support
Toll free: 1-866-746-6477
Global: 1-508-549-2424
Website:
<http://support.ips.invensys.com>

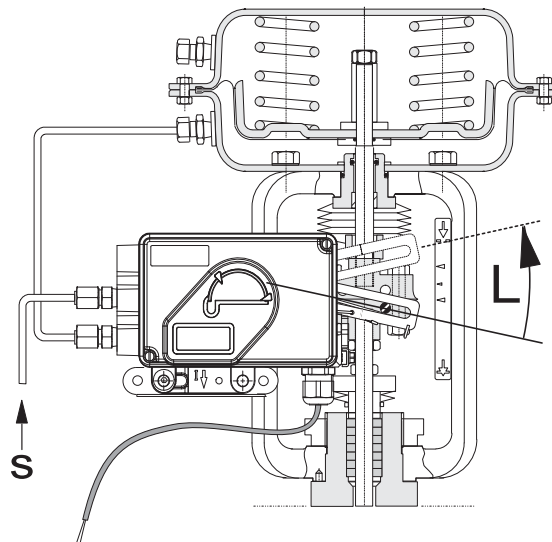
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DOKT 534 022 322
FD-QG-PO-002-FR

SRD991 Posizionatore Intelligente

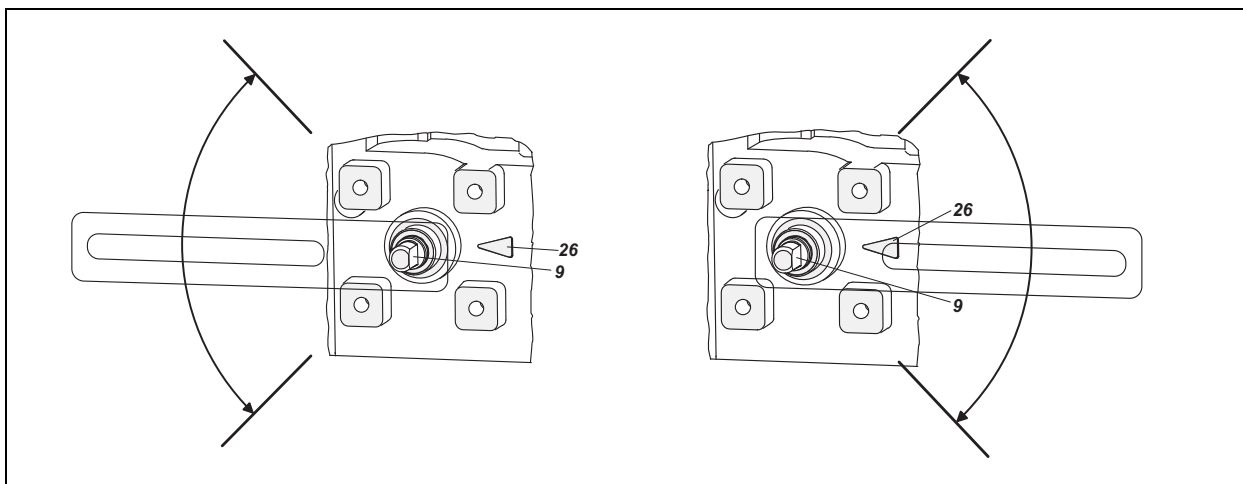
Queste istruzioni sono un supporto per consentire una guida rapida al montaggio e alla messa in servizio del posizionatore. Per informazioni dettagliate del prodotto fate riferimento alla documentazione ufficiale "Master instruction" e "Product Specification Sheet" disponibili sul sito Internet.

Versione con LCD (e LED):
SRD991 - tutte versioni -



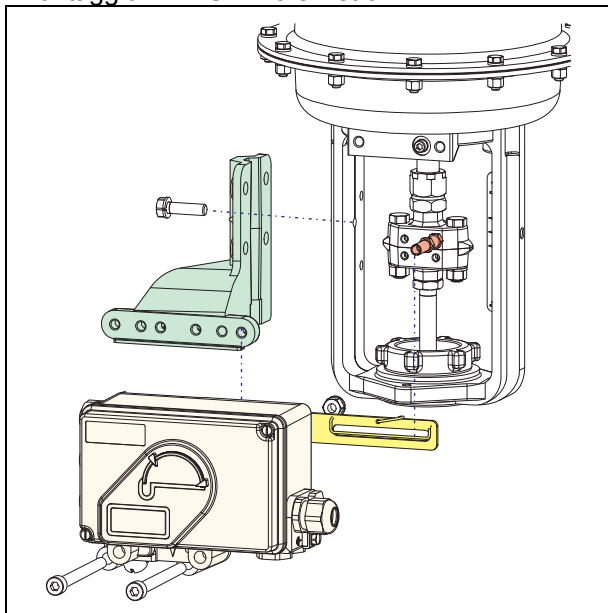
1. MONTAGGIO SULL'ATTUATORE

Durante l'operazione di montaggio il lato smussato del perno **9**, sul retro del posizionatore, deve sempre essere rivolto verso la freccia **26**. L'angolo di lavoro da questa posizione è di $\pm 45^\circ$.

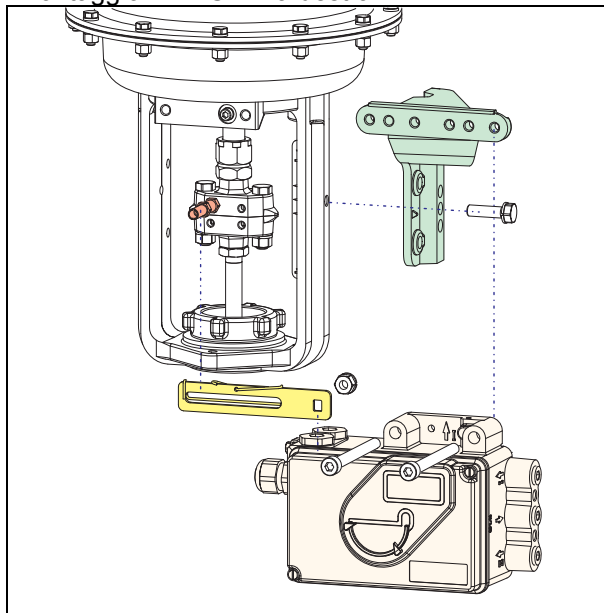


MONTAGGIO SU ATTUATORI LINEARI

Montaggio NAMUR – a sinistra -

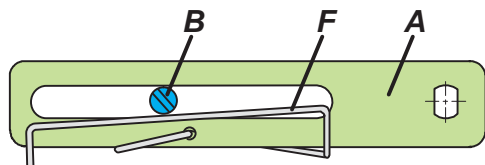


Montaggio NAMUR – a destra -



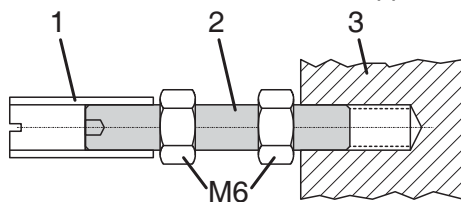
Leva di Feedback per attuatori lineari :

Il perno **B** va inserito nella feritoia della leva di feedback **A**. La molla di compensazione **F** tocca il perno

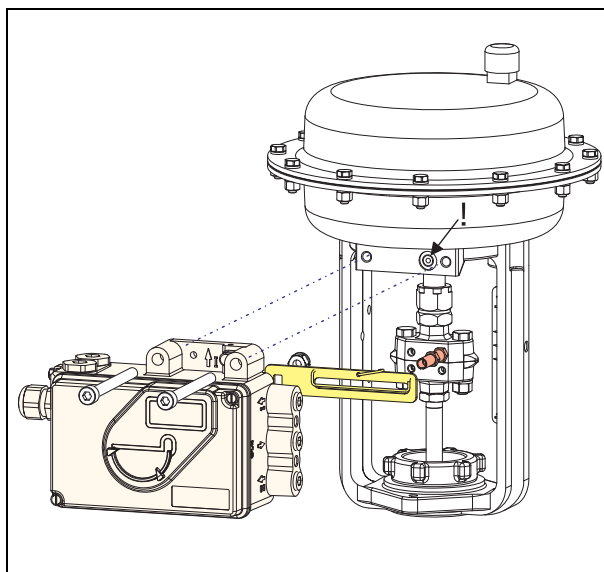


Perno di accoppiamento B:

1 Bussola 2 Perno 3 Giunto di accoppiamento

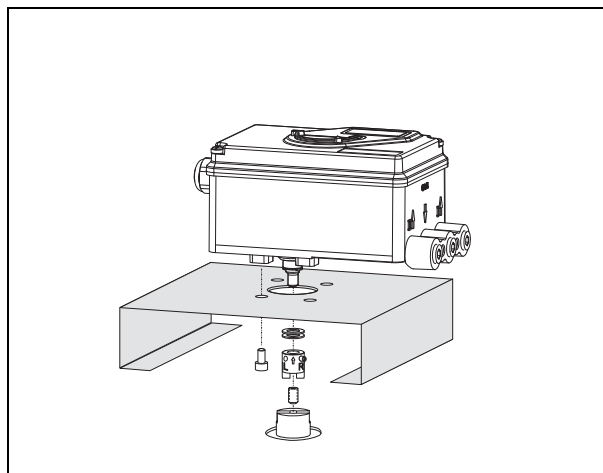


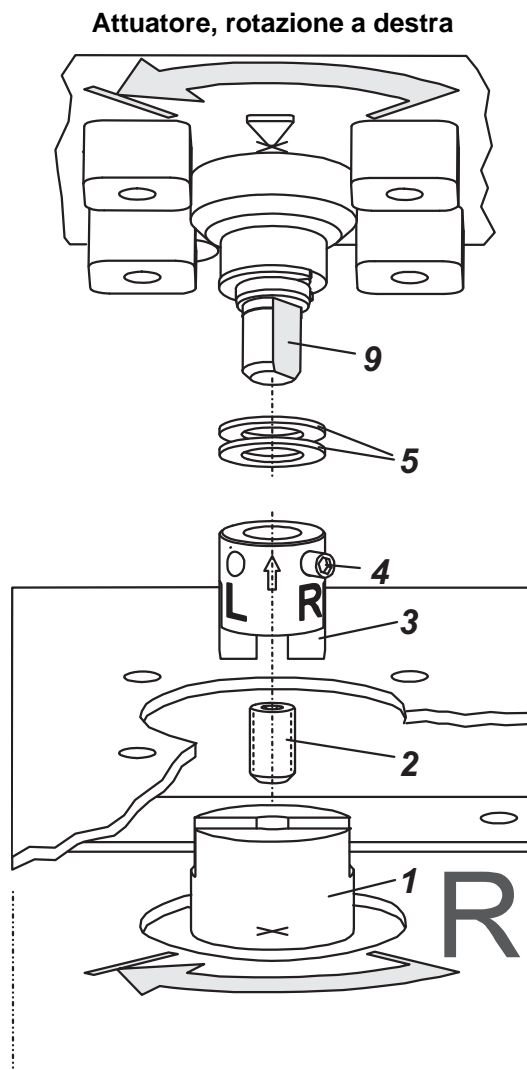
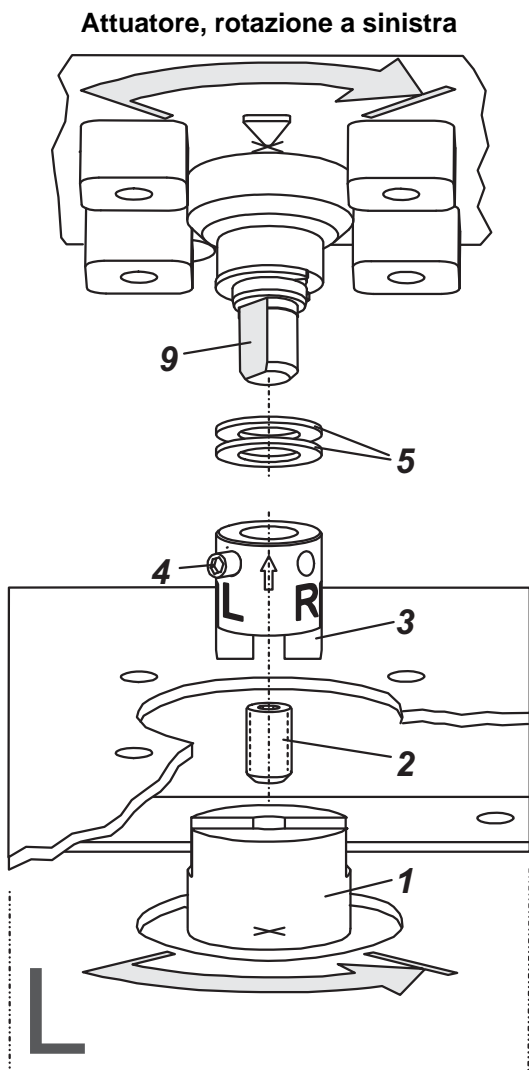
Montaggio diretto



MONTAGGIO SU ATTUATORI ROTATIVI

- Non avvitare il grano sul lato filettato del perno **9**
- Durante il funzionamento, il lato smussato del perno **9** deve muoversi (0 ↔ 100 %) sul lato indicato dalla freccia **26**.
- Quando la temperatura aumenta, l'albero dell'attuatore **1**, per effetto della dilatazione termica, si allunga. L'adattatore per movimento rotativo **3** deve essere montato in modo da garantire un gioco di circa 1 mm(0.04 in.) tra l'albero dell'attuatore **1** e l'adattatore rotativo **3**. Questo si ottiene infilando un numero appropriato di rondelle **5** nel perno di feedback **9**, prima di fissare l'adattatore rotativo. Due rondelle dovrebbero essere sufficienti per garantire un gioco di 1 mm.



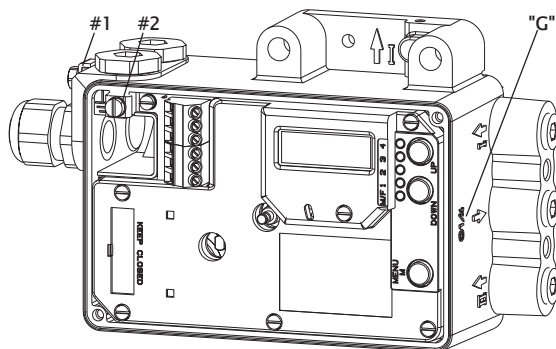


2. COLLEGAMENTI

Prima di avvitare pressa cavi o raccordi pneumatici, verificare il tipo di filettatura. La lettera "G" sulla custodia significa che i raccordi pneumatici devono essere in G1/4 (al posto di NPT).

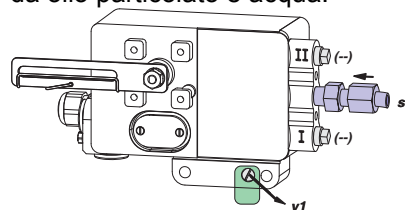
Messa a terra

Collegare alla terra tramite la vite #1 o vite #2 (nel compartimento elettrico).

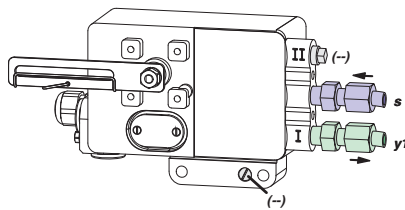


COLLEGAMENTI PNEUMATICI

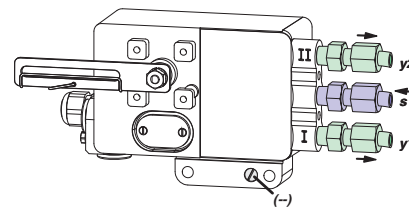
Aria di alimentazione (s): da 1,4 a 6 bar (ma non maggiore della pressione massima dell'attuatore) esente da olio particolato e acqua!



Singolo effetto, montaggio diretto
s aria di alimentazione y1, y2 uscite pneumatiche (-) chiuso



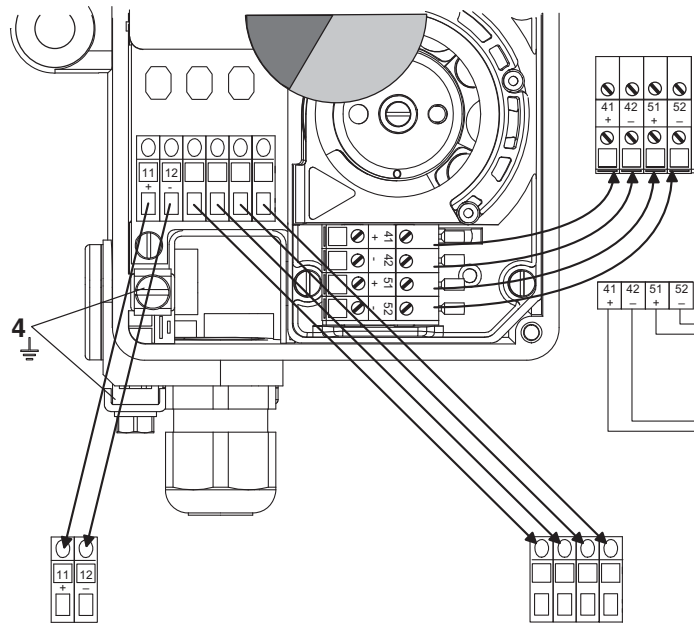
Singolo effetto
s aria di alimentazione y1, y2 uscite pneumatiche (-) chiuso



Doppio effetto

3. COLLEGAMENTI ELETTRICI

Le raccomandazioni di sicurezza del documento EX EVE001 così come le raccomandazioni del PSS EVE0105 e del MI EVE0105 del SRD991 devono essere rispettate.



3.2 Fine corsa

SRD991-xxxT o U

Sensori di prossimità a due fili, secondo DIN 19234 o NAMUR
Alimentazione 8 Vcc

Amplificatore con circuito di separazione a sicurezza intrinseca

Amplificatore con circuito di separazione a sicurezza intrinseca

SRD991-xxxV

Attenzione : Il collegamento dei micro-switch deve essere fatto rispettando le raccomandazioni del MI (montaggio e servizio) e le raccomandazioni di sicurezza del documento EX EVE0001.

3.1 Segnale di comando (Setpoint)

Per SRD991-xD (senza comm.)

Per SRD991-xH (HART)

Per SRD991-xE (FoxCom it1)



Segnale 4 a 20 mA

Per SRD991-xF (FoxCom it2)



Alimentazione 13 a 36 Vcc *

Per SRD991-xP (PROFIBUS-PA)

Per SRD991-xQ (FOUNDATION F. H1)



Collegamento al bus da campo in accordo alla IEC 1158-2

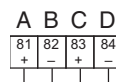
Alimentazione 9 a 32 Vcc*

3.3 Schede opzionali

Due uscite binarie (SRD991-xxP)

Tecnica due fili in accordo con la DIN 19234

Alimentazione 8 a 36 Vcc*



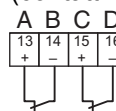
Amplificatore con circuito di separazione a sicurezza intrinseca

Amplificatore con circuito di separazione a sicurezza intrinseca

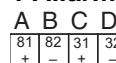
Due ingressi binari (SRD991-xxB)

Ingressi binari con alimentazione interna per il collegamento a sensori o contatti

(contatti **chiusi** in condizioni operative normali!)



Trasmettitore di posizione 4 a 20 mA (feedback) e 1 Allarme (SRD991-xxQ)



Uscita analogica 4 a 20 mA, Tecnica due fili, Alimentazione 8 a 36 Vcc*

Amplificatore con circuito di separazione a sicurezza intrinseca

* Per le installazioni in zona a sicurezza intrinseca, riportarci ai certificati e alle targhette segnaletiche per le tensione massime d'utilizzo.

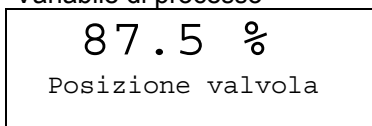
4. MESSA IN SERVIZIO (tramite i pulsanti locali e il display LCD o i LED)

Dopo aver provveduto al montaggio del posizionario sull'attuatore e al collegamento elettrico e pneumatico, procedete nel seguente modo. Tutta la configurazione può essere eseguita tramite i pulsanti locali e il display LCD o i LED.

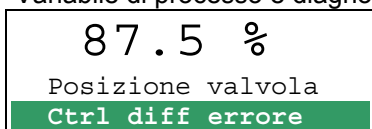
ATTENZIONE: Durante la configurazione e il funzionamento non mettere le dita nella parte posteriore del posizionario! LE PARTI IN MOVIMENTO POSSONO CAUSARE FERITE !

Visualizzazione al display LCD

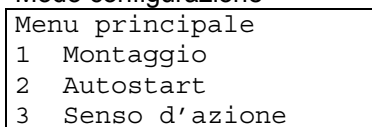
Variabile di processo



Variabile di processo e diagnostica

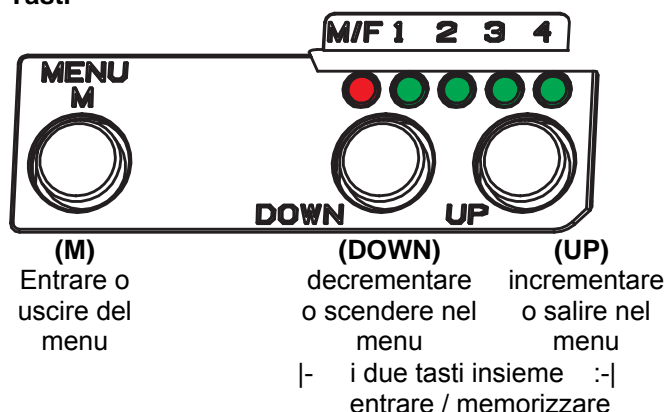


Modo configurazione



Nel modo configurazione il menu scelto compare evidenziato. I menu possono essere selezionati premendo i tasti **(UP)** o **(DOWN)**.

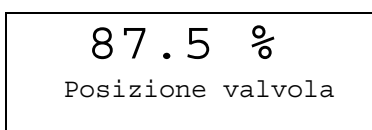
Tasti



Configurazione e messa in servizio con i tasti e ...

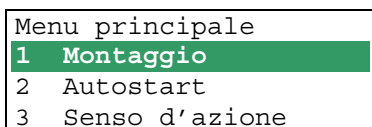
con il display LCD:

Durante il funzionamento il display LCD si presenta in questo modo.



Per entrare nella configurazione premere sul tasto **(M)** per accedere al menu principale.

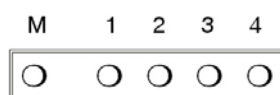
Se il posizionario non è stato mai configurato, all'accensione dello strumento il menu principale compare automaticamente sul display.*)



Selezionare il menu 1 per definire il tipo di montaggio.

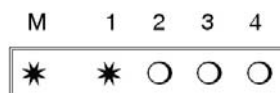
con le LED:

Durante il funzionamento tutti i LED sono spenti



Per entrare nella configurazione premere sul tasto **(M)** e la LED M e 1 lampeggiano in alternanza (= Menu 1)

Se il posizionario non è stato mai configurato, all'accensione dello strumento i LED M e 1 lampeggiano in alternanza.



Selezionare il menu 1 per definire il tipo di montaggio.

*) La pre-configurazione effettuata in fabbrica prevede la visualizzazione del menu in Inglese. Se l'apparecchio è predisposto sarà possibile selezionare la visualizzazione del menu in italiano. Per eseguire tale operazione andare nel menu 9.8.2 e selezionare il cambio di lingua.

Legenda : ○ LED spento, ● LED acceso, *LED lampeggiante

... e LCD:

Premere contemporaneamente **(UP)** e **(DOWN)** per 1 secondo per entrare nel Menu "tipo di montaggio".
Selezionare il tipo di montaggio premendo **(UP)** o **(DOWN)**.

1 Montaggio
1.1 Line destra
1.2 Line sinistra
1.3 Rot anti-orr

(Altri funzione con **(UP)**)

... e LED display:

M	1	2	3	4	
○	●	○	○	○	Attuatore lineare montaggio a sinistra o al centro
○	○	●	○	○	Attuatore lineare montaggio a destra
○	○	○	●	○	Attuatore rotativo rotazione anti-orario
○	○	○	○	●	Attuatore rotativo rotazione orari

Premere contemporaneamente **(UP)** e **(DOWN)** per 1 secondo per confermare e salvare.
Il posizionatore torna al funzione livello 1e si trova nuovamente al menu principale.

Menu principale
1 Montaggio
2 Autostart
3 Senso d'azione

Per accedere al secondo menu (= menu 2, Autostart) premere una volta **(UP)**.

Menu principale
1 Montaggio
2 Autostart
3 Senso d'azione

M	1	2	3	4
*	*	○	○	○

Per accedere al secondo menu (= menu 2, Autostart) premere una volta **(UP)**, i LED "M" e 2 lampeggiano in alternanza.

M	1	2	3	4
*	○	*	○	○

Premere contemporaneamente **(UP)** e **(DOWN)** per entrare nello funzione 'Autostart'.
Selezionare l'autostart desiderato con i tasti **(UP)** e **(DOWN)**.

2 Autostart
2.1 Battute
2.2 Standard
2.3 Ottimizzato

M	1	2	3	4	
○	●	○	○	●	Autostart standard

Più Autostart sono disponibili :

2.1 Battute

Solo le battute meccaniche sono ricercate.

○	○	●	●	○
---	---	---	---	---

2.2 Standard

Autostart standard raccomandato per le applicazioni standard.

○	●	○	○	●
---	---	---	---	---

2.3 Ottimizzato

Autostart con risposta ottimizzata. Risposta veloce (con possibili overshoot).

○	○	●	○	●
---	---	---	---	---

2.4 Smorzato

Autostart con risposta ottimizzata. Risposta leggermente smorzata per evitare overshoot.

○	●	○	●	○
---	---	---	---	---

2.5 Agressivo

Autostart con risposta ottimizzata. Risposta molto veloce con overshoot contenuto.

○	●	●	○	○
---	---	---	---	---

Premere contemporaneamente **(UP)** e **(DOWN)** per confermare e lanciare l'Autostart desiderato.

L'Autostart è composto di 4 tappe successive che sono visualizzate ogni volta sul display LCD e sulle LED. L'Autostart finito (LED spenti), il SRD è in servizio.

Struttura del menu principale per il SRD991 / SRD960

Menu principale	Config. uscita di fabbrica	Descrizione
1 Montaggio		
1.1 Line. Sinist	✓	Montaggio su attuatore lineare diretto o a sinistra del castello
1.2 Line. Destra		Montaggio su attuatore lineare a destra del castello
1.3 Rot anti-orr		Attuatore rotativo che gira nel senso anti orario per aprire la valvola
1.4 Rot orrario		Attuatore rotativo che gira nel senso orario per aprire la valvola
2 Autostart		
2.1 Battute		Versione ridotta dell'autostart - solo le battute meccaniche
2.2 Standard		Autostart standard, raccomandato per applicazioni standard
2.3 Ottimizzato		Autostart ottimizzato con risposta veloce
2.4 Smorzato		Autostart ottimizzato con risposta smorzata senza overshoot
2.5 Agressivo		Autostart ottimizzato con risposta veloce con limitato overshoot
3 Sens d'azione		
3.1 Diretto	✓	La valvola si apre con il segnale che va da 0 à 100%
3.2 Inverse		La valvola si chiude con il segnale che va da 0 à 100%
4 Curva caratt.		
4.1 Lineare	✓	Curva caratteristica lineare
4.2 Equi %		Curva caratteristica equi percentuale 1:50
4.3 Inv. equi %		Curva caratteristica equi percentuale inversa 1:50 (apertura veloce)
4.4 Specifica		Curva caratteristica personalizzata definita via comunicazione
5 Limite/allarm		<i>Menu non disponibile per le versioni LED dei FF, ProfibusPA,</i>
5.1 Limite bassa	0%	Limite di chiusura (la valvola non andrà sotto questo punto)
5.2 Cutoff 0%	0%	Tenuta in chiusura (Sotto questo punto la valvola chiude completamente)
5.3 Cutoff 100%	100%	Tenuta in apertura (Sopra questo punto la valvola apre completamente)
5.4 Limite alta	100%	Limite di apertura (la valvola non andrà sopra questo punto)
5.5 Split r.0%	4mA	Valore di corrente per il 0%
5.6 Split r.100%	20mA	Valore di corrente per il 100%
5.7 Allarme bassa	-10%	Valore sotto il quale un allarme sarà dato
5.8 Allarme alta	110%	Valore sopra il quale un allarme sarà dato
5.9 Nuovo 0%	4mA	Nuovo valore di corsa per il 0%
5.10 Nuovo 100%	20mA	Nuovo valore di corsa per il 100%
5.12 Unita temp.	°C	Configurazione della temperatura in °C o °F
6 Parametri		
6.1 P Guad chius	15	Parametro del guadagno in chiusura
6.2 P Guad aper	2	Parametro del guadagno in apertura
6.3 I chiusura	7,5	Parametro di smorzamento in chiusura
6.4 I apertura	2,4	Parametro di smorzamento in apertura
6.5 Ritardo chiu	0,35	Parametro di ritardo in chiusura
6.6 Ritardo aper	0,35	Parametro di ritardo in apertura
6.7 Banda morta	0,12	Parametro di banda morta
7 Uscita pneu.		Pilotaggio diretto dell'uscita pneumatica
8 Input manuale		Set point manuale
8.2 Salti 12.5%		Salti di Setpoint di 12.5% ad ogni premuta su Up o Down
8.2 Salti 1%		Salti di Setpoint di 1% ad ogni premuta su Up o Down

Il seguito sulla pagina seguente...

9	Reset calibr.		
	9.1	Reset Config	Reset dell'apparecchio. Ritorno ai parametri di fabbrica
	9.2	Calib. 4 mA	Calibrazione del segnale d'ingresso 4mA
	9.3	Calib. 20 mA	Calibrazione del segnale d'ingresso 20mA
	9.4	Calib. -45°	Calibrazione della lettura della posizione -45°
	9.5	Calib. +45°	Calibrazione della lettura della posizione +45°
	9.6	Reset+1effet	Reset dell'apparecchio. Forzatura in modo semplice effetto
	9.7	Reset+2effet	Reset dell'apparecchio. Forzatura in modo doppio effetto
	9.8	Scelta lingua	
	9.8.1	English	✓ Lingua standard
	9.8.2	Deutsch	Lingua standard
	9.8.3	Italiano	Lingua selezionata all'ordine o caricata dopo
	9.9	Senso LCD	
	9.9.1	Normale	✓ Visualizzazione sul display normale
	9.9.2	Rovesciato	Visualizzazione sul display rovesciata
	9.10	Cal. Feedbk	Calibrazione del trasmettitore di posizione.
	9.10.1	Cal. 4mA	Calibrazione del 0% a 4mA
	9.10.2	Cal. 20mA	Calibrazione del 100% a 20mA
	10	- non utilizzato - per HART	
	10	indirizzo bus - PROFIBUS PA	
	10.1	Adresse LSB	Campo da Dec. 0 / Hex 00 fino a Dec. 15 / Hex 0F
	10.2	Adresse MSB	Campo da Dec. 0 / Hex 00 fino a Dec. 112 / Hex 70
	10.3	Adresse	126 Visualizzazione dell'indirizzo da Dec. 1...127 (Hex 00...7F)
	10	FF Config.	
	10.1	Simulazione	✓
		Impossibile	Simulazione inibita
		Possibile	Simulazione possibile
	10.2	Profile	
		Link Master	✓ Link Master attivato
		Basic Device	Link Master desattivato

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DOKT 534 022 349
FD-QG-PO-002-IT

Error Messages: (for more error messages see the Master Instruction at our Website)

LEDs	Description of message / LCD text	Remedy
M 1 2 3 4 ¾ - - ¼ -	Ill loop current	
Message 4: Input current outside of operating range	Check nameplate (INPUT) for correct version Message appears at : Analog or HART: input current under approx. 3.8 mA or above approx. 22 mA Fieldbus or FoxCom: input current under approx. 9 mA or above approx. 12 mA	check supply voltage (Analogue) or Bus voltage (Fieldbus), exchange SRD if necessary
M 1 2 3 4 ¾ ¼ - ¼ -	Pot problem	
Message 5: Position sensor	Position sensor input recognizes error	check 3-pole plug at electronic board check cable to sensor check sensor (Potentiometer: 5k +20% -0%)
	Position not within permissible rotation angle range. Lower deviation of the original 0% and exceeding of the original 100%, which have been determined by Autostart.	Check feedback lever mounting (flat area points to arrow on housing)
	During Autostart a change of the direction of movement was found	Acknowledge via key (✓) , then o.k.
		Check further possible reasons: valve seat worn-out; spindle lock out-of-line; carrier unit on spindle lock is damaged (for determination of valve position).
M 1 2 3 4 ¾ ¼ ¼ ¼ -	No supply press	
Message 7: Air supply / pneumatic error	Detection: spring closes: w > 2 % , but position < 1 % spring opens: w < 98 % , but position > 99 % without spring: no actuator change in direction of position signal	check air supply pressure lead cable separated possibly poor control parameters are set pneumatic parts blocked
M 1 2 3 4 ¾ - - - ¼	Autostart err 1	
Message 8: AUTOSTART defective	Air supply too low	Check air supply
	Feedback lever (linear actuator) or Coupling (rotary actuator) incorrectly linked. Potentiometer moves out of operating range of $\pm 47\%$ of 0° position	Check mounting. Flat area points to arrow on housing
	Coupling (rotary actuator) incorrectly linked (R and L interchanged)	Check mounting
	Pneumatic output to actuator closed or untight/ When direct mounting onto FlowTop or FlowPak, the screw plug y1-d is not removed.	Check pneumatic connections
	Mechanical stops not determinable	Check spring movement of actuator / check air supply / Check mounting
	When using a booster or spool valve, no control parameters can be determined, since air capacity is too high.	Device version is not suitable for this actuator; select version with smaller air capacity or remove booster.
	Control parameter too high since air capacity is too high (in general, oscillation in valve movement)	Use a booster or the version with spool valve. Reduce control parameter prop.-gain (Menu 6.1 and 6.2) to Code 10 = value 26.6.
	Possibly incomprehensible configuration data	Reset configuration, see Menu 9.1
M 1 2 3 4 ¾ ¼ - - ¼	Autostart err 2	
Message 9: AUTOSTART defective	Configuration to single-acting instead of double-acting actuator	Initialize factory calibration for double-acting in Menu 9.7
M 1 2 3 4 ¾ ¼ ¼ - ¼	Ctrl diff error	
Message 11: Remaining control deviation	Actuator problems (high friction or blocked)	Check actuator
	Insufficient air supply	Check air supply / air filter
	Insufficient parameters for position controls, for example, amplification too small	Check control parameter, check pneumatic components
	IP module or pneumatic amplifier defect	Check in Menu 7; replace if necessary

Diagnosis without LED or LCD inform:

Fault	Possible cause	Solution
Positioner not operational using key pads	No input signal at 11, 12	Connect input signal
	Local operation blocked (write protection)	Remove blockage via communication
	No automatic power up (Reset)	Reset SRD with keys
	A key got jammed	Release cover screws, check menu functions, retighten cover
	Failure in the positioner	send device to manufacturer
Autostart not completed (> 45 min)	Actuator volume too large	stop Autostart and carry out extended Autostart, see chapter 8.3, Menü 2 or apply booster
	Failure in the positioner, otherwise Message 8, 9	carry out Autostart again, see chapter. 8.1 and 8.3, Menü 2 carry out Reset configuration send device to manufacturer
	Autostart remains stagnant for a longer time (>10 min) in step 1 or 2 (LED 1 or 2 lights up), otherwise message 8	Feedback lever (at stroke actuator) incorrectly mounted. Verify installation of feedback lever, see chapt. 4; flat part points to arrow on housing Coupling piece (at rotary actuator) incorrectly turned (R and L mixed up): Verify direction of rotation, see chapt. 4; flat part points to arrow on housing
	Autostart remains stagnant for a longer time (>10 min) in step 3 (LCD: shows "Control params") (LED: #3 lights up)	At large volume actuators the Autostart can possibly remain stagnant for a longer time (>10 min) in step 3, prior to continuing in step 4
Actuator does not react to a change in the input signal	No Autostart performed.	Perform Autostart.
	Positioner is not IN OPERATION	Switch positioner IN OPERATION, see chap. 8.2 resp. Autostart or via Configurator
	Setpoint source is configured wrong	Correct configuration via configurator
Actuator does not attain the closed or opened position	Autostart not carried out	carry out Autostart
	Supply pressure too low	check supply air pressure
	Travel limit is set Message 12, 13	check settings, see chapter 8.3, Menü 5
	Angle position linearization, positioner action or characteristic curve is set incorrectly (e.g. 'Custom', but values are missing)	check settings, see chapter 8.3, Menus 1, 3, 4
Unstable behaviour, position control circuit oscillates	Autostart incomplete, therefore, control parameters not suitable	carry out complete Autostart, see chapter 8.3, Menü 2
	Small actuator volume but high air capacity	increase damping at pneumatic output, see chapter 8.3, Menü 8
	Friction on valve packing too great	loosen packing gland slightly or replace
	IP module or Pneumatic amplifier defective	change module, see page 47
Actuator reacts too sluggish	air capacity insufficient	attach booster
	damping set too high	reduce damping at pneumatic output, see chapter 8.3, Menü 8
	positioning time T63 set too high	reduce positioning time, see chapter 8.3, Menü 6
No communication possible	Input voltage too low	Eliminate voltage drop
	Faulty protocol, communicator and device type do not match	Check configuration of devices
	Wrong electronics unit	change device

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