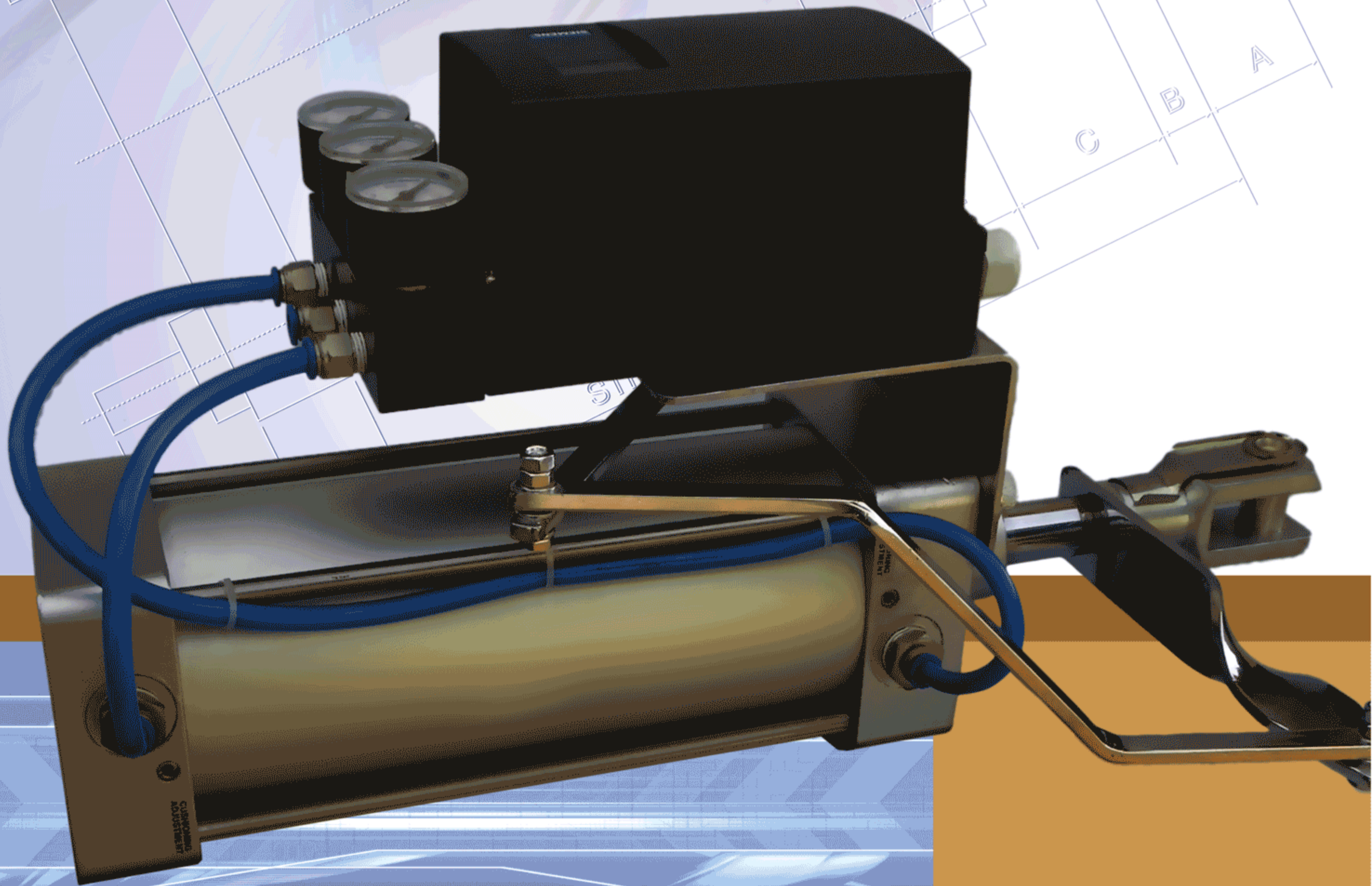


Power Cylinder With Electro Pneumatic Positioner

1100 SERIES



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| Courteously | Attentively | Respectably | Effectively |

SUDE[®]
An ISO 9001:2008 Certified Company

Power Cylinder with Electro Pneumatic Positioner

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Power cylinder consists of double acting cylinder with different mountings and having modified Valve positioner /Electro Pneumatic converter with a provision to increase the functional strokes as desired. Piston rod carries a ball socket joint for making a flexible connection with the final control element such as a Damper / Butterfly / Ball / Plug valve & other Rotary & Linear devices where automation is needed. If the cylinder is assembled with positioner alone then input to the positioner is 3 to 15 psig (0.2 to 1.0 kg/cm²) and supply pressure to the positioner may vary from 4 to 6kg/cm² and Filter Pressure Regulator is provided to maintain the set air supply pressure as required. If the cylinder is assembled with Electro Pneumatic converter then Inputs to it will be 4-20mA and 6.0 to 8.0kg/cm² air pressure. Valve positioner incorporates a four way relay, zero and range adjustments and two pressure gauges to indicate pressures on both sides of stroke requirement. Additional accessories can be provided such as Air-locks to obtain stay put fail safe position, boosters to increase stroking rate, limit switches etc.

Clean and dry instrument air is generally adequate for cylinder operation. Air lubricator is recommended for cylinder size above 4" or where piston rings need lubrication.

Maintenance generally is negligible except for routine cleaning of the piston rod a drop of oil is sufficient for smooth movement. Once a while a few drops of lubrication oil if filled in the cylinder [when external air lubricator is not used] to give a satisfactory performance over a long period. Unit is supplied fully calibrated and piped with accessories. If any field calibration becomes necessary the setting could be field adjusted. These cylinders are made of high quality seamless tubes and give a long service life without much maintenance. Every cylinder undergoes repeated inspection and 100% testing before dispatch.

Cylinder Specifications :

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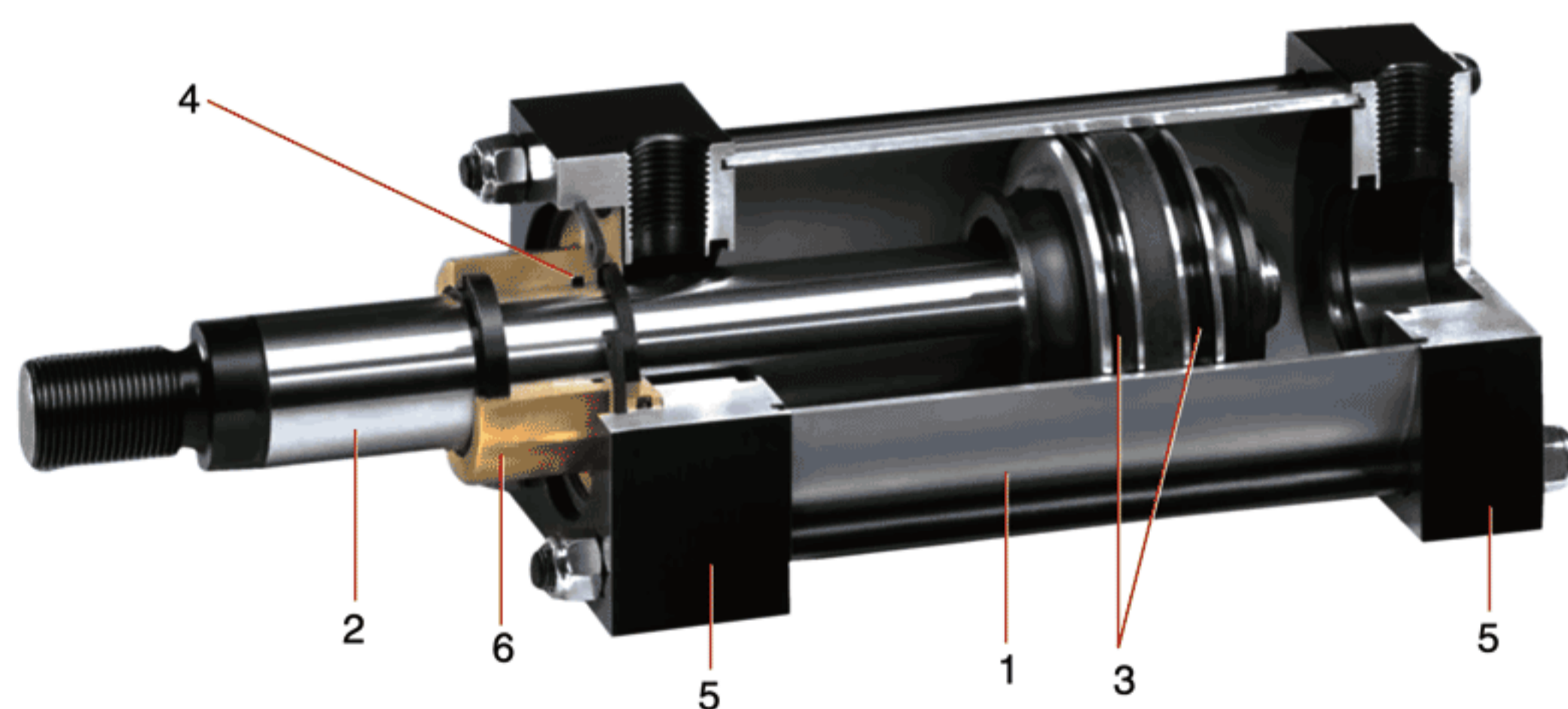
Maximum Working Pressure: 150 psig Maximum Working Temperature: 80°C, for higher the viton sealing is used or with standard seals the mounting position of the cylinder is selected in such a way where high temperature is not in contact. Control Signal Pressure rang: 3 to 15 psig [0.2 to 1.0kg/cm²g]

Air consumption : 1 SCFM [1.76NMCH] of free air at 80 psig [5.6kg/cm²g]

Thrust-available thrust may be considered as 70% of Cylinder bore area multiplied by operating air pressure.

Salient Features of Pneumatic Cylinders

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1. Seamless hard drawn pipe honed and chrome plated internally to 60 RC gives long life for piston seals.
2. Piston rod is ground, micro-finished and hard chrome plated for lasting seal life and anticorrosion. A selection of rod diameters is available with each bore size.
3. Synthetic rubber seals with an extra long and rigid inner lip provide an anti twist grip on angled sealing edge resists edge-breaking.
4. Special grease pocket filled with grease acts as a built-in reservoir of lubricant.
5. Cast iron heavy-duty end covers oxidized for rust prevention.
6. Extra long rod bearing especially for long stroke cylinders.

Valve positioner for Rotary/Linear actuator/cylinder is an ideal product for all linear & Quarter turn actuator /Cylinders, double acting and single acting. SUDE can offer special services of mounting these positioners on the actuator/cylinder.

Air Supply : 60 PSI, Input signal: 3 to 15 psig, Air consumption @ 4 bar [56.9 psi] supply 8.01/m [0.28 scfm] Air consumption @ 6 bar [85.3 psi] Supply: 10.01/m [0.35 scfm] Air delivery at 6 bar [85.3 psi] Supply 240 1/m [8.48 scfm]. Amplification factor at 6 bar [85.3 psi] supply 250. Cam rotation angle: 90 degree linear characteristic as a standard. Connections: ¼ "NPT. Gauges. On request two gauges can be supplied.

Linearity : <0.5%. Hysteresis :< 0.5%. Repeatability. <0.3% Sensitivity: 0.2% Temperature effect: 0.3%/10°C. Supply pressure effect: 0.1%/0.1 bar.

Salient Features of Electro Pneumatic Positioner

- Compact and efficient through well proven technology and intelligence
- Simple installation and automatic commissioning [self adjustment of zero and span]
- Communication based on the HART protocol of Siemens Make.
- Simple operation with Local operation and configuration of the device using 3 Input keys and a user friendly two line LCD & Programming through SIMATICPDM
- Negligible air consumption in stationary operation
- Tight shut off functions [ensures maximum positioning pressure]
- Numerous functions can be activated by simple configuring [e.g. characteristics and limits]
- Few moving parts hence insensitive to vibrations
- External non contacting position sensor as option for extreme ambient conditions
- Easily understandable adjustment mode, adjustment via the built in operator panel or remotely using the standardized configuration program
- 4-20mA Input, 2 wire
- Electronic adjustment of operating data, partly automatic and partly manual.
- Approved explosion protection for intrinsically safe operation
- Robust aluminum case IP65
- Influence of shock and vibration <1% with a load of up to 10 gland frequencies between 20 and 80 Hz
- Wide operating temperature range -20 to +90°C
- Stable control loop through self adaptation and continuous modulation of the output
- Mechanical position indicator
- Optional pressure gauge block and filter regulator
- Low operating cost,air consumption only 0.03 kg/Hr



Specifications of Electro Pneumatic Positioner

The Electro pneumatic positioner is a digital field device with a highly integrated micro controller. The positioner consists of the following components: Casing and cover PCB with corresponding electronics with or without communication via HART or with electronics for communication according to the PROFIBUS PA specification, IEC 1158-2 bus supplied device. Actuator travel detection system. Terminal housing with screw terminals. Pneumatic valve manifold with piezoelectric valve pre-control. The valve manifold is located in the housing the pneumatic connections for the inlet air and the positioning pressure on the right hand side. A pressure gauge block and / or a safety solenoid valve can be connected there as option. The circuit board container in the casing provides slots for separately ordered boards with the following functions.

IV module

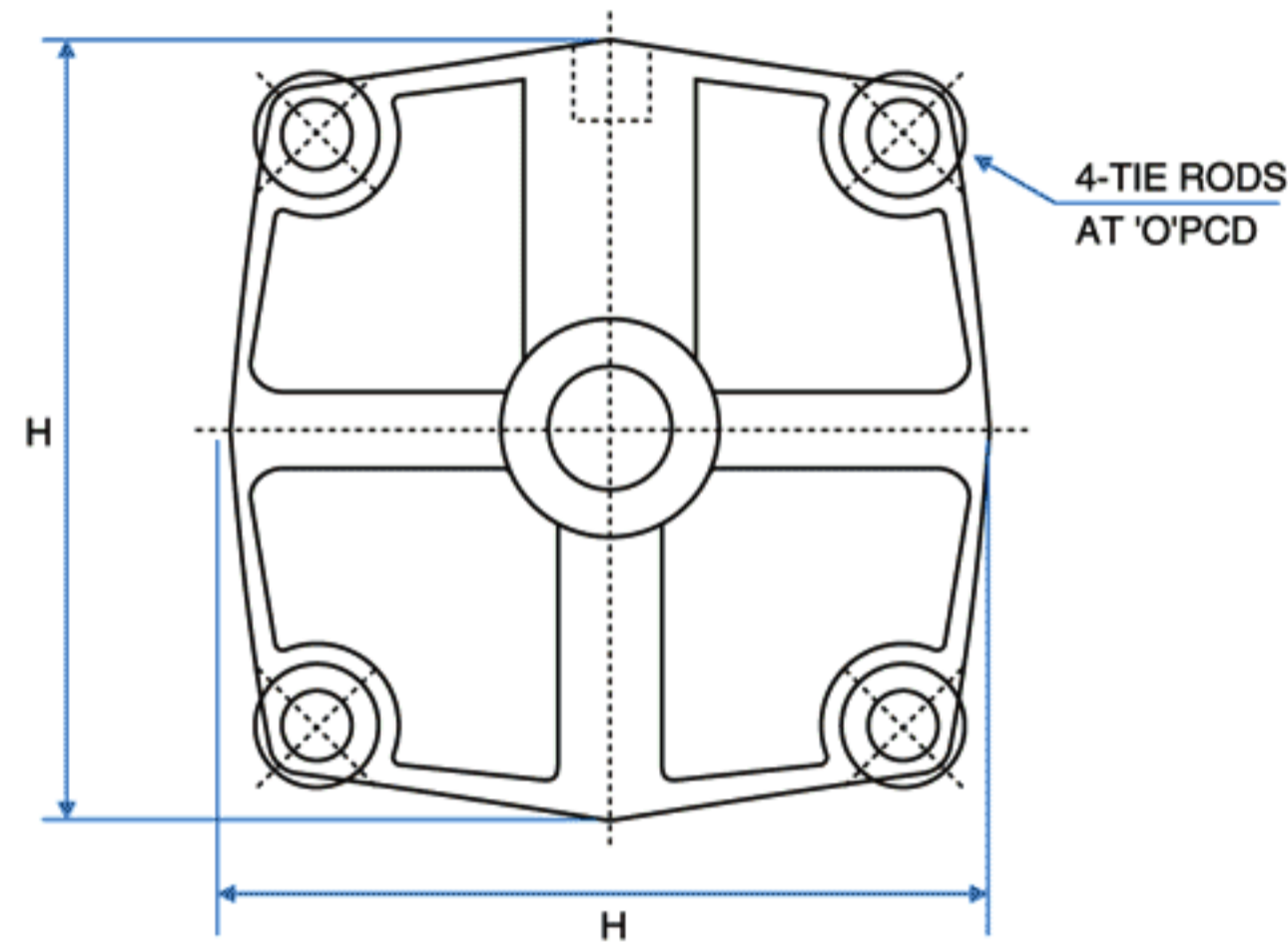
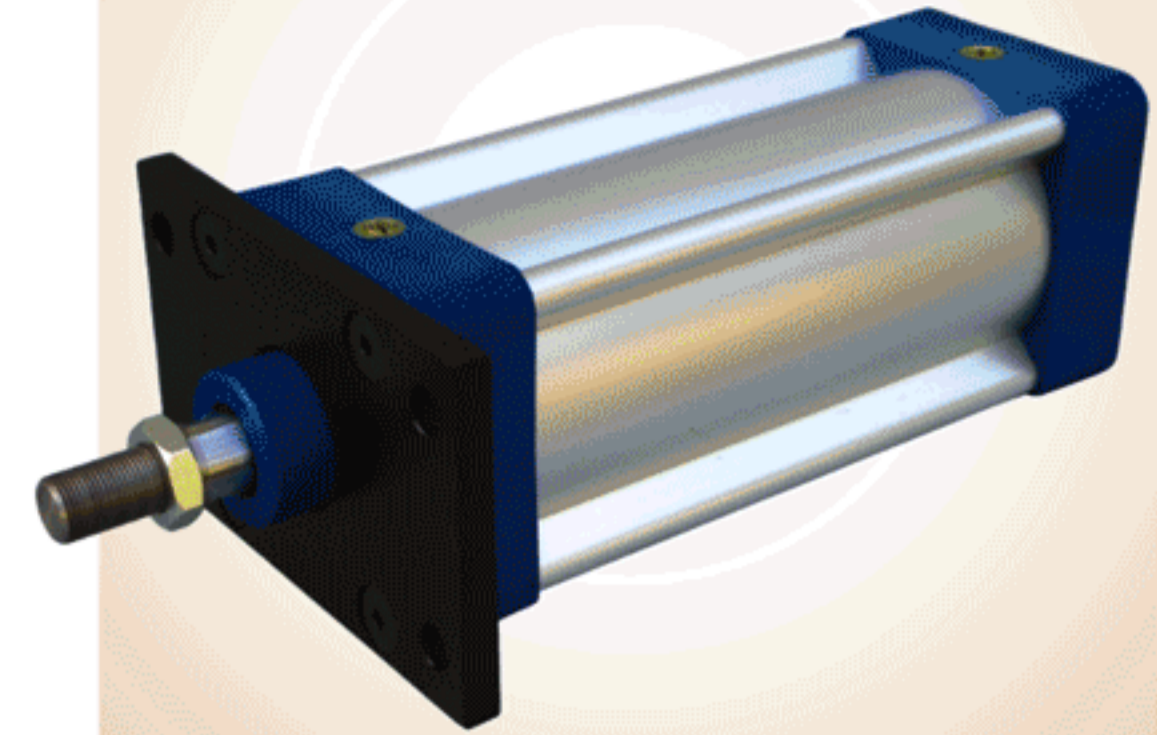
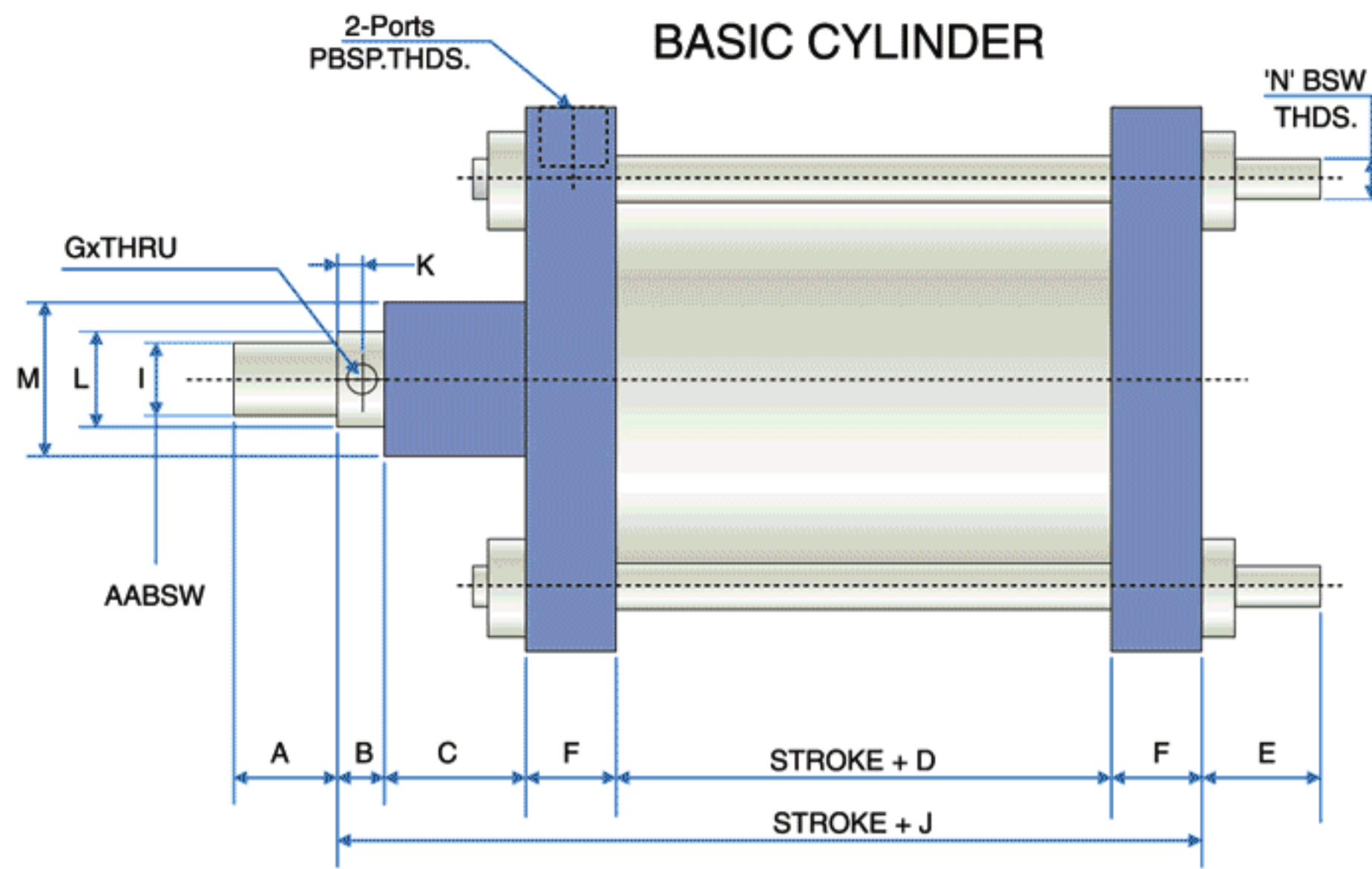
Position feedback as two wire signal 4 to 20mA

Alarm module [3 outputs, 1 input]

Signaling of two limits of the travel or angle by binary signals. The two limits can be set independently as maximum or minimum values. Output of an alarm if the set point position of the final control element is not reached in automatic mode or if a device fault occurs. Second Binary input for alarm signal of for triggering safety reaction or for blocking / signaling function or safety position

General Assembly Drawing of **Power Cylinder**

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Cylinder Bore	Force at 5 bar Air Pressure	
	Extension KGS	Retraction KGS
25	25.33	21.71
40	57.9	43.27
50	107.41	92.78
65	164.89	150.26
75	246.94	232.31
100	430.48	404.74
125	665.7	617.31
150	949.55	901.16
200	1672.12	1615.11
250	2596.76	2519
300	3722.88	3621.53
350	4810.56	4676.62

MODEL NO.	BORE	AA	A	B	C	D	E	F	G	H	J	K	L (h8)	M	N	O	P
1100/25/SL/EP	25	M8	12	8	15	25	20	15	-	38	78		9.6	24	3/16"	35.5	1/8"
1100/40/SL/EP	40	1/2"	19	13	28.5	41.5	25	22	6.5	50.5	127	7.5	19.3	38	1/4"	54	1/4"
1100/50/SL/EP	50	1/2"	19	15	25	54	25	22	6.5	63.5	138	7.5	19.3	43	1/4"	68	1/4"
1100/65/SL/EP	65	1/2"	19	15	25	57	25	22	6.5	77.5	141	7.5	19.3	43	1/4"	83	1/4"
1100/75/SL/EP	75	1/2"	19	15	32	61	30	26	6.5	92	160	7.5	19.3	47	3/8"	99	1/4"
1100/100/SL/EP	100	3/4"	25	15	25	61	30	29	8.2	119	159	8.5	25.6	48	3/8"	125	3/8"
1100/125/SL/EP	125	1"	32	19	38	86	40	36	10.2	146	215	10	35.1	60	1/2"	153	1/2"
1100/150/SL/EP	150	1"	32	19	38	79	40	35	10.2	170	206	10	35.1	60	1/2"	179	1/2"
1100/200/SL/EP	200	1 1/4"	45	19	57	86	45	38	10.2	225	238	10	38.1	65	3/4"	242	3/4"
1100/250/SL/EP	250	1 1/2"	50	19	57	95	45	38	12.2	278	247	11.5	44.5	76	3/4"	294	3/4"
1100/300/SL/EP	300	1 3/4"	50	21	60	95	50	38	12.2	330	252	13	50.8	86	1"	351	3/4"
1100/350/SL/EP	350	1 3/4"	50	24	60	130	55	57	16.2	390	328	14	58.4	105	1"	400	1"

NOTE : TECHNICAL SPECIFICATIONS, DETAILS & DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. DIMENSIONS IN THE TABLE ARE APPROXIMATE SUBJECT TO FINAL CONFIRMATION BY SUDE.

vignettegraphics.

CAT/1100/09-10



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