

Digital Positioner 8049



Compact digital positioner for pneumatic control valves.

- Positioner can be integrated into valve actuator (no external moving parts for stroke feedback)
- Wide range of strokes 0.12 to 1.1 inches (3 - 28 mm)
- No steady-state air consumption
- Self-adapting to valve actuator
- Configuration and diagnostic functions by PC-software
- Not sensitive to vibrations
- Protection class IP65
- Available with AS-I control
- Instrument air not required (filtration to 20µm)
- Also available for the use in Ex-Zone 22
- Available with integrated process controller
- Also for quarter-turn actuators (single acting or double acting)



ATEX-Versions:



ATEX



II 2G Ex ia IIC T3/T4 for Type 8049-Ex

II 1G Ex ia IIC T3/T4 for Type 8049-Ex-0

Technical Information, standard versions

Version	8049-4*	8049-2*	8049-AS-I
Nominal stroke	0.12 - 1.1 inch	0.12 - 1.1 inch	0.12 - 1.1 inch
Voltage of the working resistance	3.5 V (175Ω@20mA)	6.5 V (325Ω@20mA)	-
Supply air	max. 85 psi	max. 85 psi	max. 85 psi
Air consumption*	40 NI/min	24 NI/min	40 NI/min
Leakage	< 0,6 NI/h		
Ambient temperature	-4 up to +167°F	-14 up to +167°F	-4 up to +167°F
Control signal	0/4 - 20 mA opt. 0 - 10 V	4 - 20 mA	Single Slave, Slave Profil S - 7.3.4
Auxiliary energy, electric	24 VDC max 10 W	none	supply with AS-I
Adjustment of stroke and zero point	self-learning		
Internal air consumption	none		
Configuration	with PC-Software		
Air quality according ISO 8573-1: max. particle size and density: oil content pressure dew point	Class 5	Class 3	Class 5
	Class 4	Class 2	Class 4
	Class 3	Class 3	Class 3
	min. 20K (36°F) under ambient temperature		
Actuation gas	compressed air or non flammable gases (nitrogen, CO ₂ ,...)		
Mounting to control valve	standardized mounting kits (also with optical position indicator)		
Pressure supply port	G 1/8" NPT		
Protection class acc. DIN 40050	IP 65		

* at 73 psi pilot pressure

Technical Information, ex-versions

Version	8049-Ex	8049-Ex-0
Nominal stroke	0.12 - 1.1 inch	0.12 - 1.1 inch
Voltage of the working resistance	14 V (700 Ohm@20mA)	14 V (700 Ohm@20mA)
Supply air	max. 85 psi	max. 85 psi
air performance (@73psi)	30 NI/min.	
Leakage	< 0,6 NI/h	
Adjustment of stroke and zero point	self-learning	
Internal air consumption	none	
Configuration	with PC-Software	
Air quality according ISO 8573-1: max. particle size and density oil content pressure dew point		
	Class 3	
	Class 2	
	Class 3	
	min. 20K (36°F) under ambient temperature	
Actuation gas	compressed air or non flammable gases (nitrogen, CO2, ...	
Mounting to control valve	standardized mounting kits (also with optical position	
Pressure supply port	G 1/8" NPT	
Protection class acc. DIN 40050	IP 65	
General information concerning explosion-proofing		
Product type test certificate	BVS 08 ATEX E154	BVS 08 ATEX E154
ATEX specification	II 2G Ex ia T3/T4	II 1G Ex ia T3/T4
Product type test certificate	IECEX BVS 11.0060	IECEX BVS 11.0060
IEC specification	Ex ia IIC T3/T4 Gb	Ex ia IIC T3/T4 Ga
Temperature ranges	T4: Tamb = -10 ... +104°F T3: Tamb = -10 ... +167°F	T4: Tamb = -10 ... +104°F T3: Tamb = -10 ... +167°F
Information concerning explosion-proofing		
max. Input voltage	Ui = DC 30V	Ui = DC 30V
max. Input current	Ii = 100mA	Ii = 100mA
max. Input power	Pi = 633mW	Pi = 633mW
max. Interior capacity	Ci = insignificant	Ci = insignificant
max. Interior inductance	Li = insignificant	Li = insignificant

Materials

	Standard version	Version "ground plate in stainless steel"	Version "completely stainless steel"
Positioner housing	Vestamid (electroconductive)	Vestamid (electroconductive)	stainless steel
Ground plate	Aluminium, KTL-coated	stainless steel	stainless steel

Combination possibilities

	8049-4 (4-wire) version V5	8049-2 (2-wire) version V7	8049-Ex (ex-version) version V2	8049-IPC with integrated process controller
Standard body	x	x	x	x
Ground plate in stainless steel	x	x	x	x
Positioner completely in stainless steel	x	x	x	
Positioner for part turn actuator single acting	x	x	x	x
Positioner for part turn actuator double acting	x			x
positioner for 50 mm stroke	x	x		
Feed back module RM-2	x			
Feed back module RM-3	x			
Feed back module RM-4		x		
gauge block	x	x	x	x

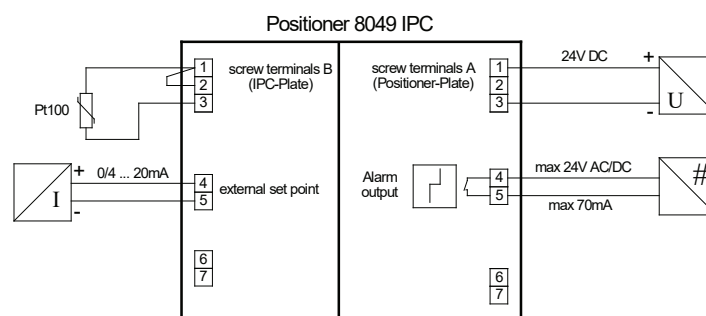
Positioner with integrated PID-process controller module

- Compact solution for local controlling tasks
- Suitable for fast controlled systems due to a short cycle time (only 50 ms)
- Internal or external set point value possible
- LED-display easy to read
- Analog inputs and Pt100
- Configurable as P-, PI-, PD- and PID-controller
- Class of protection IP 65

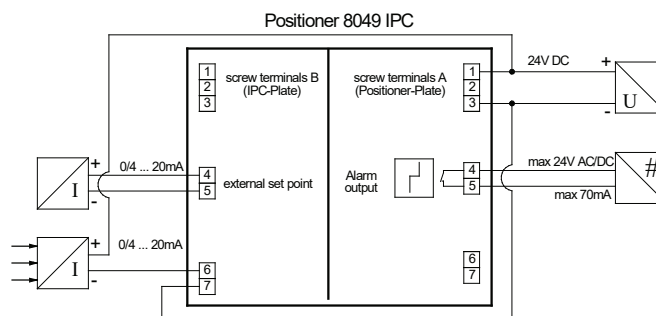


Supply voltage	24 VDC +/- 10 %, 350 mA, max. (with positioner)
Sample rate	50 ms
Control variable	Pt100 0/4...20 mA
Set point value	over keyboard or 0/4...20 mA, 0/2...10 V
Input filter control variable	OFF: 20 ms, (Pt100: 200 ms) ON: 800 ms
Alarm output	absolute direct/inverse, relative direct/inverse, Band direct/inverse
Capacity alarm output	max. 24 VAC or DC, max. 70 mA
Control mode	P (with working point y_0), PD (with working point y_0), PI, PID
Ambient temperature	-4 up to 167°F
Protection class	IP65

Connection example Pt-100



Connection example mA-sensor



Accessories

Analogue feedback modules

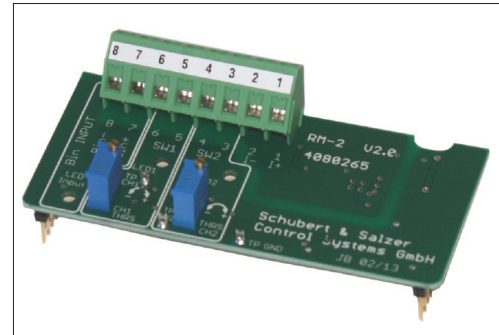
- Feedback on current valve position
- Feedback signal does not require calibration
- Easy to retrofit

Analogue feedback module RM-2

- Feedback for 4 wire design
- 2 electrically isolated limit signal transmitters
- Limit signal transmitters freely adjustable (0-100%) with potentiometer
- Binary input 24V

Technical Information

Supply voltage	24V DC ($\pm 10\%$)
Output signal	4 - 20 mA
Max. adm. working resistance	< 700 Ohm
Temperature range	-4 ... +167°F
Limit signal transmitters	2 pieces
Switching range	adjustable 0-100%
Switching capacity of the limit sign.trans.	24V AC/DC , 70mA
Switching hysteresis	ca. 2.5%

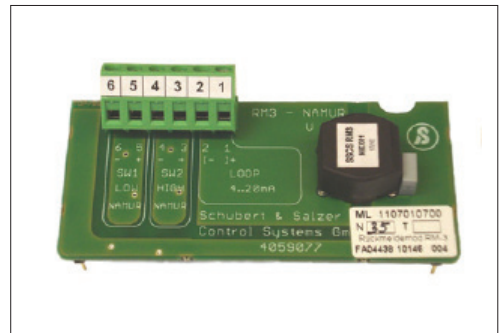


Feedback module RM-3

- Feedback for 4 wire design
- 2 limit signal transmitters according NAMUR (EN60947-5-6)
- Limit signal transmitters freely adjustable (0-100%) with software „DeviceConfig“

Technical Information

Output signal	4 - 20 mA
Internal load	< 7,6V (380 Ω)
Temperature range	-4 ... +167°F
Limit signal transmitters	2 pieces
Switching range	adjustable 0-100%
Switching hysteresis	ca. 2.5%

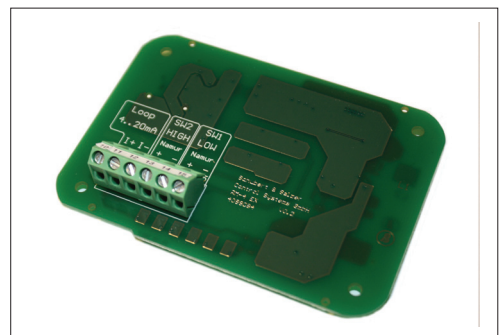


Feedback module RM-4

- Feedback for 2 wire design
- 2 limit signal transmitters according NAMUR (EN60947-5-6)
- Limit signal transmitters freely adjustable (0-100%) with software „DeviceConfig“

Technical Information

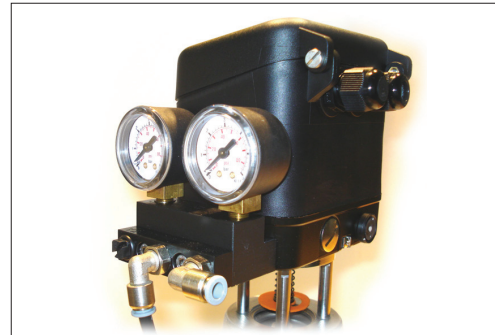
Output signal	4 - 20 mA
Internal load	< 8V (400 Ω)
Temperature range	-4 ... +167°F
Limit signal transmitters	2 pieces
Switching range	adjustable 0-100%
Switching hysteresis	ca. 2.5%



Accessories

Gauge Block

- Gauge block between positioner and connection block
- Pressure range 0 - 87 psi (0 - 6 bar)
- Easy field retrofit



optical position indication for quarter-turn actuators



Housing Versions

Standard version



Completely stainless steel



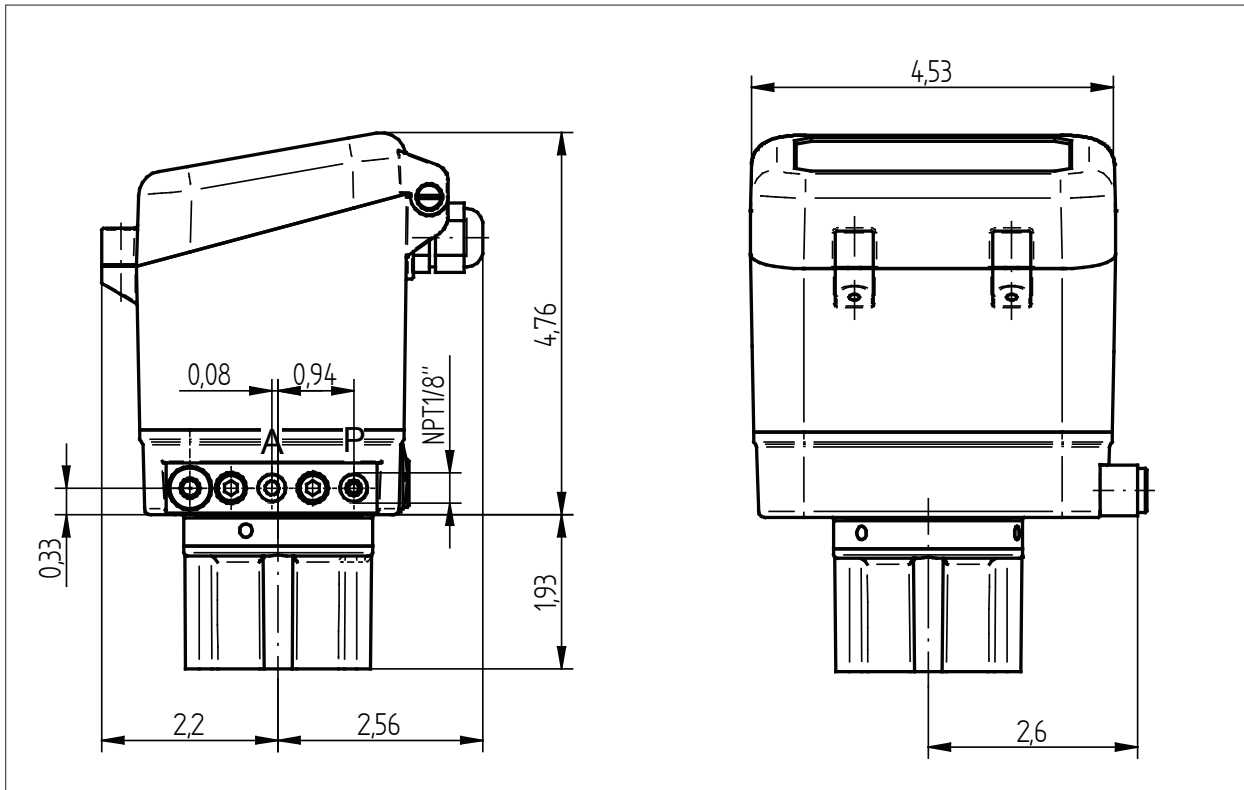
Ground plate in stainless steel



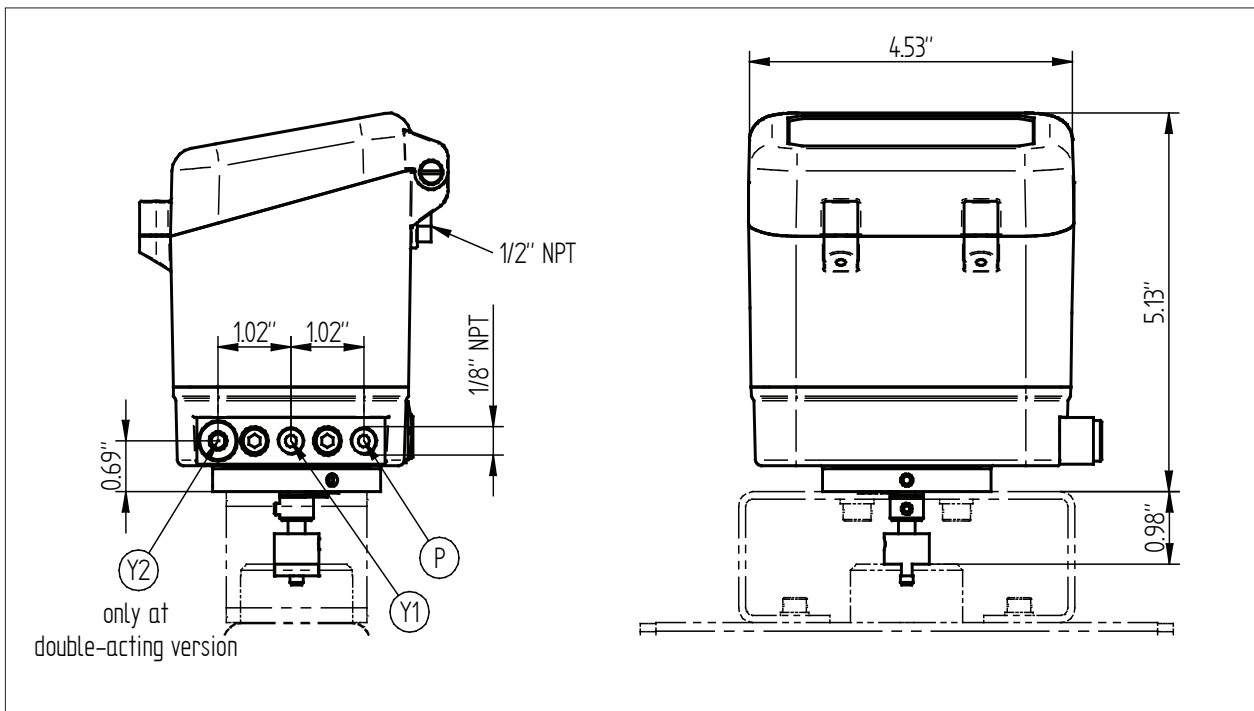
quote only if required														
8049/	-												S	-
Basic design														
dig. positioner 8049-4 (version 5)	4P5													
dig. positioner 8049-2	2P7													
dig. positioner 8049-Ex	EP2													
dig. positioner 8049-Ex-0	0P2													
For actuator														
single acting	1													
double acting	2													
Air delivery														
low	L													
standard	S													
high	H													
Body														
aluminium / plastic	0													
stainless steel ground plate	1													
body in stainless steel	2													
Electro-pneumatic connection														
cable bushing 2 x M16x1,5	0													
NPT-thread 1/2"	1													
plug connection M12x1, 5-pin	2													
Pneumatic connection														
G 1/8"	0													
NPT 1/8"	1													
Position measuring														
linear potentiometer without sensing pin	0													
linear potentiometer with standard sensing pin (L=3,92")	1													
linear potentiometer with curtaled sensing pin (L=3,72")	G													
rotary potentiometer for semi-rotary drive	2													
EMV-galvanic separating module for exterior path sensor	3													
Optical indicator														
without indicator	0													
indicator disc for sensing pin in PA	1													
indicator disc for sensing pin in metal	2													
rotation angle indicator	3													
Auxiliary module														
without auxiliary module	0													
intelligent feedback modul RM2 with two limiting value encoders	2													
intelligent feedback modul RM3 with two limiting value encoders according NAMUR	3													
IPC-process controller	C													
ASI	A													
Accessories														
without accessories	0													
gauge bloc single acting, scaling in bar and PSI	1													
optical position indicator for rotating actuators	2													
Further details														
special design (quote only if required)	S													
positioner montage (only for the manufacturer)	M													
Settings														
standard	-													
settings on customer request	1													
Special design														
without	-													
separated version incl. exterior path sensor for lift drive	1													
special design for ex zone 22 (dust)	2													

Dimensions

For linear actuators



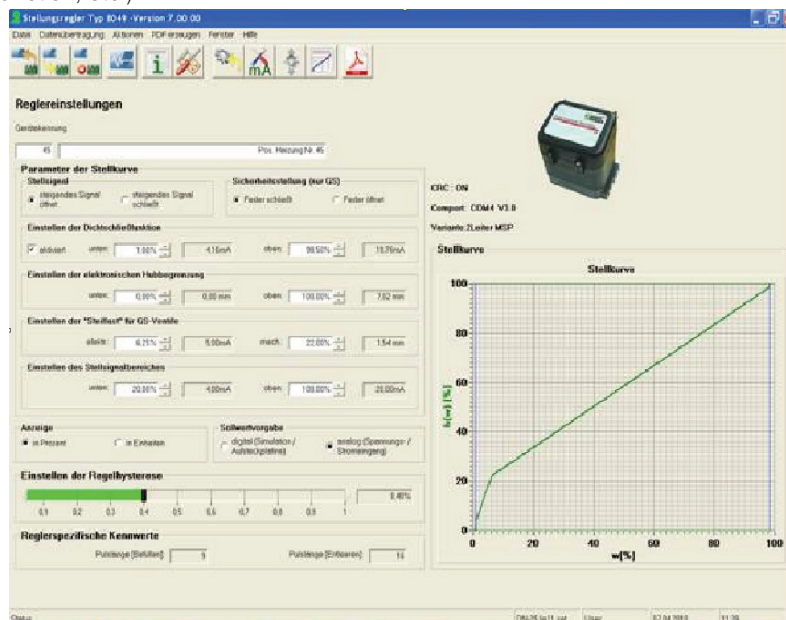
For quarter-turn actuators



Configuration-Software „DeviceConfig“

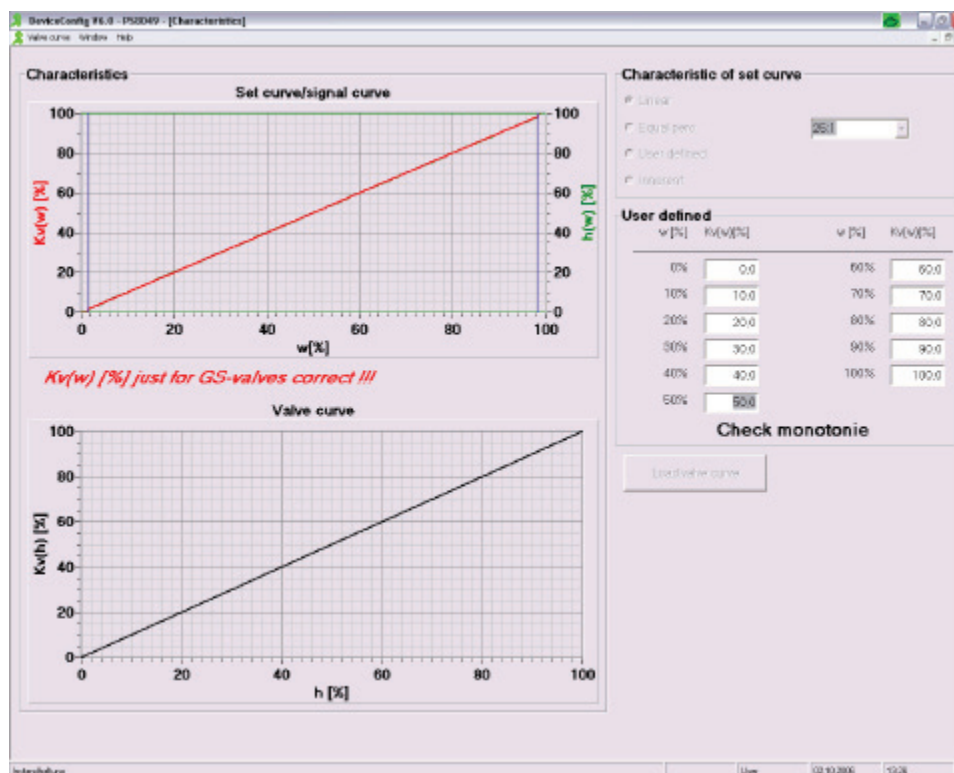
Setup-Parameters

Adjustment of control parameters (input signal, stroke limitation, closing function, control hysteresis, valve function, etc.)



Flow Characteristic

Adjustment of flow and display of various flow related functions.



Configuration-Software „DeviceConfig“

Diagnostic data

Informations of valve stroke,running time, soft- and hardware-versions, achieved temperature- and stroke levels, error messages, number of cycles, operating hours...

Diagnosis data

Base data	Temperature- /way classes	Status / Error	Maintenance data	Diagnosis data	Date code																																																																		
<div><div><p>Way classes</p><table><thead><tr><th>Class</th><th>Range</th><th>No. hours</th></tr></thead><tbody><tr><td>W1:</td><td>0 / 10%</td><td><input type="text" value="0"/></td></tr><tr><td>W2:</td><td>11 / 20%</td><td><input type="text" value="0"/></td></tr><tr><td>W3:</td><td>21 / 30%</td><td><input type="text" value="0"/></td></tr><tr><td>W4:</td><td>31 / 40%</td><td><input type="text" value="0"/></td></tr><tr><td>W5:</td><td>41 / 50%</td><td><input type="text" value="18"/></td></tr><tr><td>W6:</td><td>51 / 60%</td><td><input type="text" value="0"/></td></tr><tr><td>W7:</td><td>61 / 70%</td><td><input type="text" value="0"/></td></tr><tr><td>W8:</td><td>71 / 80%</td><td><input type="text" value="0"/></td></tr><tr><td>W9:</td><td>81 / 90%</td><td><input type="text" value="1"/></td></tr><tr><td>W10:</td><td>91 / 100%</td><td><input type="text" value="0"/></td></tr></tbody></table></div><div><p>Temperature classes</p><table><thead><tr><th>Class</th><th>Range</th><th>No. hours</th></tr></thead><tbody><tr><td>T1:</td><td>< -30 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T2:</td><td>-30 / -15 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T3:</td><td>-15 / 0 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T4:</td><td>0 / 15 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T5:</td><td>15 / 30 °C</td><td><input type="text" value="101"/></td></tr><tr><td>T6:</td><td>30 / 45 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T7:</td><td>45 / 60 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T8:</td><td>60 / 75 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T9:</td><td>75 / 85 °C</td><td><input type="text" value="0"/></td></tr><tr><td>T10:</td><td>> 85 °C</td><td><input type="text" value="0"/></td></tr></tbody></table></div></div>						Class	Range	No. hours	W1:	0 / 10%	<input type="text" value="0"/>	W2:	11 / 20%	<input type="text" value="0"/>	W3:	21 / 30%	<input type="text" value="0"/>	W4:	31 / 40%	<input type="text" value="0"/>	W5:	41 / 50%	<input type="text" value="18"/>	W6:	51 / 60%	<input type="text" value="0"/>	W7:	61 / 70%	<input type="text" value="0"/>	W8:	71 / 80%	<input type="text" value="0"/>	W9:	81 / 90%	<input type="text" value="1"/>	W10:	91 / 100%	<input type="text" value="0"/>	Class	Range	No. hours	T1:	< -30 °C	<input type="text" value="0"/>	T2:	-30 / -15 °C	<input type="text" value="0"/>	T3:	-15 / 0 °C	<input type="text" value="0"/>	T4:	0 / 15 °C	<input type="text" value="0"/>	T5:	15 / 30 °C	<input type="text" value="101"/>	T6:	30 / 45 °C	<input type="text" value="0"/>	T7:	45 / 60 °C	<input type="text" value="0"/>	T8:	60 / 75 °C	<input type="text" value="0"/>	T9:	75 / 85 °C	<input type="text" value="0"/>	T10:	> 85 °C	<input type="text" value="0"/>
Class	Range	No. hours																																																																					
W1:	0 / 10%	<input type="text" value="0"/>																																																																					
W2:	11 / 20%	<input type="text" value="0"/>																																																																					
W3:	21 / 30%	<input type="text" value="0"/>																																																																					
W4:	31 / 40%	<input type="text" value="0"/>																																																																					
W5:	41 / 50%	<input type="text" value="18"/>																																																																					
W6:	51 / 60%	<input type="text" value="0"/>																																																																					
W7:	61 / 70%	<input type="text" value="0"/>																																																																					
W8:	71 / 80%	<input type="text" value="0"/>																																																																					
W9:	81 / 90%	<input type="text" value="1"/>																																																																					
W10:	91 / 100%	<input type="text" value="0"/>																																																																					
Class	Range	No. hours																																																																					
T1:	< -30 °C	<input type="text" value="0"/>																																																																					
T2:	-30 / -15 °C	<input type="text" value="0"/>																																																																					
T3:	-15 / 0 °C	<input type="text" value="0"/>																																																																					
T4:	0 / 15 °C	<input type="text" value="0"/>																																																																					
T5:	15 / 30 °C	<input type="text" value="101"/>																																																																					
T6:	30 / 45 °C	<input type="text" value="0"/>																																																																					
T7:	45 / 60 °C	<input type="text" value="0"/>																																																																					
T8:	60 / 75 °C	<input type="text" value="0"/>																																																																					
T9:	75 / 85 °C	<input type="text" value="0"/>																																																																					
T10:	> 85 °C	<input type="text" value="0"/>																																																																					
					<input type="button" value="Back"/>																																																																		

application example

Positioner 8049 top mounted on GS-Control Valve Model 8021



Positioner 8049 top mounted on Aseptic Right Angle Control Valve Model 6021 with stainless steel body



Text and pictures are not binding. We reserve the right, to alter the equipment.