8049 digital positioner

Compact positioner in digital technology for mounting on pneumatic valves

- Direct "top-mounted" attachment to the valve drive. As a result, parts of the return stroke are no longer accessible from the outside.
- Large stroke range 3 - 28 mm, optionally up to 50 mm
- Reverse hysteresis of up to 0.2% possible, standard 0.4%
- Configuration adjustment through self-adaptation
- Configuration and diagnostic functions via "Device-Config" software
- Low vibration sensitivity
- Degree of protection IP 65
- Also available in a version for Ex zone 22 on request
- Available with integrated process controller
- Also for part-turn actuators (single- or double-acting)
- Low air consumption in the regulated state
- Also available with IO-Link version

Ex versions

ATEX

II 2G Ex ia IIC T4 Gb for Type 8049-ExPro-1

II 1G Ex ia IIC T4 Ga for Type 8049-ExPro-0

Technical information, standard versions

execution	8049-4**	8049-2	8049-ExPro
nominal stroke	3 - 28mm (optional up to 50mm)		
burden voltage	2.5V (125Ω@20mA)	6.5V (325Ω@20mA)	8V (400Ω @20mA)
Auxiliary power, pneumatic	max. 6 bars	max. 6 bars	max. 6 bars
Air performance* Linear drive	40 Nl/min	24 Nl/min	24 Nl/min
air consumption	< 0.06 Nl/min	< 0.4 Nl/min	< 0.4 Nl/min
system leakage	< 0.01 Nl/min		
Permitted ambient temperature	- 10 to +75°C	- 10 to +75°C	- 10 to +75°C
control signal	0/4 - 20mA opt. 0/2 - 10V	4-20mA	4-20mA Ex
Auxiliary power, electric	24VDC max 10W	no	no
Adjustment of stroke and zero point	self-learning		
configuration	Via PC software "DeviceConfig"		
Air quality according to ISO 8573-1:			
maximum solid size and density	Class 5	Class 3	Class 3
oil content	class 4	2nd grade	2nd grade
pressure dew point	Class 3	Class 3	Class 3
	min. 20K (36°F) below ambient temperature		
actuation gas	Compressed air or non-flammable gases (nitrogen, CO2,...)		
Attachment to actuator	Via standardized mounting kits (also with optical stroke indicator)		
pressure connection	1/8"		
Max. connection cross-section	1.5mm²		
Degree of protection according to DIN 40050	IP65		

* at 5 bar supply air pressure

* * from version 4P6

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Technical information, Ex versions

version	8049-ExPro-1	8049-ExPro-0
General Ex relevant information		
Applied standards	IEC 60079-0:2011, Ed. 6IEC 60079-11:2011, Ed. 6	
Type examination certificate (ATEX)	BVS 17 ATEX E088	
Type Examination Certificate (IEC)	IECEx BVS 17.0080	
ATEX marking	II 2G Ex ia IIC T4 Gb	II 1G Ex ia IIC T4 Ga
IEC marking	Ex ia IIC T4 Gb	Ex ia IIC T4 Ga
temperature ranges	Tamb = -10 ... +75°C	Tamb = -10 ... +75°C
Information relevant to explosion protection Control signal input (terminals 1 and 2)		
maximum input voltage	Ui = DC 30V	Ui = DC 30V
max. input current	Ii = 120mA	Ii = 120mA
max input power	Pi = 1000mW	Pi = 1000mW
max internal capacity	Ci = negligible	Ci = negligible
max. internal inductance	Li = negligible	Li = negligible
Information relevant to explosion alarm output (NAMUR EN 60947-5-6) (terminals 3 and 4)		
maximum input voltage	Ui = DC 16V	Ui = DC 16V
max. input current	Ii = 25mA	Ii = 25mA
max input power	Pi = 64mW	Pi = 64mW
max internal capacity	Ci = 11nF	Ci = 11nF
max. internal inductance	Li = negligible	Li = negligible
Information relevant to explosion binary input (terminals 5 and 6)		
maximum output voltage	Uo = DC 5.4V	Uo = DC 5.4V
max. output current	Io = 1mA	Io = 1mA
max output power	Po = 2mW	Po = 2mW
max. external capacity	Co = 65 µF	Co = 65 µF
max. external inductance	Lo = 50mH	Lo = 50mH
Information relevant to explosion protection PC-COM		
output voltage nominal	2.8V	2.8V
maximum output voltage	Um = 6.1V	Um = 6.1V
restriction	The interface may only be used for configuration if none explosive atmosphere is present	
Ex-relevant information on the external displacement sensor (variant with Plug 4)		
maximum output voltage	Uo = 5.4V	Uo = 5.4V
max. output current	Io = 66mA	Io = 66mA
max output power	Po = 89mW	Po = 89mW
max. external capacity	Co = 59.5µF	Co = 59.5µF
max. external inductance	Lo = 8mH	Lo = 8mH

possible combinations

	8049-4 (4-wire) Version V6	8049-2 (2-wire) Version V7	8049-ExPro (Ex-Execution) Version V3	8049-IPC with integrated process controller
standard housing	x	x	x	x
Stainless steel base plate	x	x	x	x
Controller completely made of stainless steel	x	x	x	
Positioner for part-turn actuators, single-acting	x	x	x	x
Positioner for part-turn actuators, double-acting	x			x
Positioner for 50 mm stroke	x	x	x	
Feedback module RM-4		x	x	
Feedback module RM-5	x			
gauge block	x	x	x	x

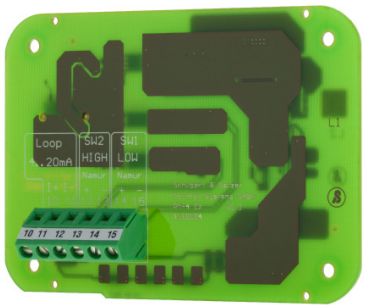
Accesories

Analog feedback modules

- Feedback of the current valve position
- No adjustment of the feedback signal necessary
- Easily retrofittable

Analog feedback module RM-4 for 8049-2 and 8049-ExPro

- Feedback for 2-wire version and ExPro
- 2 limit switches according to NAMUR (EN 60947-5-6)
- Limit signal transmitter freely adjustable (0-100%) via "DeviceConfig" software

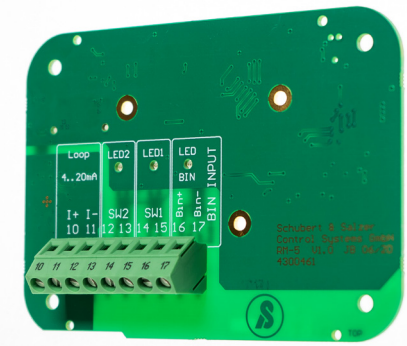


Technical data

output signal	4-20mA
internal burden	< 8V (400Ω)
temperature range	- 10 . . .+75°C
accuracy feedback	±1.5%
limit signaller	2 pieces (NAMUR)
switching range	adjustable 0-100%
switching hysteresis	approx. 2.5%
Signal Permissible deviation ACTUAL-TARGET value	±2%

Analog feedback module RM-5 for 8049-4

- Feedback for 4-wire version from V6
- 2 galvanically isolated limit signal transmitters
- Limit signal transmitter freely adjustable (0-100%) via DeviceConfig software
- Binary input 24V



Technical data

supply voltage	24Vdc (±10%)
output signal	4-20mA
Maximum allowable burden	500 ohms
temperature range	- 10 . . .+75°C
limit signaller	2 pieces
switching range	adjustable 0-100%
Switching capacity of the limit signal transmitter	24V AC/DC , 70mA
switching hysteresis	approx. 2.5%
Signal Permissible deviation ACTUAL-TARGET value	±2%
Binary input switching threshold	~12V

gauge block

- Pressure gauge block between positioner and connection block
- Display range 0-6bar
- Display in bar and PSI
- Easily retrofittable

Visual position indicator for part-turn actuator

materials

	standard design	execution "Stainless Steel Floor Plate"	execution "completely stainless steel"
Housing	Vestamide (electrically conductive)	Vestamide (electrically conductive)	stainless steel
bottom plate	Aluminum, KTL-coated	stainless steel	stainless steel

housing designs

standard design

Stainless steel base plate

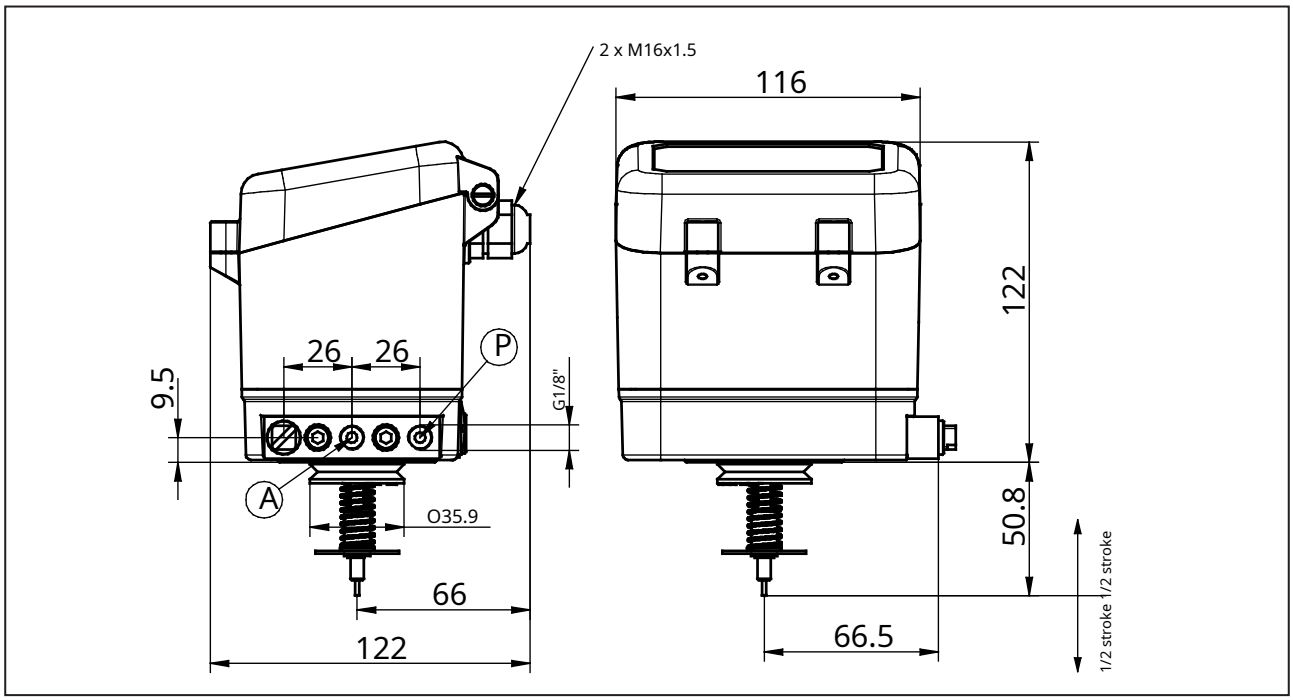
Completely made of stainless steel

Order number system

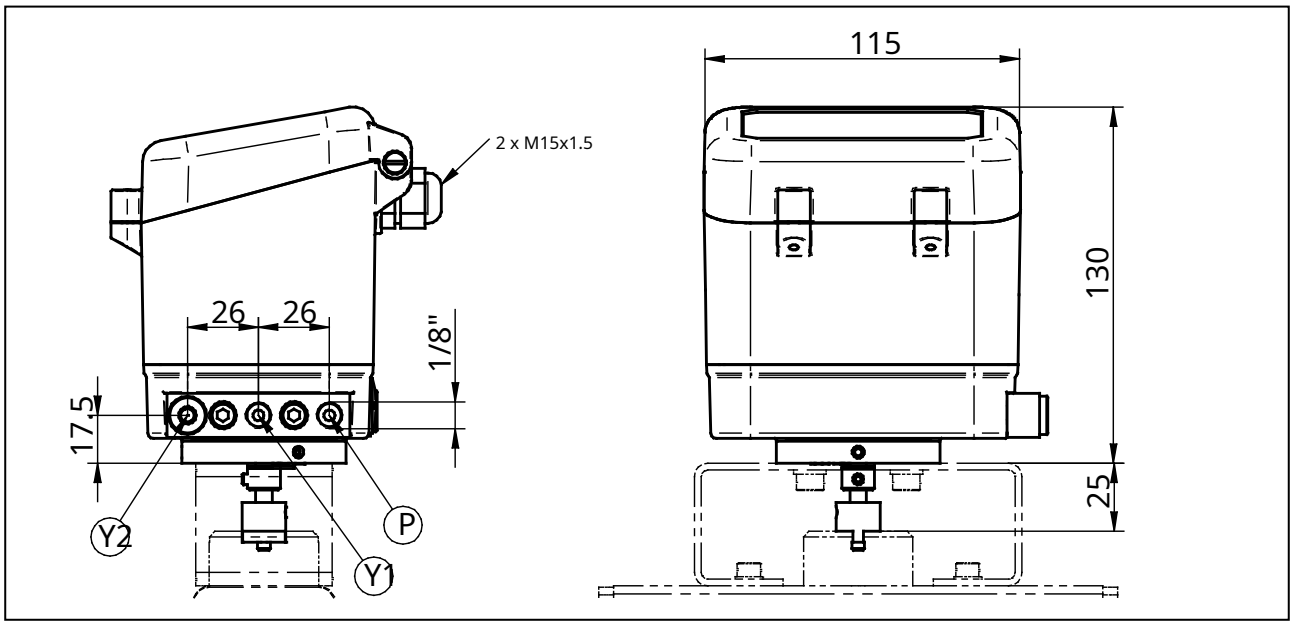
														only specify ifls necessary			
	8049/		-						-			-			S		-	
basic type																		
digital Positioner 8049-4 (Version 6)		4P6																
digital Positioner 8049-2		2P7																
digital Positioner 8049-ExPro-1		EP3																
digital Positioner 8049-ExPro-0		0P3																
For propulsion																		
single acting				1														
double acting				2														
air performance																		
Standard air capacity (standard)					S													
High air performance (high) standard for part-turn actuators					H													
Housing																		
aluminum / plastic						0												
Stainless steel base plate						1												
Stainless steel case						2												
Electrical connection																		
Cable glands 2 x M16x1.5							0											
NPT thread 1/2"							1											
Plug connection M12x1, 5-pin							2											
Pneumatic connection																		
1/8"								0										
NPT 1/8"								1										
path detection																		
Linear potentiometer without feeler rod									0									
Linear potentiometer with standard feeler rod (L=99.6mm)									1									
Linear potentiometer with shortened feeler rod (L=94.4 mm)									G									
Rotary potentiometer for part-turn actuators									2									
EMC separation module for external displacement sensor									3									
optical display																		
without ad										0								
Indicator disc for feeler rod made of PA										1								
Metal indicator disc for feeler rod										2								
rotation angle indicator										3								
additional modules																		
without additional modules											0							
Intelligent feedback module RM4 with two limit sensors according to NAMUR											4							
Intelligent feedback module RM5 with two limit switches											5							
Accesories																		
without attachments												0						
Manometer block single-acting, scaling in bar and PSI												1						
optical position indicator for part-turn actuators												2						
additional information																		
Special version (only specify if required)															S			
Assembly controller (only internally intended for assembly)															M			
Ideas																		
default																-		
Setting according to customer requirements																1		
special version																		
without																	-	
Detached version including external displacement sensor for lifting drives																	1	

Dimensions

For linear drives



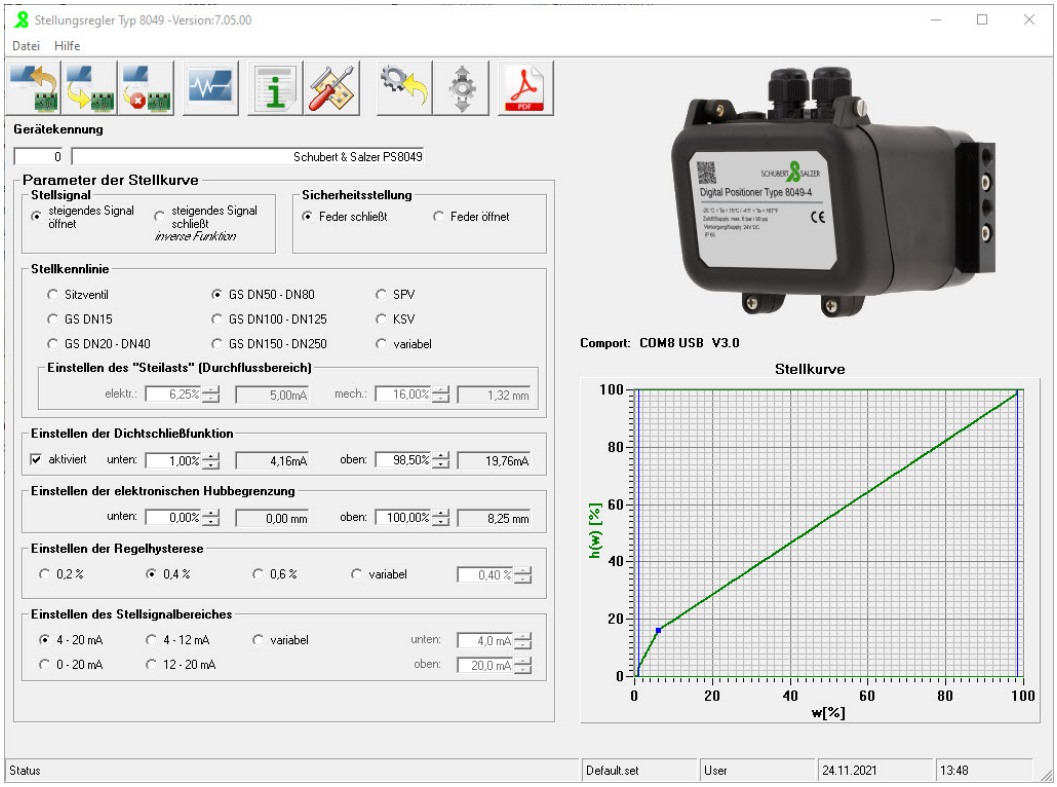
For part-turn actuators



"DeviceConfig" configuration software

rule parameters

Setting the control parameters (actuating signal, stroke limitation, tight-closing function, control hysteresis, valve function, etc.)



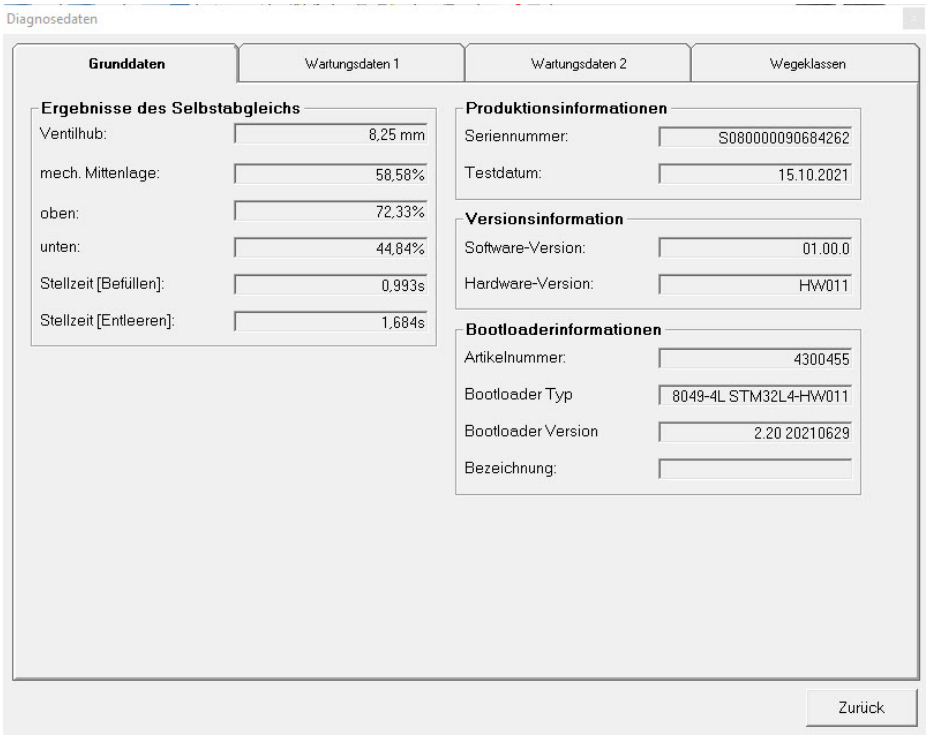
live monitor

The operating states of the controller can be monitored with the live monitor.

"DeviceConfig" configuration software

diagnostic data

Information about valve lift, positioning times, software and hardware versions, temperature and travel classes reached, error messages, number of operations, operating hours...



Application examples

Positioner 8049 on slide valve control valve type 8021

Positioner 8049 with stainless steel housing a sterile control valve type 6051