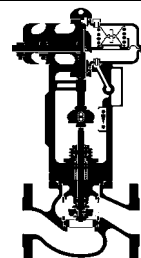


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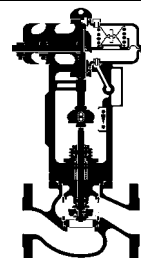


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General data

Mounting	On linear actuators	ARCA-integrated or acc. to IEC 534-6 (NAMUR) Range of stroke 10 ... 120 mm
	On quarter-turn actuators	ARCA-integrated or acc. to VDI/VDE 3845 Angle of rotation 90 °
Enclosure material		Aluminium cast / plastic
Degree of protection		IP 54, type 824.D IP 65 acc. to EN 60529
Installation position		Any installation position possible
Climate class	Operation	4K3, but -20 ... +80 °C, low temperature execution -40 ... +80 °C (see electrical data for explosion-protected devices)
	Storage	1K5, but -40 ... +80 °C
	Transport	2K4, but -40 ... +80 °C
Vibration resistance		< 10 g acc. to DIN 89011 Recommended continuous range for complete fittings ≤ 3 g
CE marking		Compliant with EMC Directive 2004/108/EC in accordance with EN 61326 A1 and NAMUR NE21 08.98
Controller data	Gain	max. 100
	Hysteresis	< 0,7 % of the control range
	Response level	< 0,5 % of the control range
	Nonlinearity	< 2 % of the control range
	Supply air influence	< 0,2 % / 0,1 bar, type 824.P < 0,1 % / 0,1 bar
Dimensions		See dimensional drawings figure 1 to 3
Weight	Type 824.P	Approx. 1,8 kg
	Type 824.E and 824.X	Approx. 2,0 kg
	Type 824.D	Approx. 2,8 kg
	Pressure gauge block	Approx. 0,5 kg
Connections	Electric	In dependence of version 0 to 2 cable inlets M20 x 1,5
	Pneumatic with external pipe	(X), Y and Z: collateral G ¼ DIN 45141, special version ¼"NPT, 824.D: behind G ¼ DIN 45141
	Pneumatic with internal pipe	(X), and Z: collateral G ¼ DIN 45141, Y: behind G 1/8 824.D: Z: behind G ¼ DIN 45141, Y: behind G 1/8

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Pneumatic data

Inlet air pressure		1,4...6 barg
Air quality	Solids	ISO 8573-1 Class 2 (particle size $\leq 1 \mu\text{m}$, particle density $\leq 10 \text{ mg/Nm}^3$)
	Dew point	ISO 8573-1 Class 2 (- 40 °C, min. 20 K below ambient temperature, low temperature execution < - 50 °C)
	Oil content	ISO 8573-1 Class 2 ($\leq 0,1 \text{ mg/Nm}^3$)
Air consumption		< 0,6 Nm ³ /h, type 824.P < 0,5 Nm ³ /h during stationary operation
Flow rate		6 Nm ³ /h at 1,4 barg

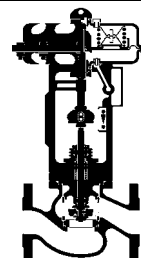
Explosion protection basic device

Explosion protection	Intrinsically safe zone 1+2 (gas)	II 2 G EEx ia IIC T6 EC type-examination certificate TÜV 99 ATEX 1487X	
	Flame-proof	II 2 G EEx d IIC T4/T5/T6 EC type-examination certificate DMT 02 ATEX E121X	
Internal capacitance		Negligible	
Internal inductance		Negligible	
Valid ambient temperature for connection to circuits with ①	T4	- 55 ... + 80 °C	$U_0 \leq \text{DC } 28 \text{ V}$, $I_K \leq 120 \text{ mA}$, $P \leq 3,3 \text{ W}$
	T5	- 55 ... + 70 °C	$U_0 \leq \text{DC } 38,8 \text{ V}$, $I_K \leq 60 \text{ mA}$, $P \leq 2,3 \text{ W}$
	T6	- 55 ... + 60 °C	$U_0 \leq \text{DC } 42,5 \text{ V}$, $I_K \leq 50 \text{ mA}$, $P \leq 2,1 \text{ W}$

Electrical / pneumatic data basic device

	Pneumatic	Not explosion-proof	Intrinsically safe	Flame-proof
Electrical connection		Figure 4	Figure 4	Figure 4
Input signal	0,2 ... 1 bar	0 / 4 ... 20 mA	0 / 4 ... 20 mA	0 / 4 ... 20 mA
Split ranges	0,2 ... 0,6 ... 1 bar	0 / 4 ... 10 / 12 ... 20 mA	0 / 4 ... 10 / 12 ... 20 mA	0 / 4 ... 10 / 12 ... 20 mA
Load resistance		170 Ω	170 Ω	260 Ω
Required load voltage		3,4 V	3,4 V	5,2 V

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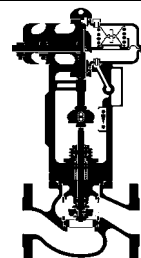
Electrical data options – inductive limit switches

Version	824.P . . .	824.E . . .	824.X . . .	824.D . . .
Limit switch N	824 . [] [] [] [] - [] [] 1 []			
Normal version	2 wire connection to DIN 19234 (NAMUR), for connected switching amplifier			-
2 slot initiators	Type SJ3,5-N			-
Function	Break contact (NC, normally closed)			-
Hysteresis	≤ 1 %			-
Control loop	See connected switching amplifier			-
Explosion protection zone 1+2 (gas)	-		II 2 G EEx ia IIC T6 ④	-
EC type-examination certificate	-		PTB 99 ATEX 2219 X	-
EMC acc. to	EN 60947-5-2 and DIN 19234			-
Electrical connection	Figure 5	Figure 5	Figure 5	-

Limit switch SN	824 . [] [] [] [] - [] [] 2 []			
Safety version	2 wire connection to DIN 19234 (NAMUR) for connected switching amplifier in safety version			-
2 slot initiators	Type SJ3,5-SN			-
Function	Break contact (NC, normally closed)			-
Hysteresis	≤ 1 %			-
Control loop	See connected switching amplifier			-
Explosion protection zone 1+2 (gas)	-		II 2 G EEx ia IIC T6 ④	-
EC type-examination certificate	-		PTB 00 ATEX 2049 X	-
EMC acc. to	EN 60947-5-2 and DIN 19234			-
Electrical connection	Figure 5	Figure 5	Figure 5	-

Limit switch E2	824 . [] [] [] [] - [] [] 3 []			
Direct switching version	3 wire connection with integrated switching amplifier			-
2 slot initiators	Type SB3,5-E2			-
Function	Make contact (NO, normally open)			-
Hysteresis	≤ 1 %			-
Supply voltage	10...30 V DC			-
Max. load current	100 mA			-
Electrical connection	Figure 6	Figure 6		-

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Electrical data options – potentiometer and position feedback

Version	824.P . . .	824.E . . .	824.X . . .	824.D . . .
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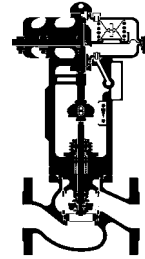
Potentiometer	824 - 2			
Resistance	200, 500 or 1000 Ohm ⑤			-
Deviation of characteristic	$\leq 2\%$ ⑥			-
Internal capacitance C_i	3,5 pF			
Internal inductance L_i	10 μ H			
Explosion protection	-		EEx i ⑦	-
EC type-examination certificate	-		not necessary	-
Electrical connection	Figure 7	Figure 7	Figure 7	-

Position transmitter 3w	824 - 3			
3 wire connection	RWG, type 4522			-
Supply voltage	15...24 V DC			-
Output	4(0) - 20 mA, short-circuit resistant			-
Current limitation	at ca. 28 mA			-
Load resistance R_i	0 - 400 Ohm			-
Deviation of characteristic.	$\leq 2\%$ ⑥			-
Electrical connection	Figure 8	Figure 8	-	-

Position transmitter 2w	824 - 4			
2 wire connection	RWG, type TMT 136R			-
Supply voltage	8,5 ... 36 V DC			-
Output	4 - 20 mA, short-circuit resistant			-
Current limitation	at ca. 36 mA			-
Load resistance R_i	1300 Ohm at 36 V DC			-
Deviation of characteristic.	$\leq 2\%$ ⑥			-
Explosion protection	-		-	-
EC type-examination certificate	-		-	-
Electrical connection	Figure 9	Figure 9	-	-

- ① Valid ambient temperature at other loops on request
- ② Special version to - 40° C (dew point < -50°C)
- ③ Special version NPT 1/4 "
- ④ Only by connection to valid switching amplifier
- ⑤ Adjustment of zero point and range at receiver terminal
- ⑥ Deviation of characteristic depends on mounting and stroke, max. 5 %
- ⑦ Passive element, therefore an EC type-examination certificate is not required. The valid external inductance and capacitance (L_a u. C_a) must be higher then L_i and C_i of the potentiometer

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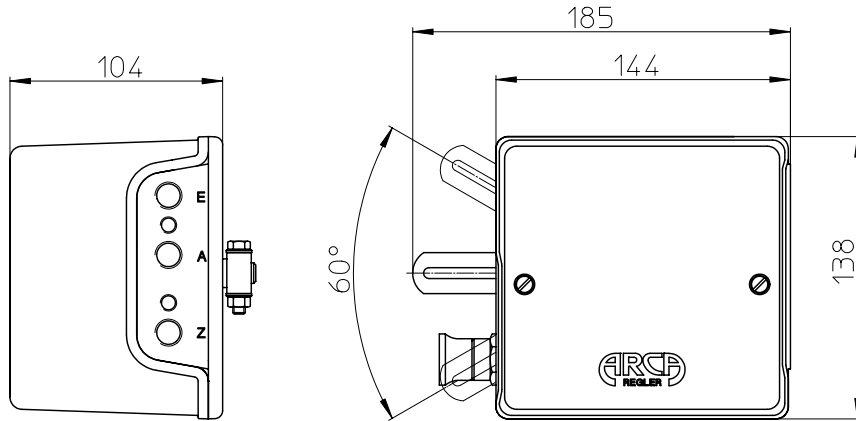


Figure 1 Dimensional drawing basic device type 824.P, 824.E and 824.X

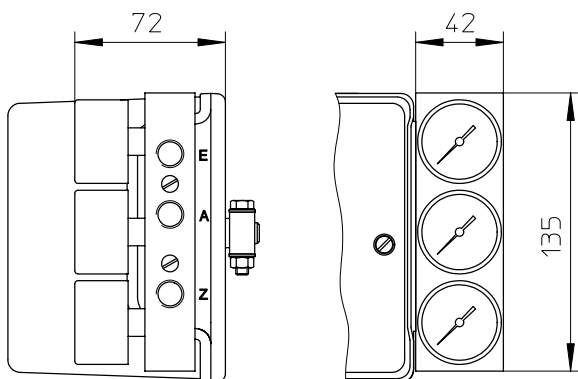


Figure 2 Dimensional drawing pressure gauge block

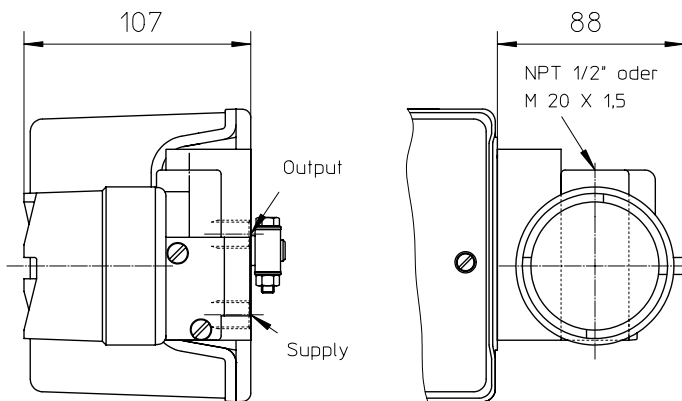
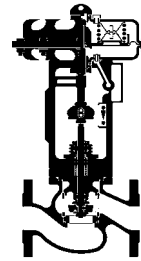


Figure 3 Dimensional drawing flame-proof type 824.D

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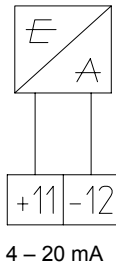


Figure 4 Electrical connection signal input basic device, type 824.E, 824.X and 824.D

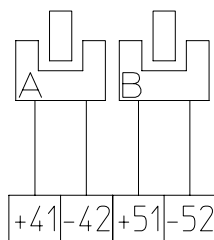


Figure 5 Electrical connection 2 wire limit switch (N and SN)

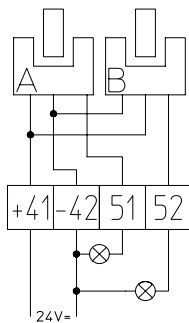


Figure 6 Electrical connection 3 wire limit switch (E2)

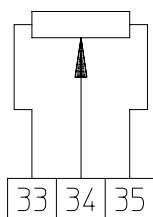
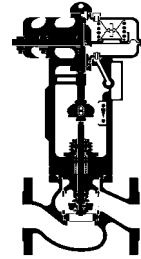


Figure 7 Electrical connection feedback potentiometer

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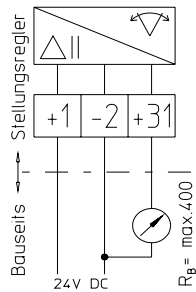


Figure 8 Electrical connection 3 wire position transmitter

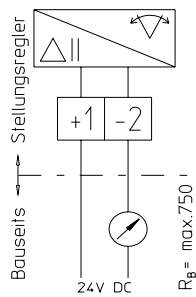
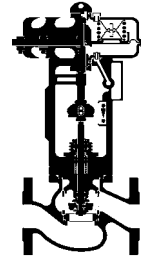


Figure 9 Electrical connection 2 wire position transmitter

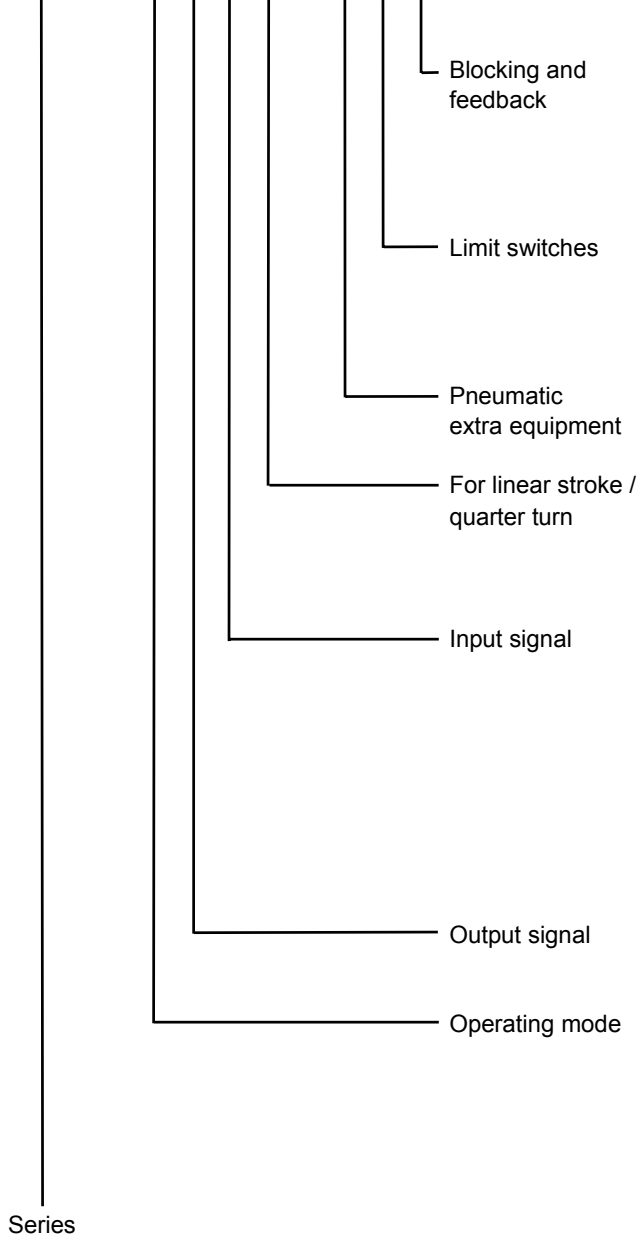
Technical Data Sheet Positioner Type 824



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Order keys

8 2 4 . P 0 0 0 - 0 0 0



- | | |
|----------|-----------------------------|
| 0 | without |
| 1 | ./. |
| 2 | Potentiometer |
| 3 | Position transmitter 3 wire |
| 4 | Position transmitter 2 wire |
-
- | | |
|----------|-------------------------------------|
| 0 | without |
| 1 | inductive normal version SJ3,5-N |
| 2 | inductive safety version SJ3,5-SN |
| 3 | inductive direct switching SB3,5-E2 |
-
- | | |
|----------|----------------------|
| 0 | without |
| 1 | pressure gauge block |
-
- | | |
|----------|-----------------------|
| 0 | Stroke \geq 20mm |
| 1 | Stroke < 20mm |
| 3 | Angle of rotation 90° |
| 4 | Angle of rotation 60° |
-
- | | |
|----------|-------------|
| 0 | 0,2-1,0 bar |
| 1 | 4-20 mA |
| 2 | 0-20 mA |
| 3 | 0,2-0,6 bar |
| 4 | 0,6-1,0 bar |
| 5 | 4-12 mA |
| 6 | 12-20 mA |
| 7 | 0-10 mA |
| 8 | 10-20 mA |
-
- | | |
|----------|---------------|
| 1 | single acting |
| 2 | double acting |
-
- | | |
|----------|---|
| P | pneumatic |
| E | electro-pneumatic, not explosion-proof |
| X | electro-pneumatic, intrinsically safe EEx i |
| D | electro-pneumatic, flame-proof EEx d |