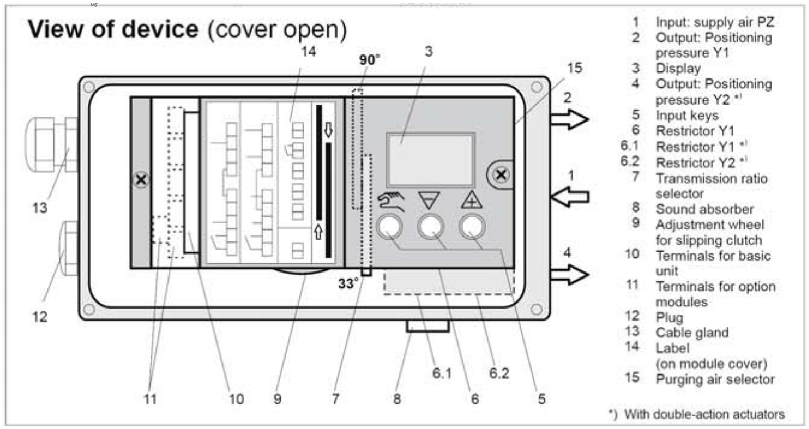
ARCA VALVES

⚠ **Attention: See Operating Instructions for safety instructions !**

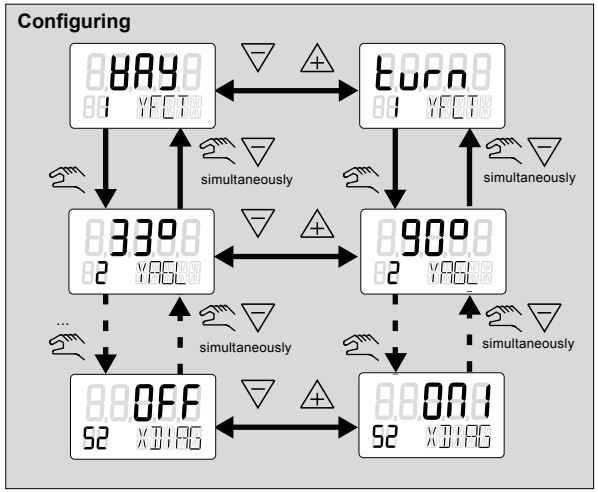
Positioner ARCAPRO Type 827A
Leaflet „Operation - a concise overview“



Changing the input level

Mode	Display (1)
P manual mode Change position using: ▽△	Position of potentiometer [%] Not initialized > 5 s PRST
Configure Change parameter name using: ☜ or ☜ + ▽ Change value using: ▽△	Parameter value Parameter number Parameter name > 5 s > 5 s
Manual mode Change position using: ▽△	Position[%] Error code Mode and setpoint [%] > 5 s > 5 s > 2 s
Automatic mode	Position [%] Error code Mode and setpoint [%] 1x 1x > 2 s > 2 s
Diagnostics	Diagnostics value ☜ + ▽ + △ > 2 s Diagnostics number Diagnostics name

Configuring



Automatic Initialization (starting with factory setting)
Condition: Transmission ratio selector (4) is set accordingly (see figure "View of device")

Step		Meaning
1.)	Part-turn actuator	turn YFCT · 90° YAGL
	Linear actuator	WAY YFCT · 33° YAGL · OFF YWAY
2.)	StrE INITA	△ Press for > 5 s Remaining steps carried out automatically.
3.)	P 32.4 RUN 1	Direction of action is determined.
4.)	P 92.4 RUN 2	Checking of travel and adjustment of zero and stroke (from stop to stop).
5.)	P 82.4 RUN 3	Determination and display of positioning time down (dxx.x), up (uxx.x) Stop with: ▽ Initiate l**eackage meaurement** with: △
6.)	P 32.4 RUN 4	Determination of minimum increment length.
7.)	P 52.4 RUN 5	Optimization of transient response.
8.)	32.4 FINSH	Initialization terminated successfully. (travel in mm for linear actuators) (angle of rotation for part-turn actuators) Continue using: ☜

(The gray values in the top line of the digital display are examples)

Possible messages

Display	Meaning	Measures
P 32.4 RUN 1 P 32.4 ERROR	**Actuator does not move.**	Acknowledge message using: ☜ Check restrictor (3) and open if necessary. Drive actuator to working range using: ▽△ Restart initialization.
P 88.4 dwnU	**Tolerance band "Down" violated.**	Change gearing (4). Continue using: △ **or** adjust friction clutch (5) up to display: P 6.4 dwnU Continue using: △ or for "WAY" using: ▽
SEt MIDL	**Once the friction clutch (5) has been adjusted.**	For linear actuators: Set pick-up lever perpendicular to the spindle: ▽△ Continue using: ☜
P 98.3 UP 1	**Tolerance band "Up" violated.**	Acknowledge message using: ☜ Set the next highest travel value on the lever. Restart initialization. Additional feature for part-turn actuators: Adjust tolerance band using: ▽△ up to display: P 92.8 90_95 Continue using: ☜
P 19.8 U-d <	**Span "Up-Down" insufficient.**	Acknowledge message using: ☜ Set the next lowest travel value on the lever. Restart initialization.
U 1.3 NOZZL	**Actuator does not move.**	Adjust positioning time using restrictor(s) (3).
d 1.8 NOZZL	**Positioning time is possible to adjust.**	Continue using: △ or using: ▽

See Operating Instructions for furhter messages

Parameter name	Function	Parameter values (bold = factory setting)	Unit	Notes
1.YFCT	Type of actuator	Normal / Inverted: part-turn actuator: **turn** / -turn; linear actuator: **WAY** / -WAY; linear actuator without sine correction: **LWAY** / -LWAY; part-turn actuator with NCS: **ncSt** / -ncSt; linear actuator with NCS: **ncSL** / -ncSL; linear actuator with NCS and lever: **ncSLL** / -ncLL		
2.YAGL	Rated angle of rotation of positioner shaft Set **transmission ratio selector** (4) appropriately (see view of device)	**33°** 90°	Degrees	
3.YWAY [1]	Range of stroke (**optional setting**). If used, the value on the actuator must correspond to the set range of stroke on the lever arm. Carrier pin must be set to the value of the actuator travel or, if this value is not scaled, to the next larger scale value	**OFF** 5 | 10 | 15 | 20 (short lever 33°) 25 | 30 | 35 (short lever 90°) 40 | 50 | 60 | 70 | 90 | 110 | 130 (long lever 90°)	mm	
4.INITA	Initialization (automatically)	**NOINI** | no / ###.# | Strt		
5.INITM	Initialization (manually)	**NOINI** | no / ###.# | Strt		
6.SCUR	Current range of setpoint: 0 ... 20 mA / 4 ... 20 mA	0 MA **4 MA**		
7.SDIR	Setpoint direction: Rising / Falling	**riSE** FALL		
8.SPRA	Setpoint split range start	**0.0** ... 100.0	%	
9.SPRE	Setpoint split range end	0.0 ... **100.0**	%	
10.TSUP	Setpoint ramp UP	Auto / **0** ... 400	s	
11.TSDO	Setpoint ramp DOWN	**0** ... 400	s	
12.SFCT	Setpoint function: Linear / Equal percentage 1: 25, 1:33, 1:50 / Invers equal percentage 25:1, 33:1, 50:1 / Freely adjustable	**Lin** 1 - 25 1 - 33 1 - 50 n1 - 25 n1 - 33 n1 - 50 FrEE		
13.SL0 [2] etc. ... 33.SL20	Setpoint turning point at: 0 % / etc. to / 100 %	0.0 ... 100.0	%	
34.DEBA	Deadband of closed-loop controller	**Auto /** 0.1 ... 10.0	%	
35.YA	Start of manipulated variable limit	**0.0** ... 100.0	%	
36.YE	End of manipulated variable limit	0.0 ... **100.0**	%	
37.YNRM	Standardization of manipulated variable: Mechanical / On flow	**MPOS** FLoW		
38.YDIR	Direction of manipulated variable for display and position feedback: Rising / Falling	**riSE** FALL		
39.YCLS	Tight closing with manipulated variable: None / Up only / Down only / Up and down	**no** uP do uP do		
40.YCDO	Lower value for tight closing	0.0 ... **0.5** ... 100.0	%	
41.YCUP	Upper value for tight closing	0.0 ... **99.5** ... 100.0	%	
42.BIN1 [3]	Function of binary input 1	NO contact / NC contact None: **OFF** Only message: on / -on Block configuration: bLoc 1 Block configuration and manual: bLoc 2 Drive valve to position YE: uP / -uP Drive valve to position YA: doWn / -doWn Block movement: StoP / -StoP Partial stroke test: PSt / -PSt		
43.BIN2 [3]	Function of binary input 2	NO contact / NC contact None: **OFF** Only message: on / -on Drive valve to position YE: uP / -uP Drive valve to position YA: doWn / -doWn Block movement: StoP / -StoP Partial stroke test: PSt / -PSt		
44.AFCT [4]	Alarm function: None / A1=Min, A2=Max / A1=Min, A2=Max / A1=Max, A2=Max	**OFF**		
45.A1	Response threshold of alarm 1	0.0 ... **10.0** ... 100.0	%	
46.A2	Response threshold of alarm 2	0.0 ... **90.0** ... 100.0	%	
47.ϟFCT [4]	Function fault message output: On fault / Fault + not automatic / Fault + not automatic + BIN ("+" means logical OR operation)	Normal / Inverted ϟ / -ϟ ϟ n A / -ϟ n A ϟ n A b / -ϟ n A b		
48.ϟTIM	Monitoring time for setting of fault message "control deviation"	**Auto /** 0 ... 100	s	
49.ϟLIM	Response threshold for fault message "control deviation"	**Auto /** 0 ... 100	%	
50.PRST	Reset all parameters which can be reset by "Init", "PArA" and "diAg".	**ALL**		
	Reset initialization parameters 1.YFCT to 5 INITM.	Init		
	Reset parameters 6.SCUR to 49.LIM.	PArA		
	Reset param. A to P of the extended diagnostics function as well as parameter 52.XDIAG.	diAg		
51.PNEUM	Fail in place: Standard pneumatic block / Fail in place pneumatic block	**Std** FIP		
52.XDIAG	Activating for extended diagnostics: Off / Single-stage alarm / Two-stage alarm / Three-stage alarm	**OFF** On1 On2 On3		

Parameter name	Function	Parameter values (bold = factory setting)	Unit	Notes
A.ϟPST [5]	Partial Stroke Test (PST) with the following parameters:			
A1. STPOS	Start position	0.0 ... **100.0**	%	
A2. STTOL	Start tolerance	0.1 ... **2.0** ... 10.0	%	
A3. STRKH	Stroke height	0.1 ... **10.0** ... 100.0	%	
A4. STRKD	Stroke direction	uP / **do** / uP do		
A5. RPMD	Ramp mode	**OFF** / On		
A6. RPRT	Ramp rate	0.1 ... **1.0** ... 100.0	%/s	
A7. FLBH	Behavior after failed PST	**Auto** / HOLd / AirIn / AirOu		
A8. INTRV	Test interval	**OFF** / 1 ... 365	Days	
A9. PSTIN	PST reference stroke time	**NOINI**/(C)##.#/Fdini/rEAL	s	
AA. FACT1	Factor 1	0.1 ... **1.5** ... 100.0		
Ab. FACT2	Factor 2	0.1 ... **3.0** ... 100.0		
AC. FACT3	Factor 3	0.1 ... **5.0** ... 100.0		
b.ϟDEVI [5]	Dynamic control valve behavior with the following parameters:			
b1. TIM	Time constant	**Auto** / 1 ... 400	s	
b2. LIMIT	Limit	0.0 ... **1.0** ... 100.0	%	
b3. FACT1	Factor 1	0.1 ... **5.0** ... 100.0		
b4. FACT2	Factor 2	0.1 ... **10.0** ... 100.0		
b5. FACT3	Factor 3	0.1 ... **15.0** ... 100.0		
C.ϟLEAK [5]	Monitoring pneumatic leakage with the following parameters:			
C1. LIMIT	Limit	0.0 ... **30.0** ... 100.0	%	
C2. FACT1	Factor 1	0.1 ... **1.0** ... 100.0		
C3. FACT2	Factor 2	0.1 ... **1.5** ... 100.0		
C4. FACT3	Faktor 3	0.1 ... **2.0** ... 100.0		
d.ϟSTIC [5]	Monitoring the stiction (slipstick) with the following parameters:			
d1. LIMIT	Limit	0.1 ... **1.0** ... 100.0	%	
d2. FACT1	Factor 1	0.1 ... **2.0** ... 100.0		
d3. FACT2	Factor 2	0.1 ... **5.0** ... 100.0		
d4. FACT3	Factor 3	0.1 ... **10.0** ... 100.0		
E.ϟDEBA [5]	Monitoring the deadband with the following parameter:			
E1. LEVL3	Threshold	0.1 ... **2.0** ... 10.0	%	
F.ϟZERO [5]	Monitoring the lower endstop with the following parameters:			
F1. LEVL1	Threshold 1	0.1 ... **1.0** ... 10.0	%	
F2. LEVL2	Threshold 2	0.1 ... **2.0** ... 10.0	%	
F3. LEVL3	Threshold 3	0.1 ... **4.0** ... 10.0	%	
G.ϟOPEN [5]	Monitoring the upper end stop with the following parameters:			
G1. LEVL1	Threshold 1	0.1 ... **1.0** ... 10.0	%	
G2. LEVL2	Threshold 2	0.1 ... **2.0** ... 10.0	%	
G3. LEVL3	Threshold 3	0.1 ... **4.0** ... 10.0	%	
H.ϟTMIN [5]	Monitoring the lower limit temperature with the following parameters:			
H1. TUNIT	Temperature unit	**°C** / °F		
H2. LEVL1	Threshold 1	-40 ... **-25** ... 90 / -40 ... 194		
H3. LEVL2	Threshold 2	-40 ... **-30** ... 90 / -40 ... 194		
H4. LEVL3	Threshold 3	. **-40** ... 90 / -40 ... 194		
J. ϟTMAX [5]	Monitoring the upper limit temperature with the following parameters:			
J1. TUNIT	Temperature unit	**°C** / °F		
J2. LEVL1	Threshold 1	-40 ... **75** ... 90 / -40 ... 194		
J3. LEVL2	Threshold 2	-40 ... **80** ... 90 / -40 ... 194		
J4. LEVL3	Threshold 3	. -40 ... **90** / -40 ... 194		
L.ϟSTRK [5]	Monitoring the number of total strokes with the following parameters:			
L1. LIMIT	Limit of strokes	1 ... **1E6** ... 1E8		
L2. FACT1	Factor 1	0.1 ... **1.0** ... 40.0		
L3. FACT2	Factor 2	0.1 ... **2.0** ... 40.0		
L4. FACT3	Factor 3	0.1 ... **5.0** ... 40.0		
O.ϟ DCHG [5]	Monitoring the no. of changes in direction with the following parameters:			
O1. LIMIT	Limit for number of changes in direction	1 ... **1E6** ... 1E8		
O2. FACT1	Factor 1	0.1 ... **1.0** ... 40.0		
O3. FACT2	Factor 2	0.1 ... **2.0** ... 40.0		
O4. FACT3	Factor 3	0.1 ... **5.0** ... 40.0		
P.ϟPAVG [5]	Monitoring the position average value with the following parameters:			
P1. TBASE	Time basis for average value generation	**0.5h** / 8h / 5d / 60d /2.5y		
P2. STATE	Status of monitoring position average value	**IdLE** / rEF./.##.# / Strt		
P3. LEVL1	Threshold 1	0.1 ... **2.0** ... 100.0	%	
P4. LEVL2	Threshold 2	0.1 ... **5.0** ... 100.0	%	
P5. LEVL3	Threshold 3	0.1 ... **10.0** ... 100.0	%	

HINTS:

1) Parameter only appears with "WAY", "-WAY", "ncSLL", and "-ncLL"

2) Turning points only appear with selection 12.SFCT = "FrEE".

3) NC contact means: action with opened switch or Low level
   NO contact means: action with closed switch or High level

4) Normal means: High level without fault
   Inverted means: Low level without fault

5) Parameters A up to P appears only if parameter 52.XDIAG is activated with On1, On2 or On3. The contents of the parameters A up to P appears also only if the selected parameter is activated with On.