





SKU: AP9003

-  VOLT Digital Electro Pneumatic Positioner
-  VOLT Digitale elektropneumatische Stellungsregler
-  VOLT Digital Electro posicionador neumático
-  VOLT Numérique Electro positionneur pneumatique

Valves[™]
O N L I N E

- Electro Pneumatic Positioner for Rotary Actuators
- Electro Stellungsregler für Schwenkantriebe
- Electro neumático Posicionador para Rotary Actuators
- Electro positionneur pneumatique pour Actionneurs rotatifs

Positioner for Pneumatic Actuators



- **Compact and Robust Design**
- **Easy to use**
- **Back lit Display**
- **Profibus DPV1 or DeviceNet Options**

Description:

An economic positioner for rotary ¼ turn pneumatic actuators/actuated valves. Internal pilot valve can be used on both single and double acting drives. The module has a graphic backlit display and easy start tuning function.



Shows Positioner fitted to
AP9001 Pneumatic
Actuator

ALSO SEE
AP9006 Electro pneumatic
Process Controller



Description

A well designed compact positioner intended to control pneumatic actuated valves. Easy to set up and powered by a 24 VDC supply and pneumatic air supply of up to 7 bar. This unit accepts a control signal of 4-20mA and 0-10 Volt, modulating within this span. Brackets are supplied with this unit.



Beschreibung

Eine gut gestaltete kompakte Stellungsregler soll pneumatisch betätigte Ventile zu steuern. Einfache Einrichtung und angetrieben von einem 24 VDC Versorgung und Druckluftversorgung von bis zu 7 bar . Dieses Gerät übernimmt ein Steuersignal von 4-20 mA und 0-10 Volt , Modulation innerhalb dieser Spanne . Klammern werden mit diesem Gerät mitgeliefert .







Descripción

Un posicionador compacto bien diseñado destinado a controlar válvulas neumáticas accionadas . Fácil de instalar y funciona con una alimentación de 24 VDC y el suministro de aire neumático de hasta 7 bar. Esta unidad acepta una señal de control de 4-20 mA y 0-10 voltios , la modulación dentro de este lapso . Los soportes se suministran con esta unidad.



Description

Un positionneur compact bien conçu destiné à contrôler les vannes pneumatiques actionnés . Facile à mettre en place et alimenté par une alimentation 24 VDC et l'alimentation en air du pneumatique jusqu'à 7 bar . Cet appareil accepte un signal de commande de 4-20 et 0-10 Volt , moduler au sein de cette durée . Les supports sont fournis avec cet appareil .

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Digital Electro Positioner



Type 8792 can be combined with...



Yoke type actuators



Rack/pinion actuators



Process control valve with remote positioner

The robust and compact positioner is designed to standardisation acc. to IEC 534-6 or VDI/VDE 3845 for assembly with linear and rotary actuators. In addition, the remote version with the displacement position sensor can be combined with Bürkert process control valves. The digital electro pneumatic positioner SideControl can be operated with the usual current and voltage standard signals and can also be equipped with the fieldbus interface PROBUS DPV1. Additionally to the digital graphic display the valve opening is signaled by a mechanical indicator element.

Operation occurs via the external operation and display module. It consists of a backlit graphical display and a robust transparency keyboard with four keys with software driven function indication. For the user operation is very simple and clear, identical to the Bürkert positioner or process controller TopControl, Type 8692/8693.

The pilot valve system can be used equally for single and double-acting drives. It is characterised by a defined safety feature in case of failure of the electrical or pneumatic power supply and possesses an enormous air capacity range with pressure supply up to 7 bar.





Digital electro pneumatic positioner

- Compact metal housing
- Graphic display with backlight
- Easy start-up
- Comprehensive range of additional software functions
- Profibus DPV1 (optional)
- Assembly acc. to IEC 534-6 / VDI VDE 3845

Technical data	
Material	Aluminium plastic-coated
Body	EPDM, NBR, FKM
Seal	
Operating voltage s	24 VDC \pm 10%
Residual ripple	max. 10%
Setpoint setting	0/4 to 20mA and 0 to 5/10 V
Input resistance	0/4 to 20 mA: 180 Ω 0 to 5/10 mA: 19 k Ω
Analogue feedback	4-20 mA, 0-20 mA 0-10 V, 0-5 V
Binary input	galvanically isolated, 0-5 V = lg ⁴ 0 ² , 10-30 V = lg ⁴ 1 ²
Binary output	2 Outputs (optional), galvanically separated
Current limit	100 mA, Output will be synchronised when overloaded
Control medium	Neutral gases, air DIN ISO 8573-1
Dust concentration	Class 5 (< 40 μ m particle size)
Particle density	Class 5 (< 10 mg/m ³)
Pressure condensation point	Class 3 (< -20°C)
Oil concentration	Class 5 (< 25 mg/m ³)
Ambient temperature	0 to +60°C
Pilot air ports	Threaded ports G 1/4
Supply pressure	1.4 to 7 bar ¹⁾
Air supply filter	Exchangeable (aperture size = 0.1 mm)
Actuator system	single and double-acting to 150 l _v /min.
Air capacity	95 l _v /min (with 1.4 bar ²⁾) for aeration and ventilation 150 l _v /min (with 6 bar ²⁾) for aeration and ventilation (Q _{0.5} = 100 l _v /min (acc. to the definition with decrease in pressure from 7 to 6 bar absolute)
Position detection module	Potentiometer, max. angle 180°
Stroke range valve spindle	min. 30° on the rotary shaft, depending on lever
Installation	as required, display above or sideways

continued on next page

¹⁾ The supply pressure has to be 0.5-1 bar above the minimum required pilot pressure for the valve actuator
²⁾ Pressure specifications: Overpressure with respect to atmospheric pressure

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Technical data, continued

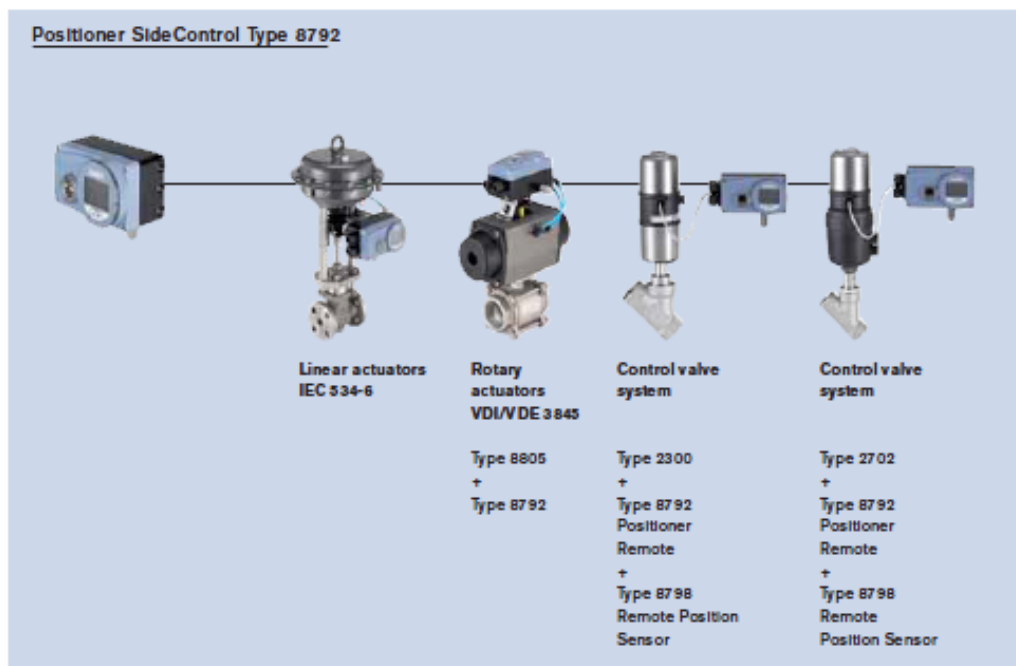
Technical data	
Type of protection	IP 65/67 acc. to EN 60529 (NEMA4x in preparation)
Power consumption	< 5 W
Electrical connection	M12, 8-pin/4-pin; M8, 4-pin
Multipole connection	2xM20x1.5 (cable Ø10mm) on screw terminals
Cable gland	(0.14-1.5 mm ²)
Remote version	1xM12x1.5 (cable Ø3 to 6.5mm)
Bus communication	Profibus DPV1 (optional)
Inductive proximity switch	on request
Protection class	3 acc. to VDE 0580
Type of ignition protection	II 3 G nA II B T4 (in preparation) II 3 D tD A22 T135° (in preparation)
Conformity	EMV2004/108/EG
Approvals	CSA (in preparation)





Technical data - Remote Position Sensor	
Type of protection	IP 65/67 acc. to EN 60529 (NEMA4x in preparation)
Electrical connection	
Cable length for connection cable	10m
Cable gland	1xM16x1.5 (cable-Ø5-10mm) on Terminal screws (0.14-1.5 mm ²)
Signal Isposition	digital (RS485)
Ambient temperature	-25 to +80 °C
Protection class	3 acc. to VDE 0580
Type of ignition protection	II 3 G nA II B T4 (in preparation) II 3 D tD A22 T135° (in preparation)
Conformity	EMV2004/108/EG
Approvals	CSA (in preparation)



Using a remote positioner the length of the control air pipes influences the dynamics and attainable accuracy of the position control loop. The length of the control air pipes therefore should be as short as possible.

Example of assembly variations of Positioner SideControl



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Assembly options

Standard Version

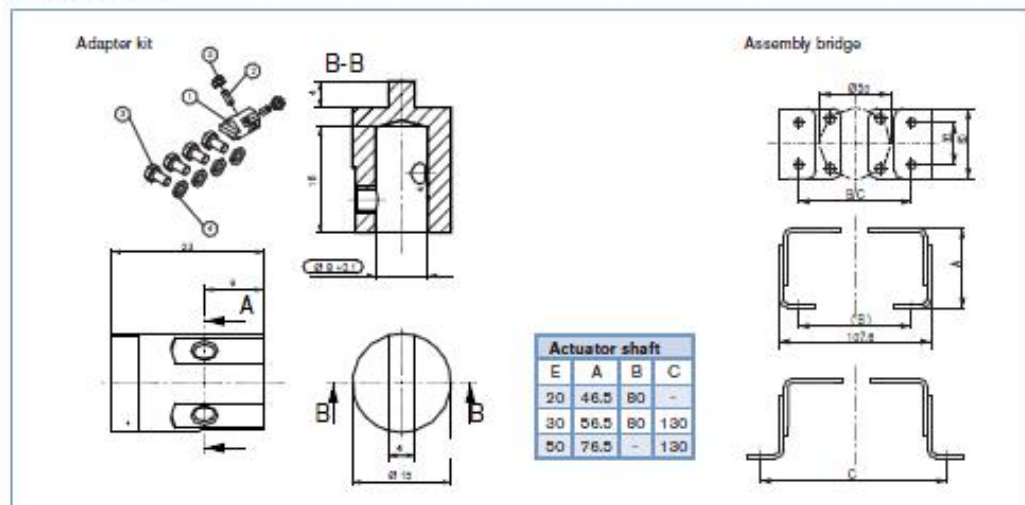
(Positioner with integrated position sensor, assembly acc. to NAMUR/IEC 534-6 and VDI/VDE 3845)

Assembly on rotary actuator



Item no. for adapter kit	787 338
Item no. assembly bridge	770 294





Dimensions [mm]



Assembly on linear actuator



Item no. for adapter kit	787 215
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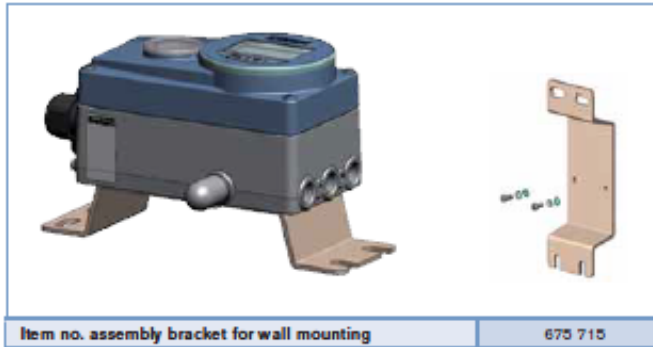
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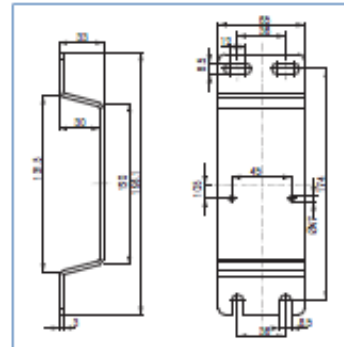
Assembly options *continued*

Remote version
(Remote positioner from actuator with displacement position)

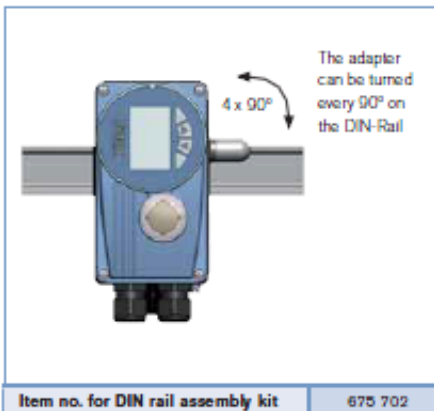
Assembly with accessory brackets



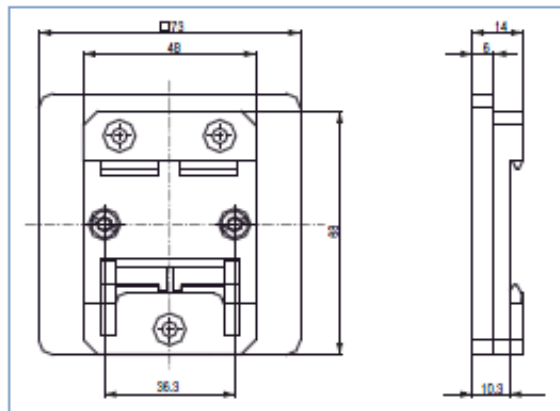
Dimensions [mm]







Assembly on DIN-Rail



Dimensions [mm]



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Assembly options *continued*

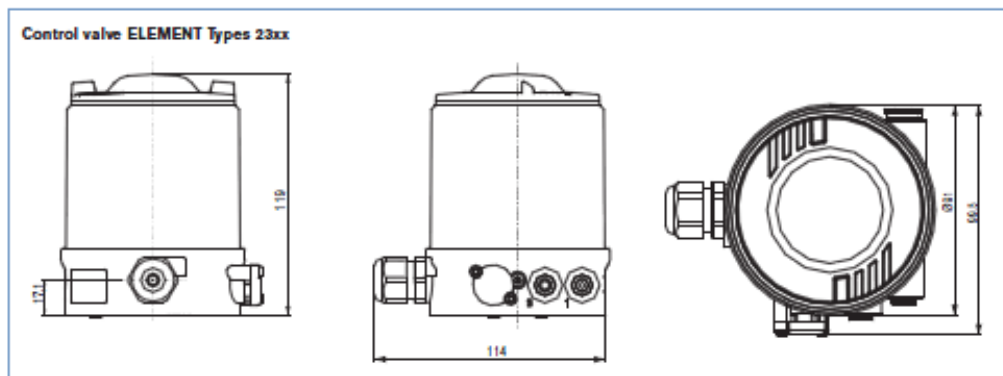
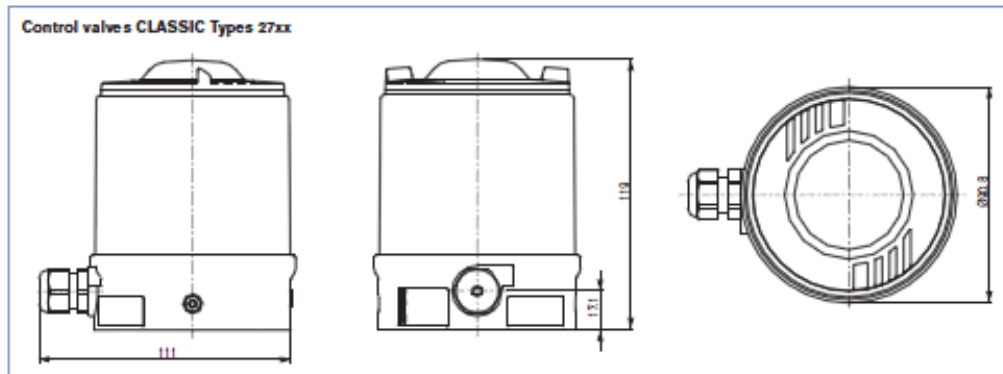
Remote version





(Remote positioner from actuator with displacement position sensor)

Type 8798



Dimensions



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Ordering chart (other versions on request)





Assembly variations	Communication	Electrical connection	Analogue feedback	2 Binary outputs	Binary input	Initiator	Control function single and double-acting	Item no.
NAMUR IEC 534-6 VDI/VE 3845	no	Cable gland	no	no	yes	no	yes	206 610
			no	no	yes	2	yes	on request
			no	yes	yes	no	yes	206 612
			yes	yes	yes	no	yes	206 611
			yes	yes	yes	2	yes	on request
			no	no	yes	no	yes	206 613
	Profibus DPV1	Multipole	no	no	yes	2	yes	on request
			no	no	yes	2	yes	on request
			no	yes	yes	no	yes	206 615
			yes	yes	yes	no	yes	206 614
			yes	yes	yes	2	yes	on request
			via Bus	no	yes	no	yes	206 616
Remote	no	Cable gland	via Bus	no	yes	2	yes	on request
			via Bus	yes	yes	no	yes	206 617
			no	no	yes	no	yes	206 623
			no	yes	yes	no	yes	206 625
			yes	yes	yes	no	yes	206 624

i Further versions on request

- > Additional
- CSA-Approval
- Type of protection NEMA4x
- inductive proximity switches
- II 3 G rA II B T4
- II 3 D tD A22 T135*

Ordering chart for accessories

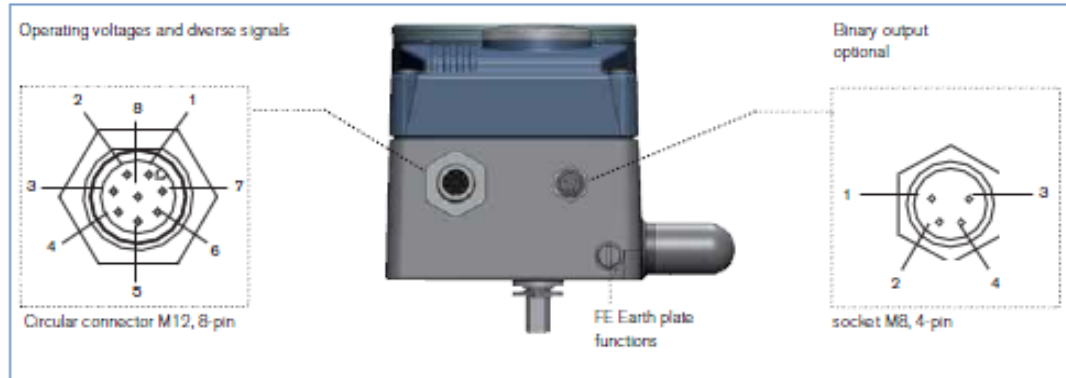
Description	Item no.
Assembly bridge VDI/VE 3845, Stainless steel	770 294
Adapter kit VDI/VE 3845, Stainless steel	787 338
Adapter kit linear actuators IEC 534-6, stainless steel	787 215
Silencer G 1/4" (replacement part)	780 780
M12 socket, 8-pin, 2 m cable set	919 061
M8 plug, 4-pin for binary outputs, without cable	917 131
Accessories Remote version	
Bracket for wall mounting, Stainless steel	675 715
DIN rail assembly kit	675 702
Remote sensor control valves CLASSIC Types 27xx	211 535
Remote sensor control valves ELEMENT Types 23xx	212 360
Adapter kit remote sensor ELEMENT Types 23xx	665 721
Adapter kit remote sensor CLASSIC Types 27xx	
Actuator size Ø 80mm	677 214
Actuator size Ø 100mm	677 215
Actuator size Ø 125mm	677 216
Actuator size Ø 175/ Ø225mm	677 217

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






Digital Electro Positioner

Connection options



Multi-pin connection






Circular connector M12 - 8-pin (Setpoint)





Pin	Configuration	External Circuitry / level signal
1	Setpoint + (0/4-20 mA or 0-5/10 V)	1  + (4-20 mA or 0-10 V) Complete galvanically separated
2	Setpoint GND	2  GND
3	GND	3  24 V DC ± 10% max. Residual ripple 10%
4	+ 24 V	4  24 V
5	Binary input +	5  +  0-5 V (log. 0) 10-30 V (log. 1)
6	Binary Output GND	6  GND

Optional analogue feedback

8	Analogue feedback +	8  + (0/4-20 mA or 0-5/10 V,) Complete galvanically separated
7	Analogue feedback GND	7  GND

socket M8, 4-pin (only with Binary Output Option)

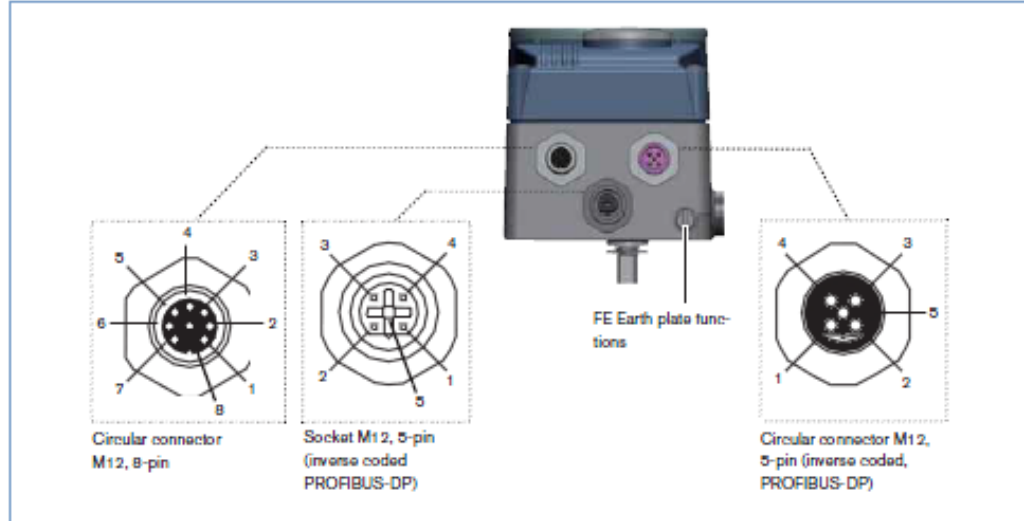
Pin	Configuration	External Circuitry / level signal
1	Binary Output 1	1  0-24 V
2	Binary Output 2	2  0-24 V
3	Binary Output GND	3  GND

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Connection options, continued

Connection PROFIBUS-DP







Operating voltages - Circular connector M12, 8-pin

Pin	Configuration	External Circuitry / level signal
1	not configured	
2	not configured	
3	GND	 24 V DC \pm 10 % max. Residual ripple 10 %
4	+24 V	
5	Binary input +	
6	Binary input -	
7	Binary Output 1 (oriented at Pin 3)	
8	Binary Output 2 (oriented at Pin 3)	

Bus-Connection - socket/Circular connector M12, 5-pin

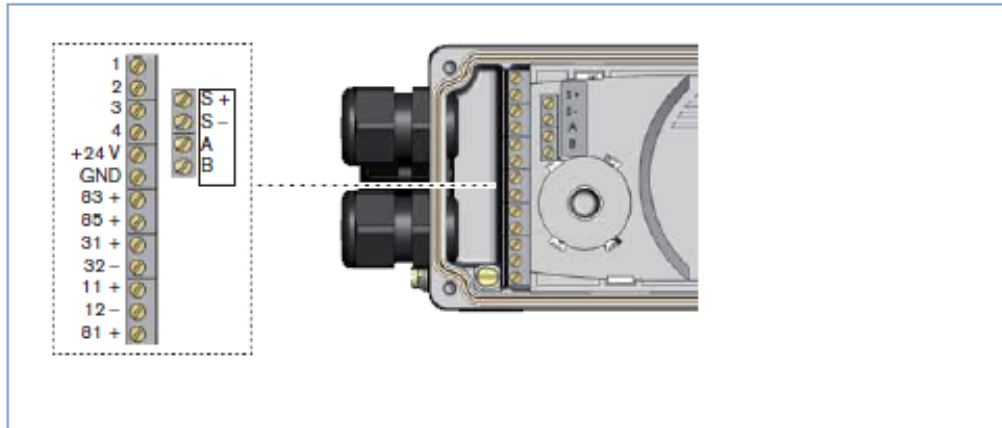
Pin	Configuration	External Circuitry / level signal
1	VP+5	load resistance supply
2	RxD/TxD-N	Receive and send information -N, A Circuitry
3	DGND	Information transfer potential (measured to 5 V)
4	RxD/TxD-P	Receive and send information -P, B-Leitung
5	Shield	Shield / protective earth




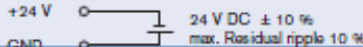
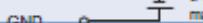
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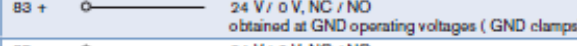
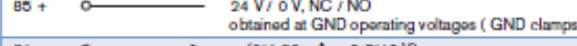
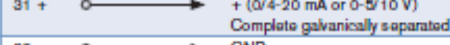

Connection options, continued

Cable gland connection





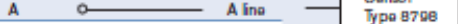

Terminal	Configuration	External Circuitry / level signal
11 +	Setpoint +	11 +  + (4-20 mA or 0-10 V) Complete galvanically separated
12 -	Setpoint GND	12 -  GND
81 +	Binary input +	81 + 
+24 V	operating voltages +	+24 V  24 V DC ± 10 % max. Residual ripple 10 %
GND	operating voltages GND	GND 

Optional Analogue feedback / Binary Output

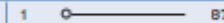



Terminal	Configuration	External Circuitry / level signal
83 +	Binary Output 1	83 +  24 V / 0 V, NC / NO obtained at GND operating voltages (GND clamps)
85 +	Binary Output 2	85 +  24 V / 0 V, NC / NO obtained at GND operating voltages (GND clamps)
31 +	Analogue feedback +	31 +  + (0/4-20 mA or 0-5/10 V) Complete galvanically separated
32 -	Analogue feedback GND	32 -  GND





Terminal 1, 2, 3, 4 : NC

Optional remote version in connection with remote positioner sensor Type 8798

Terminal	Configuration	External Circuitry / level signal
S +	Supply sensor +	S +  +
S -	Supply sensor -	S -  -
A	Serial Interface, A cable	A  A line
B	Serial Interface, B cable	B  B line

Remote sensor Type 8798

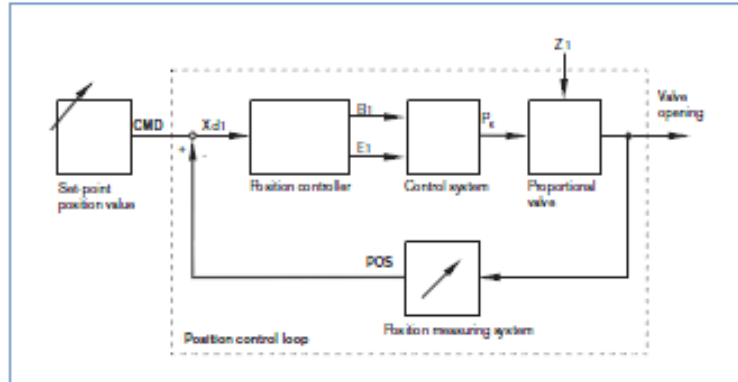
Terminal	Wire colour for cable type		Configuration	External Circuitry
	1	2		
1	white	black	Supply Sensor -	1  8791 or
2	brown		Supply Sensor +	2  8792 / 8793
3	yellow	orange	Serial Interface, B line	3  8791 or
4	green	red	Serial Interface, A line	4  8792 / 8793

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Signal flow plan

Position control loop

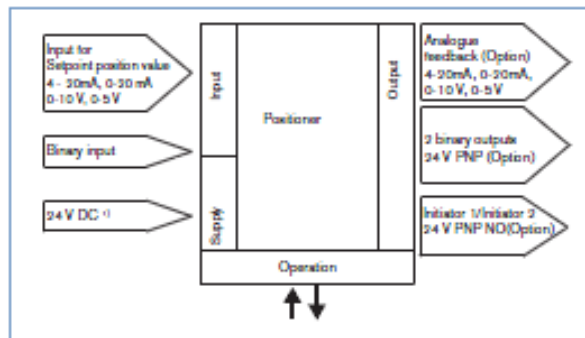


Additional software options of the Side-Control Positioner Type 8792 (extract)

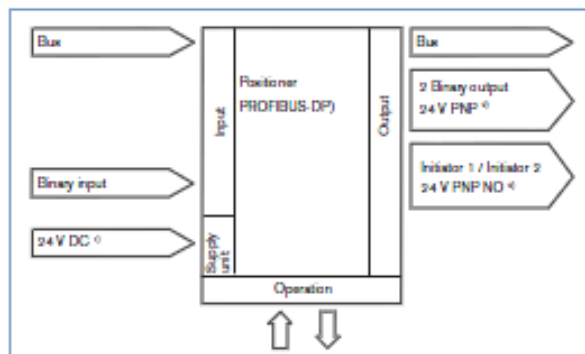
- Automatic start of the control system
- Automatic or manual characteristics curves selection
- Setting of the seal and the maximum stroke threshold respectively
- Parameterisation of the Positioner
- Limitation of the stroke range
- Limitation of the manipulating speed
- Setting of the moving direction
- Configuration of the binary input
- Signal range splitting on several controllers
- Configuration of analogue or 2 binary outputs
- Signal fault detection
- Safety position
- Code protection
- Contrast inversion of the display
- Diagnostic functions

Schematic diagram of SideControl, Typ 8792

without Fieldbus Interface







with Profibus DP



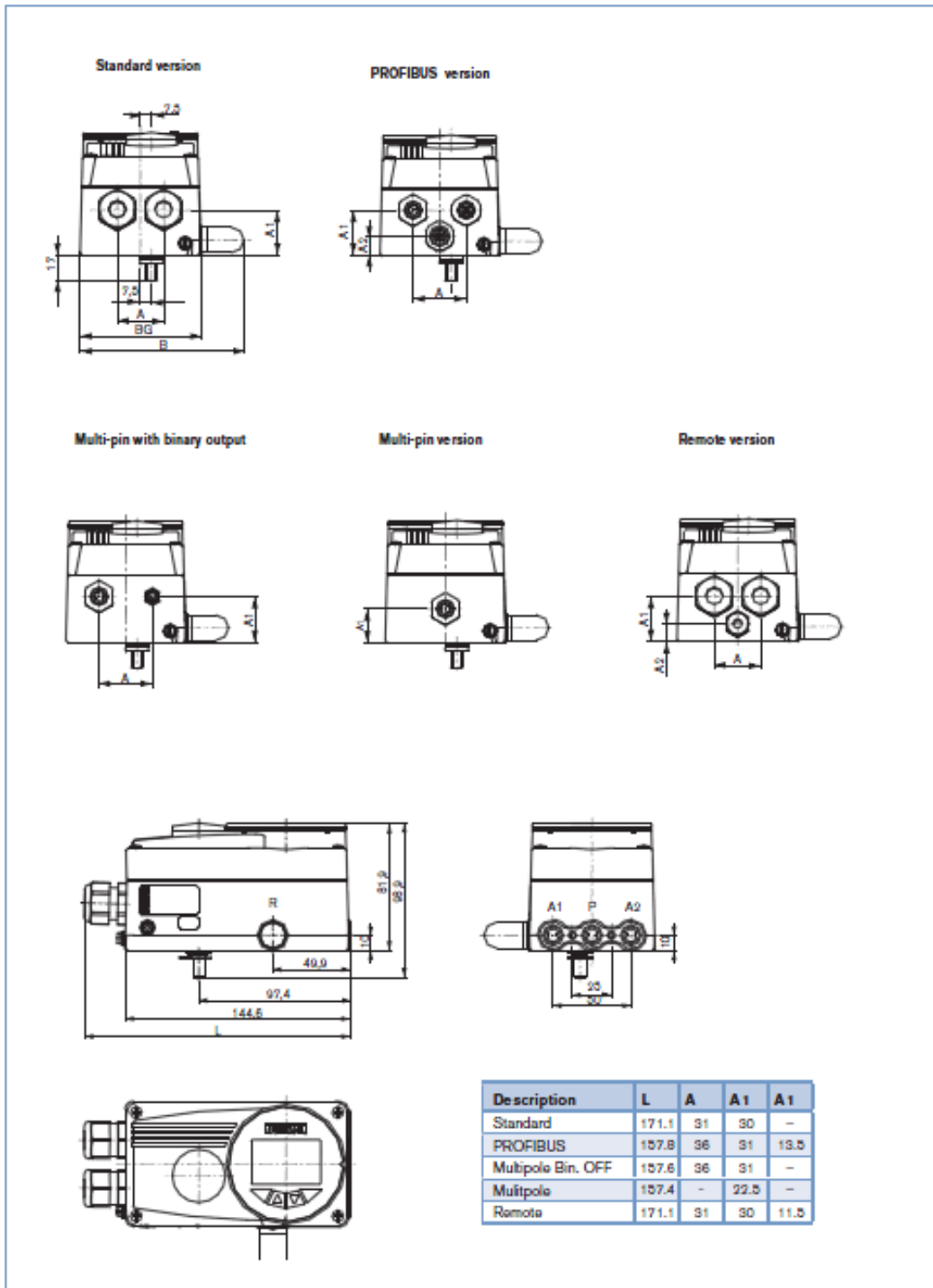
¹ The operating voltage is supplied with a 5 wire unit independent from the setpoint signal





² Alternative options

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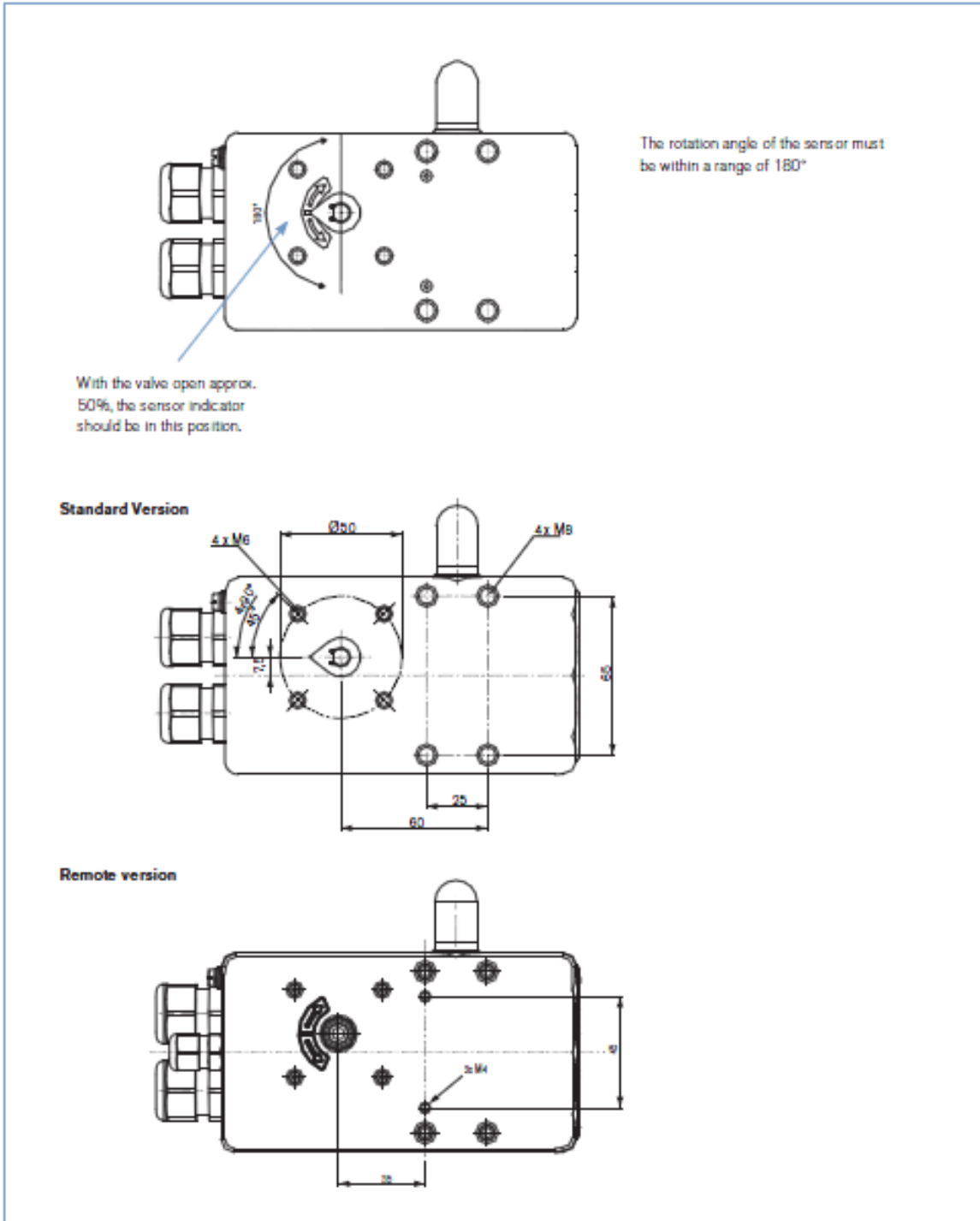
Dimensions [mm]







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Dimensions [mm], continued



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Digital Electro Pneumatic Process Controller

AP9006

Digital Electro pneumatic Process Controller Side Control



The robust and compact process controller is designed to standardisation acc. to IEC 534-6 or VDI/VDE 3845 for assembly with linear and rotary actuators. In addition, the remote version can be combined with Bürkert process control valves. The digital electropneumatic SideControl process controller can be operated by the usual current and voltage standard signals and can also be equipped with the fieldbus interface PROFIBUS DPV1. Additional to the digital display the valve opening is signaled by a mechanical indicator element. The actual process value is directly supplied to the device as 4-20 mA, PT100 or as frequency signal. The process controller calculates the position setpoint for the subordinated positioner through the variance comparison. Due to the analogue feedback all analogue values on the controlling level can be transferred. The parameterization of process controller and positioner can be carried out automatically.

- Compact metal housing
- Graphic display with backlight
- Easy start-up of process controller and positioner
- Comprehensive range of additional software functions
- Profibus DPV1 (optional)
- Assembly acc. to IEC 534-6 / VDI VDE 38

