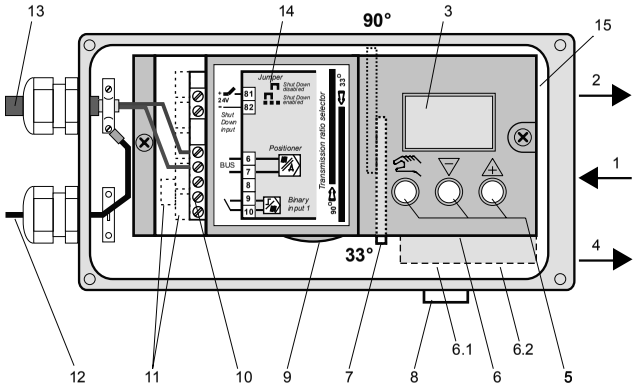
SIEMENS **SIPART PS2 PA 6DR55xx**

Leaflet "Operation - a concise overview"

(Order No. A5E00120712-04)

ATTENTION: See Operating Instructions for safety instructions !

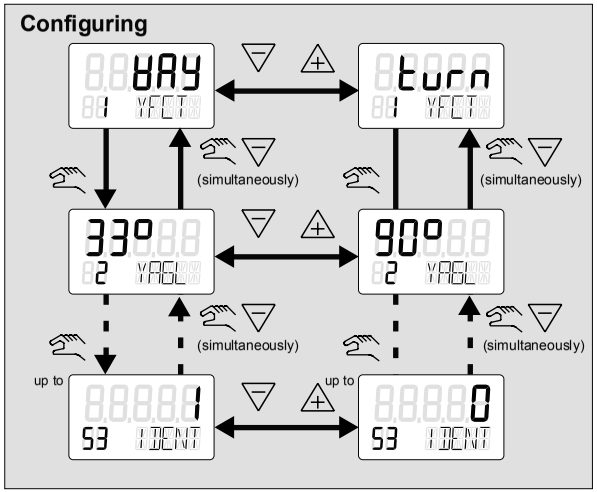
View of device (cover open; plastic housing)



1 Input: supply air PZ
2 Output: Positioning pressure Y1
3 Display
4 Output: Positioning pressure Y2 *)
5 Input keys
6 Restrictor Y1
6.1 Restrictor Y1 *)
6.2 Restrictor Y2 *)
7 Transmission ratio selector
8 Sound absorber
9 Adjustment wheel for slipping clutch
10 Terminals for basic unit
11 Terminals for option modules
12 Ground cable (plastic housing only)
13 Cable glant
14 Label (on module cover)
15 Purging air selector

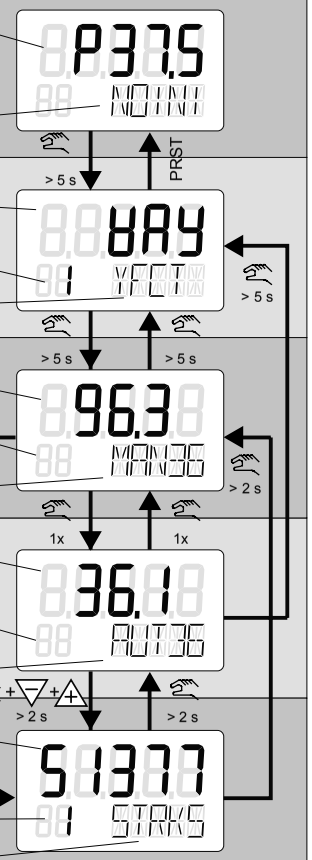
*) With double-action actuators

Configuring



Changing the input level

Mode	Display
P-manual mode Change position using ▽△	Potentiometer setting [%] Not initialized (can be reached using preset)
Configure Change parameter name using or and ▽ Change value using ▽△	Parameter value Parameter number Parameter name
Manual mode Change position using ▽△	Position [%] Error code Mode and Setpoint [%]
Automatic mode	Position [%] Error code Mode and Setpoint [%]
Diagnosis	Diagnosis value Diagnosis number Diagnosis name



Automatic initial start-up (starting with factory setting)

Step	Meaning
1.) Rotary actuator	turn 1 YFCT · 90° 2 YAGL
Linear actuator	WAY 1 YFCT · 33° 2 YAGL · OFF 3 YWAY
2.) Strt 4 INITA	△ Press for > 5 s Remaining steps carried out automatically
3.) P 32.4 57 RUN 1	Direction of action is determined
4.) P 92.4 57 RUN 2	Checking of travel and adjustment of zero and stroke (from stop to stop)
5.) P 82.4 57 RUN 3	Determination and Display of positioning time down (dxx.x), up (uxx.x) Stop with ▽ Pressing the △ key initiates **leakage measurement**
6.) P 32.4 57 RUN 4	Determination of minimum increment length
7.) P 52.4 57 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 display line 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 (6) and open if necessary Drive actuator to working range using ▽△ Restart initialization
P 88.4 58 dowU	**Down tolerance band violated**	Change gearing (7) Continue using △ or adjust sliding clutch to display P 86.4 58 dowU Continue using: △ or for "WAY" using: ▽
SEt MIDDL	**Once the slipping clutch has been adjusted**	Linear actuator: Set pick-up lever into vertical position using ▽△ Continue using
P 98.3 58 UP 1	**Up tolerance band violated**	Acknowledge message using Set the next highest travel value on the lever Restart initialization Additionally possible with rotary actuators: Adjust using ▽△ up to display: P 92.8 58 90_95 Continue using
P 19.8 58 U-d (	**Up/down span insufficient**	Acknowledge message using Set the next lowest travel value on the lever Restart initialization
U 1.3 NOZZL d 1.8 NOZZL	**Actuator does not move Positioning time is possible to adjust**	Adjust positioning time using restrictor(s) Continue using △ or ▽

See Manual for further messages

Parameter name	Function	Parameter values (Bold = factory setting)	Unit
1.YFCT	Type of actuator	turn (part-turn actuator) **WAY** (linear actuator) LWAY (linear actuator without sine correction) ncSt (part-turn actuator with NCS) -ncSt (ditto, inv. direction of action) ncSL (linear actuator with NCS) ncSLL (ditto, and lever)	
2.YAGL 1)	Rated angle of rotation of feedback **Set transmission ratio selector (7) appropriately (see view of device)**	**33°** 90°	Degrees
3.YWAY 2)	Stroke range (optional setting) If used, the value must correspond with the set of the leverage ratio on the actuator Driver 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.SDIR	Setpoint direction rising falling	**riSE** FALL	
7.TSUP	Setpoint ramp up	**Auto** / 0 ... 400	s
8.TSDO	Setpoint ramp down	0 ... 400	s
9.SFCT	Setpoint function Linear Equal-percentage 1:25, 1:33, 1:50 Inverse equal-percentage 1:25, 1:33, 1:50 Freely adjustable	**Lin** 1- 25 1 - 33 1 - 50 n1 - 25 n1 - 33 n1 - 50 FrEE	
10.SL0 3) 11.SL1 et. up to 29.SL19 30.SL20	Setpoint turning point at 0% 5% to 95% 100%	0.0 ... 100.0	%
31.DEBA	Dead band of controller	**Auto** / 0.1 ... 10.0	%
32.YA	Start of manipulated variable limiting	**0.0** ... 100.0	%
33.YE	End of manipulated variable limiting	0.0 ... **100.0**	%
34.YNRM	Standardization of manipulated variable To mech. travel To flow	**MPOS** FLOW	
35.YCLS	Tight closing with manipulated variable Without Top only Bottom only Top and bottom	**no** uP do uP do	
36.YCDO	Value for tight closing, bottom	**0.0** ... 100.0	%
37.YCUP	Value for tight closing, top	0.0 ... **100.0**	%
38.BIN1 4)	Function of BI 1 None Only message Block configuring Block configuring and manual Drive valve to position YE Drive valve to position YA Block movement Partial-Stroke-Test	**OFF** NO contact: on / bLoc1 / bLoc2 / uP / doWn / StoP / PST NC contact: -on / -uP / -doWn / -StoP / -PST	
39.BIN2 4)	Function of BI 2 None Only message Drive valve to position YE Drive valve to position YA Block movement Partial-Stroke-Test	**OFF** NO contact: on / uP / doWn / StoP / PST NC contact: -on / -uP / -doWn / -StoP / -PST	
40.AFCT 5)	Alarm function Without A1=min. A2=max A1=min. A2=min A1=max. A2=max	**OFF** normal: ⊓ı⊓Ā / ⊓ı⊓ı / ⊓Ā⊓Ā inverted: n̄ı n̄Ā / n̄ı n̄ı / n̄Ā n̄Ā	
41.A1	Response threshold of alarm 1	0.0 .. **10.0** .. 100.0	%
42.A2	Response threshold of alarm 2	0.0 .. **90.0** .. 100.0	%
43.ϟFCT 5)	on fault Fault + not automatic Fault + not automatic + BI ("+" means logical OR operation)	normal: ϟ / ϟ⊓Ā / ϟ⊓Āb inverted: -ϟ / -ϟ⊓Ā / -ϟ⊓Āb	
44.ϟTIM	Monitoring time for fault message "control deviation"	**Auto** / 0 ... 100	s
45.ϟLIM	Response threshold for fault message "control deviation"	**Auto** / 0 ... 100	%
46.ϟSTRK	Limit for stroke integral	0 ... 1.00E9	
47. PRST	Preset (factory setting) "no" nothing activated "Strt" start of factory setting after pressing key for 5s "oCAY" display following successful factory setting CAUTION: preset results in "NO INI"	**no** Strt oCAY	
48. XDIAG	Activating for extended diagnostics off single-stage alarm two-stage alarm three-stage alarm	**OFF** On1 6) On2 6) On3 6)	
49. FSTY	Safety position: parameterized safety setpoint last setpoint open venting valve	FSVL FSSP **FSAC**	
50. FSTI	Monitoring time for setting safety position	0 ... 100 (**30**)	s
51. FSVL	Safety setpoint	**0.0** ... 100.0	%
52. STNR	Station number	0 ... **126**	
53. IDENT	PROFIBUS ident number interchangeable to other positioner full functional range	0 **1**	

Parameter name	Function	Parameter values (Bold = factory setting)	Unit
A.ϟ PST 6)	Partial-Stroke-Test with the following parameters:		
A1. STPOS	Start position	**0.0** ... 100.0	%
A2. STTOL	Start tolerance	0.1 .. **2.0** .. 10.0	%
A3. STEP	Step height	0.1 .. **10.0** .. 100.0	%
A4. STEPD	Step direction	**uP** / do / uP do	
A5. INTRV	Test interval	**OFF** / 1 ... 365	days
A6. PSTIN	Partial-Stroke-Test reference step time	**noini**/(C)##.#/FdInI/rEAL	s
A7. FACT1	Factor 1	0.1 .. **1.5** .. 100.0	
A8. FACT2	Factor 2	0.1 .. **3.0** .. 100.0	
A9. FACT3	Factor 3	0.1 .. **5.0** .. 100.0	
b.ϟ DEV 6)	Generally fault of valve 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.ϟ LEAK 6)	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	Factor 3	0.1 .. **2.0** .. 100.0	
d.ϟ STIC 6)	Stiction (Slip stick effect) 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.ϟ DEBA 6)	Monitoring for dead band with the following parameter:		
E1. LEVEL3	Threshold	0.0 .. **2.0** .. 10.0	%
F.ϟ ZERO 6)	Zero shift 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.ϟ OPEN 6)	Shift of 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.ϟ TMIN 6)	Monitoring for lower temperatur limit with the following parameters:		
H1. TUNIT	Temperature unit	**°C** / °F	
H2. LEVL1	Threshold 1	-40 ... 90 / -40 ... 194	
H3. LEVL2	Threshold 2	-40 ... 90 / -40 ... 194	
H4. LEVL3	Threshold 3	-40 ... 90 / -40 ... 194	
J. ϟ TMAX 6)	Monitoring for upper temperature limit with the following parameters:		
J1. TUNIT	Temperature unit	**°C** / °F	
J2. LEVL1	Threshold 1	-40 ... 90 / -40 ... 194	
J3. LEVL2	Threshold 2	-40 ... 90 / -40 ... 194	
J4. LEVL3	Threshold 3	-40 ... 90 / -40 ... 194	
L.ϟ STRK 6)	Monitoring for stroke integral with the following parameters:		
L1. LIMIT	Limit of strokes	1 ... **1 000 000**	
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 6)	Monitoring for direction change with the following parameters:		
O1. LIMIT	Limit of direction changes	1 ... **1 000 000**	
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.ϟ PAVG 6)	Calculation for average value of position with the following parameters:		
P1. TBASE	Time basis for average value	**0.5h** / 8h / 5d / 60d / 2.5y	
P2. STATE	Condition of calculation	**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 appears only if "turn" or "WAY" is selected; at "turn", you cannot select 33°

2) Parameter does not appear if "turn", "LWAY" or "ncS_" has been selected with YFCT

3) Turning points only appear with selection SFCT = "FrEE"

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

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

6) Parameters A up to P only appears if parameter 48.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.