SOMATEC® Components for mech. engineering

SOMATEC GmbH • Gewerbestr. 19 • 88636 Illmensee • Germany
www.somatec-mb.de • info@somatec-mb.de • Phone +49(0)7558/92140

Pneumatic turret stop

with 6, 8 and 12 stop positions
for automation

→ Change October 2024 ←
No longer a separate valve variant
The valve is mounted on the new standard version using an adapter flange.

PRVA 8M right (45°- division)
with sensor and micro-valve

PRVA 6M right
(60° division)
and sensor

PRVA 12MA left
(30° division)
with absolute query
of the positions

Application:

With our turret stop, many problems can be solved inexpensively in mechanical and plant engineering. For example, if one or more stops need to be adjusted at the same time, if stops are located in inaccessible places, or to make a work process more efficient and safer.

Operation:

A 3/2 way valve is required to operate the stop, either fitted externally or as a direct installation on with our Matrix-Micro-valve.
On the external variant, the cable should be kept as short as possible, otherwise the stop can only be adjusted with very low number of cycles.
When in operation, the stop remains under pressure because in its unpressurised condition the stop has a larger radial clearance. For switching forward, the air pressure is then only briefly interrupted and reapplied. The initiation of the switch operation lasts approximately 0.12 seconds.
When used for sequential processing, the cycle time should be divided in such a way that approximately 2/3 of the time is used for deaeration and 1/3 of the time is used for aeration.

Design:

The stop is designed for maintenance-free operation. It is recommended to use only clean and dry air. All aluminium parts (in so far as they represent and advantage) are anodized; the steel parts are burnished and the wearable parts hardened and ground.

Service life of the stop:

Several factors play a role in the service life of the stop.
For example:

- Amount of air pressure with which the stopper is operated
- Throttled or unthrottled operation of the stop
- Weight of the screwed stop pin
- Cycles per second

It is recommended that the stop is operated with an inlet restrictor, which is to be set in such a way that it does not produce any loud clicking noises. The operating pressure of a correctly installed inlet restrictor plays a minor role.
When selecting the clock frequency, it should be noted that the larger the weight of the screwed stop, the lower the clock frequency should be. This is preferably 4-6 cycles per second.

Endurance tests carried out on the stop have yielded the following results:

- At 7 bar unthrottled approx. 80,000 cycles
- At 5 to 6 bar throttled approx. 4,000,000 cycles.

If in your case the stop is to be used in the extreme and these figures are insufficient, it is recommended that you carry out an endurance test yourself, taking into account the above points in order to determine whether the stop can withstand your requirements.

Service life of the stop with integrated micro valve:

The same points as already mentioned above apply for service life of the stop fitted with an integrated micro valve. Under normal operating conditions, an inlet restrictor is not required here since the valve body already has a throttle bore of 0.7mm.
If the stop is to be operated at its full load limit, the use of an inlet restrictor can increase the service life in order to better match it to the application.

Turret stop series:

The turret stop is available in the following variants angeboten:

- 6-old, 8-fold and 12-fold (number of stop points)
- Right or left design (position of the cylinder housing) *all subsequent illustrations are shown in the right design.*
- According to the type of equipment, e.g. 3-fold binary coding for the sensor
- Attention, since October 2024, there is no longer a separate valve variant: The valve is available as an assembly as an accessory and can be mounted on the new standard version.

Turret stop designations:

PRVA 6 right	Pneumatic turret stop, 6-fold right, <u>without</u> the possibility of query
PRVA 6**<u>M</u>** right	Pneumatic turret stop, 6-fold right, with binary coded **<u>magnetic pins</u>** for position query, but without the associated sensor

The same designations apply to the 8-fold and 12-fold turret stop, as well as for the left design.
On the last page you will find all the accessories and respective item numbers listed for our turret stops.

Special versions for complete query:

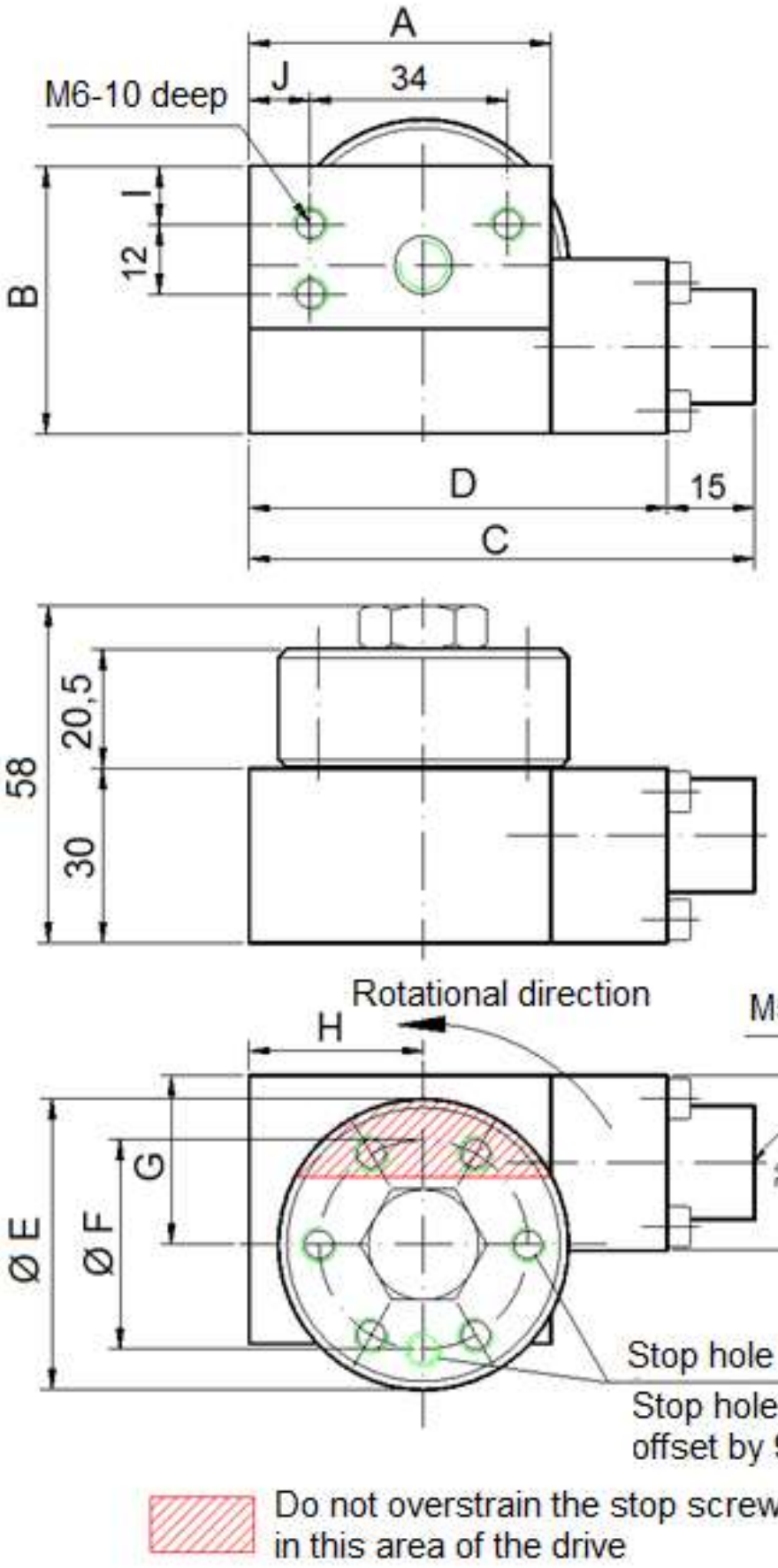
On 8-fold and 12-fold turret stops there are additional variants **MA**. Here, the designation **A** stands for an **absolute query of the positions**
On an 8-fold stop, a zero position is thus avoided and on a 12-fold stop the 6 intermediate positions are omitted.
These special versions have a 4-fold binary encoding and are also equipped with a 4-fold sensor.

Position display:

For the stops PRVA 6M and PRVA 8M, there is a single-digit digital display for decoding the positions.
Even on machines with no controller, this allows for the turret stop positions to be displayed on the control panel of the machine with very little effort.
The display is not required for machines with their own controller.

Turret stop without position sensing
Image shows PRVA 6 rechts

Left design as mirror image



	PRVA 6	PRVA 8	PRVA 12
A	52	52	80
B	46	62	80
C	87	87	97
D	72	72	82
Ø E	Ø 50	Ø 58	Ø 80
Ø F	Ø 36 6xM6	Ø 44 8xM8	Ø 66 12xM8
G	29	32	39
H	30	30	40
I	10	24,5	35
J	10,5	10,5	20,5

When ordering displaced stop holes please specify the item number _ _ _ _ **90°** in addition.

Technical data:

	PRVA 6	**PRVA 8**	**PRVA 12**
Stop points:	6 pieces	8 pieces	12 pieces
Mass shift:	ca. 150 g	ca. 500 g	ca. 700 g
Impact mass:	approx. 500 N at 3-4 m /min. undamped	approx. 800 N at 3-4 m / min. undamped	
	approx. 1860 N at damped drives	approx. 4700 N at damped drives	
Weight:	approx. 450 g	approx. 600 g	approx. 950 g
Nominal torque: (theoretical)	approx. 1,4 Nm	approx. 1,9 Nm	approx. 2,8 Nm
Air consumption:	at 6 bar approx. 0.014 NL		
Clock rate:	approx. 0.12 sec. (min. 0.09 sec.)		

Turret stop without position sensing for sensor
Image shows PRVA 8M right

Left design as mirror image

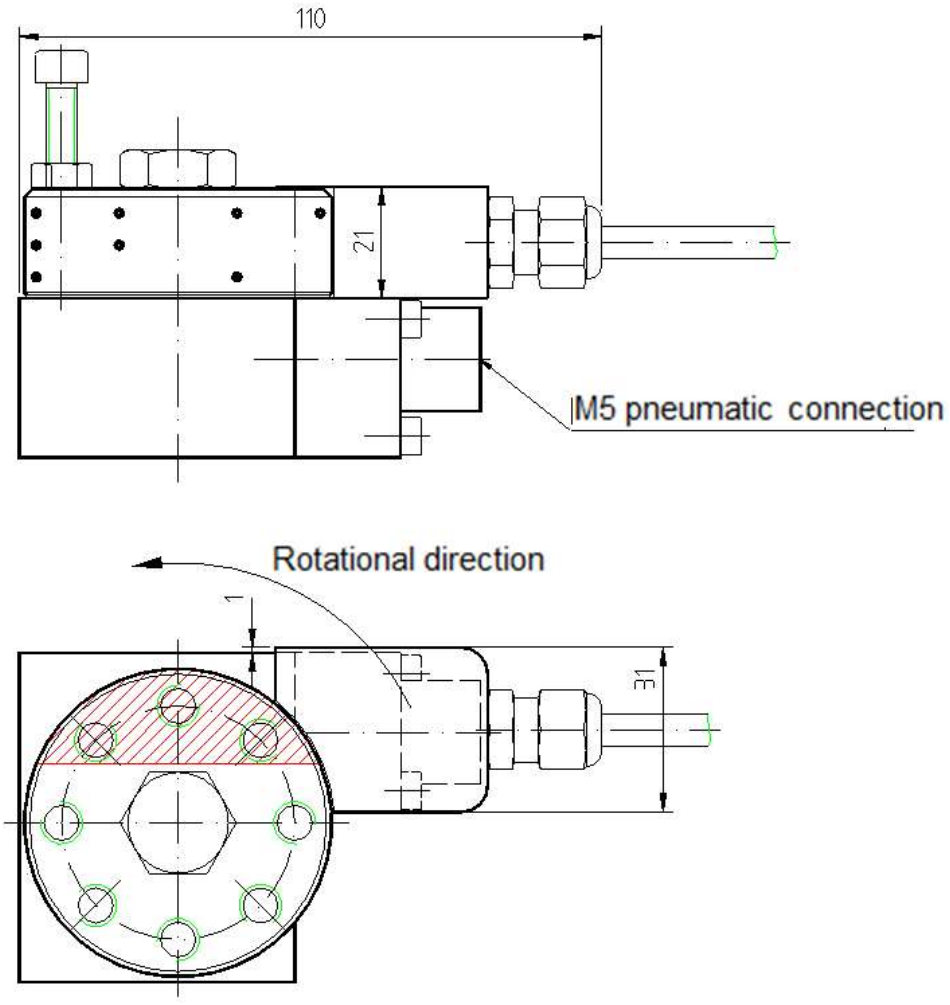
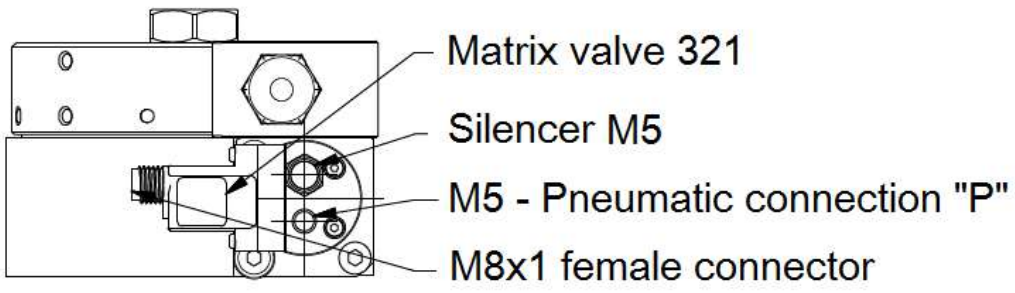
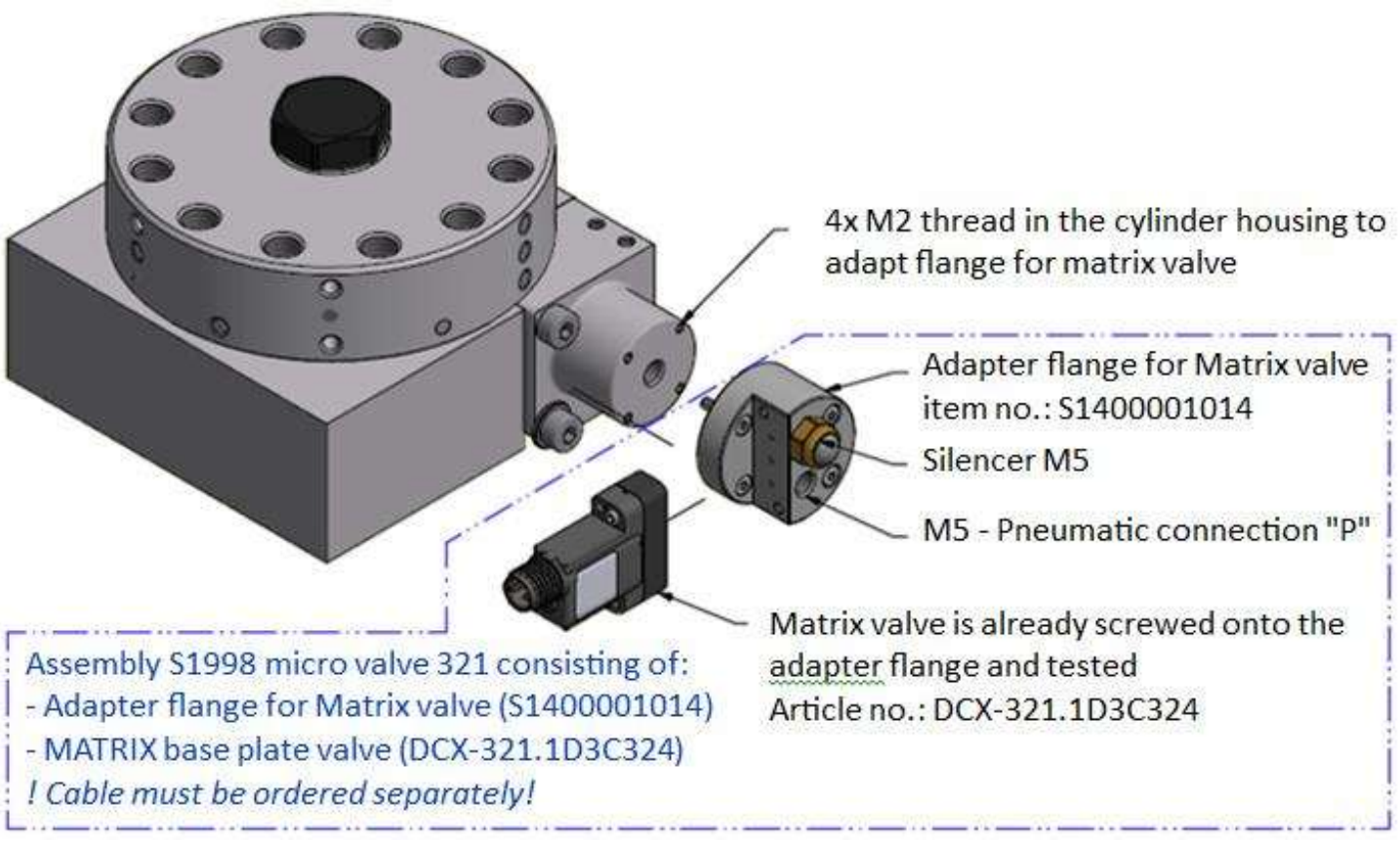


Image shows PRVA 12M right

Including with matrix valve

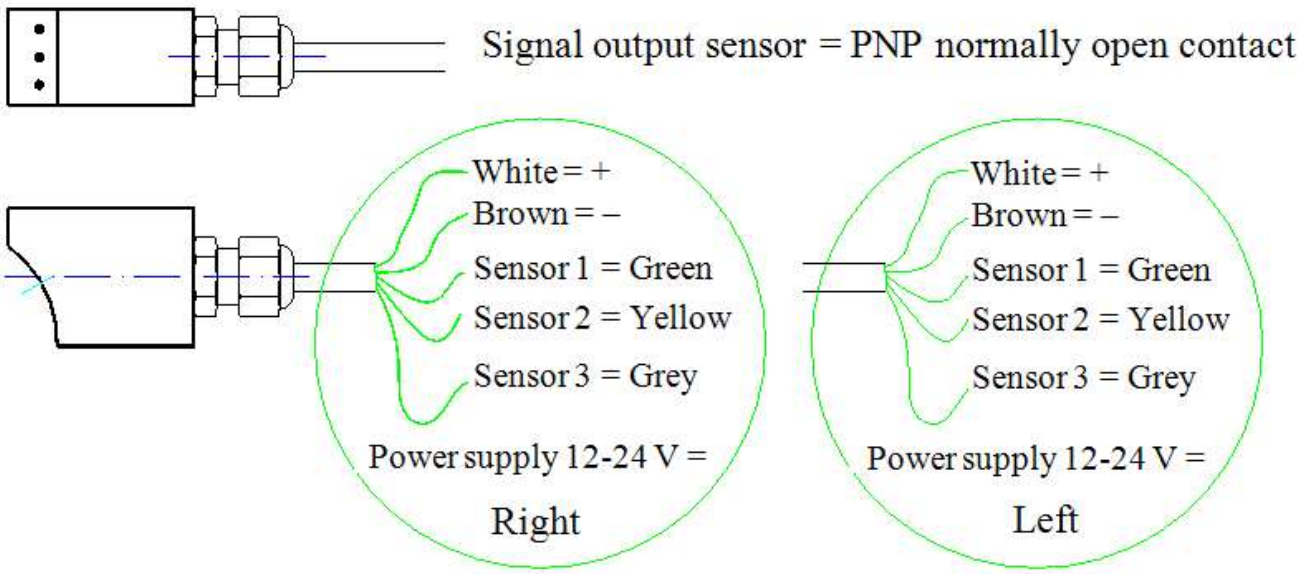




Sensor with PUR cable for

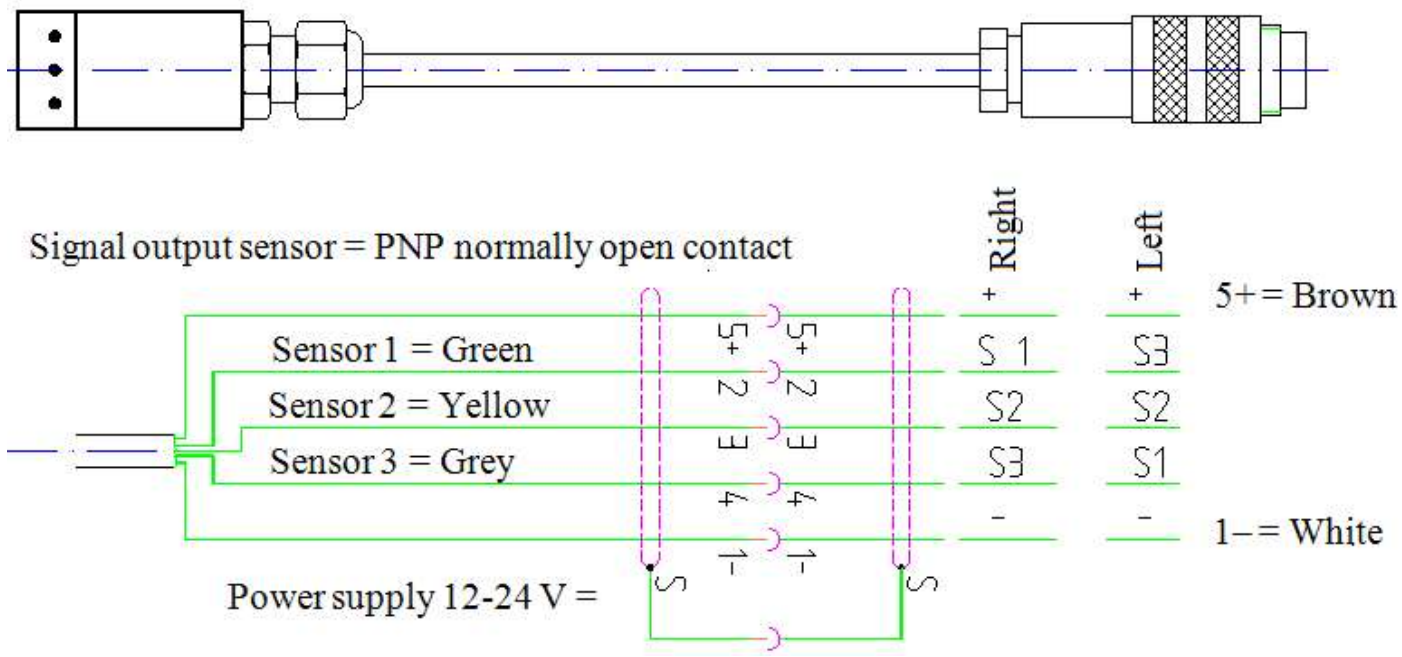
PRVA 6M; PRVA 8M; PRVA 12M

Do not use for binder plug connection



Sensor with 0.4m cable and binder plug – coupling plug S.423 7 pin. PG7 for

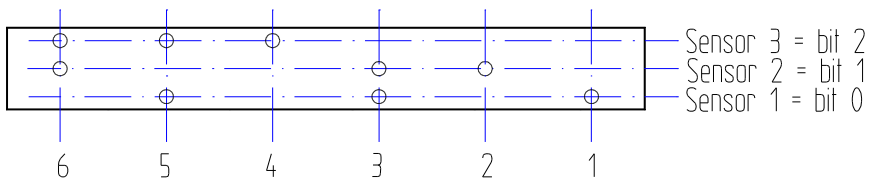
PRVA 6M; PRVA 8M; PRVA 12M



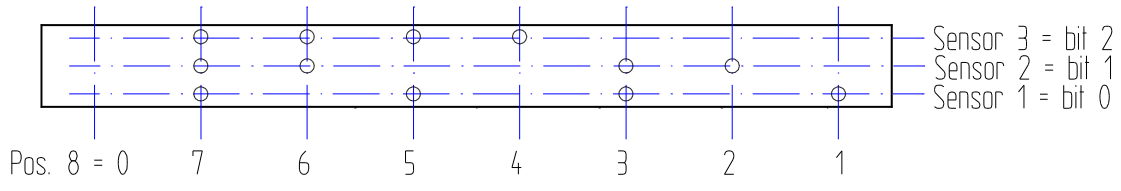
Processing the indexing plate and binary code positions

Left design as mirror image

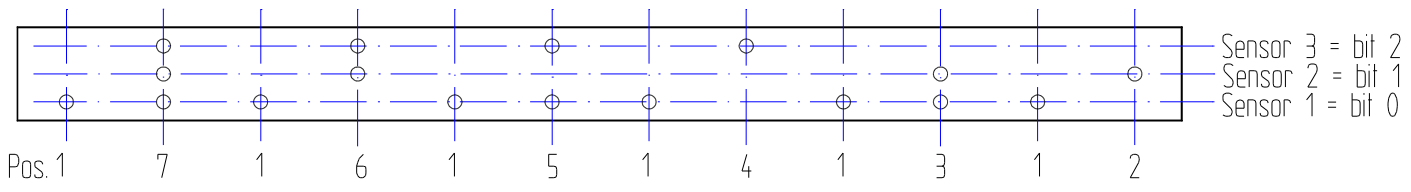
PRVA 6M



PRVA 8M



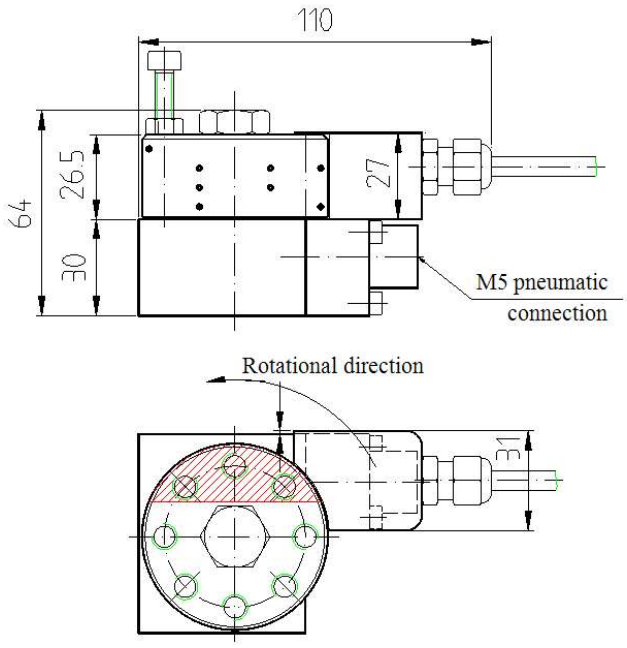
PRVA 12M



Special – Turret stop for absolute query of all positions

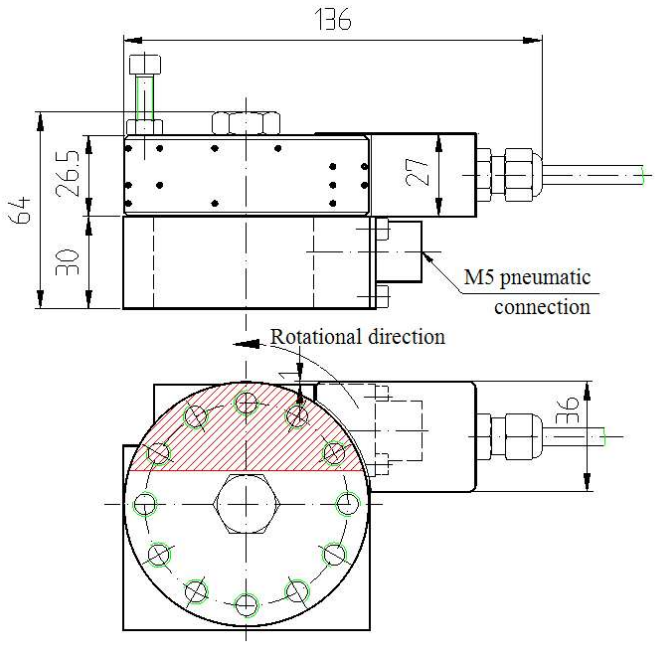
PRVA 8MA right

Left design as mirror image



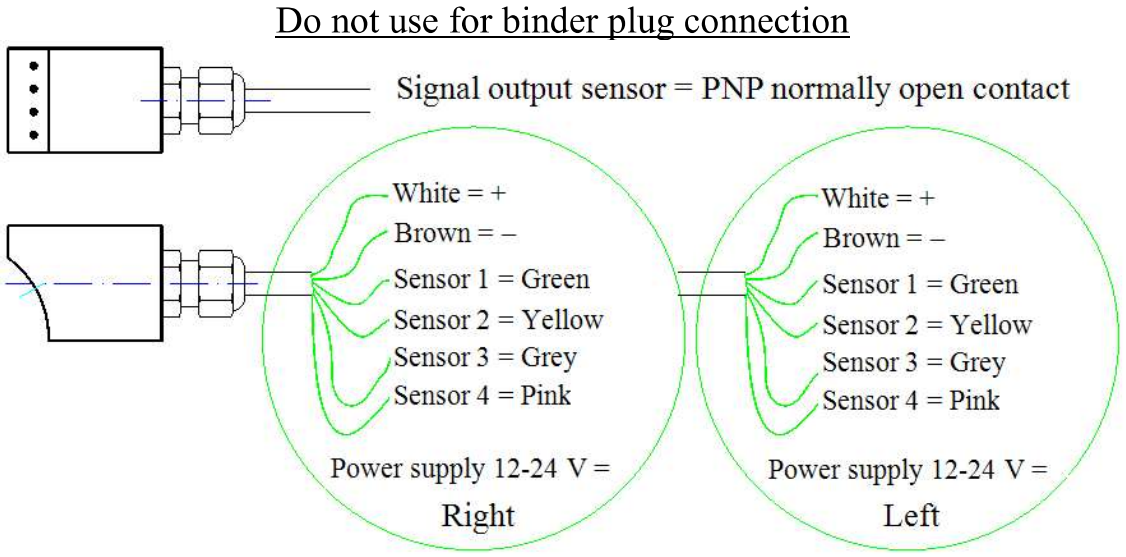
PRVA 12MA right

Left design as mirror image

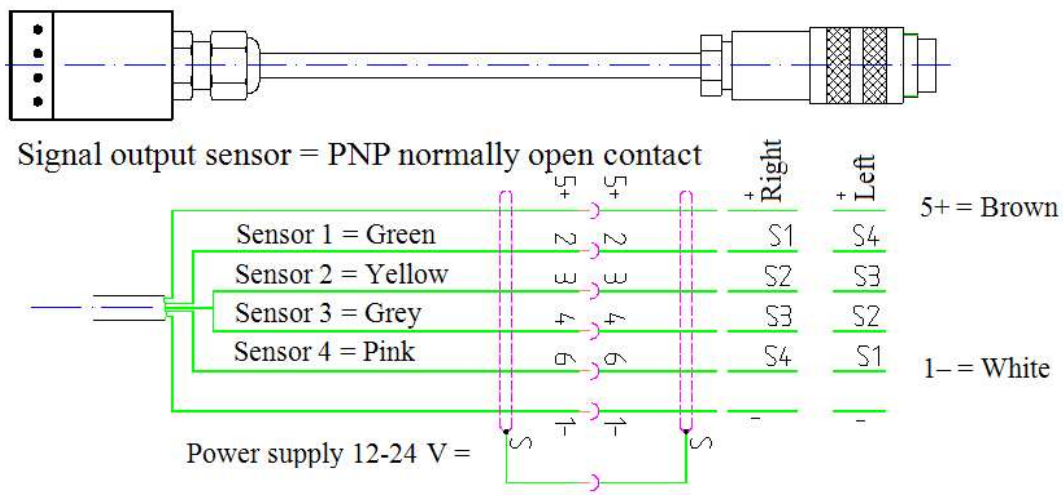


Sensor with PUR cable for PRVA 8MA and PRVA 12MA

Do not use for binder plug connection

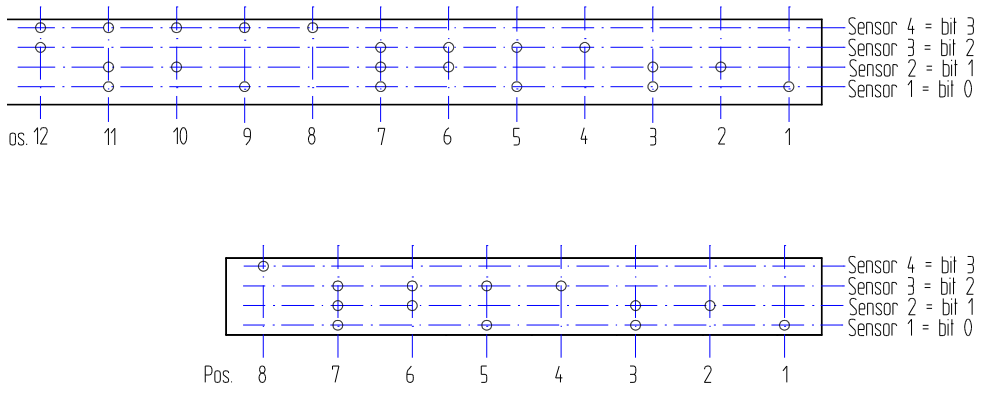


Sensor with 0.4m cable and binder plug – coupling plug S.423 7 pin. PG7 for PRVA 8MA and PRVA 12MA



Processing the indexing plate and binary code positions

Left design as mirror image



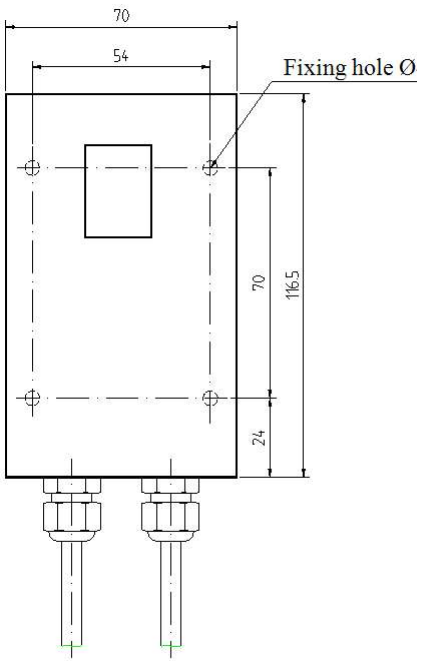
Matrix-valve for direct cultivation
<u>direct adaption through additional flange</u>
PRVA 6; PRVA 8; PRVA 12 bzw. M- and MA-variants

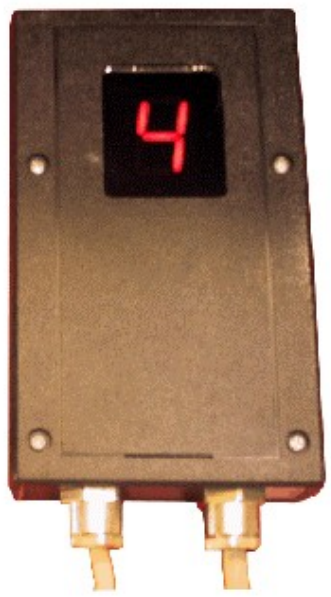
Technical Data:

Control:	Direct; PFM; PWM: PNM; combination
Function:	3/2 NC
Medium:	Dry air pressure / inert gases (-10 +50°C)
Flow rat	30 l/min (± 10 at 6 bar rel.)
Throttle bore on stop:	0,7 mm
Pressure range:	P = 0 to 8 bar
Temperaturbereich:	-10° C bis +50°
Opening response time	< 3 ms
Closing response time	< 1,5 ms
Frequency:	200 Hz
Sealing material:	NBR
Protection type:	IP 52
Power consumption:	0,05 A / 1,2 W
Voltage:	24 VDC +/- 10% - ED 100%
Electrical connections:	Plug connection: 1xM8
Number ob cycles:	4 - 6 beats per second

Position display for PRVA 6M and PRVA 8M

The position display is suitable for stops 6M, 8M, as well as for 12M. For machines which do not have a controller, it is a simple aid to display the positions. It requires only a power supply of 12 - 24 volts to operate, which can also simultaneously operate the sensor.





Item – Numbers and description for turret stop PRVA

Description	Item no.	May be combined with accessory item no
PRVA 6 right	1029	1998
PRVA 6 left	1042	1998
PRVA 6M right	1045	1179; 1171; 1047; 1998
PRVA 6M left	1046	1179; 1171; 1047; 1998
PRVA 8 right	1028	1998
PRVA 8 left	1041	1998
PRVA 8M right	1108	1180; 1172; 1047; 1998
PRVA 8M left	1109	1180; 1172; 1047; 1998
PRVA 12M right	1126	1181; 1173; 1998
PRVA 12M left	1146	1181; 1173; 1998

Special – Turret stop for absolute query of all positions:

Description	Item no.	May be combined with accessory item no
PRVA 8MA right	1185	1191; 1192; 1998
PRVA 8MA left	1184	1191; 1192; 1998
PRVA 12MA right	1188	1194; 1195; 1998
PRVA 12MA left	1189	1194; 1195; 1998

Description for accessories	Item no. (for version rigth + left)				
	PRVA 6M	**PRVA 8M**	**PRVA 12M**	**PRVA 8MA**	**PRVA 12MA**
Sensor with 3 m PUR cable	1179	1180	1181	1191	1194
Sensor with binder plug and 0.4 m cable	1171	1172	1173	1192	1195
Coupling for binder plug with 5 m cable	1107				
Assembly: Adapter flange for Matrix valve including with Vent filter and MATRIX base plate valve 3/2 NC	1998				
5 meter PUR-cable (3 x 0,25) with connector M8 - 0°	630035				
Digital display (for PRVA 6M + 8M - RE + LI)	1047		**---**		

SOMATEC® Components for mech. engineering

SOMATEC GmbH • Gewerbestr. 19 • 88636 Illmensee • Germany
www.somatec-mb.de • info@somatec-mb.de • Phone +49(0)7558/92140

Robust Design
of our turret stop PRVA

- robust steel housing –
- double acting -

Ourrobust and double-acting design offers the following advantages:

- Higher housing load capacity (a housing brake due to overload is therfore almost impossible)
- No riskt of spring brake
- The rotating piece remains in position when pressure is interrupted
- The rotating piece is pressed evenly onto the steel housing via a sping washer and ensures reliable switching! In the existing version, this function is performed by an O-Ring, which loses ist preload over time.

Application and area of use:

Anywhere the service life of our standard PRVA is insufficient due to excessive stress, leading to premature housing failure.

Design:

The housing is made of burnished steel, ensuring a long service life. The rotating piece is made of hard-anodized aluminium and runs on the steel housing with spring tension, ensuring constant friction.

Control:

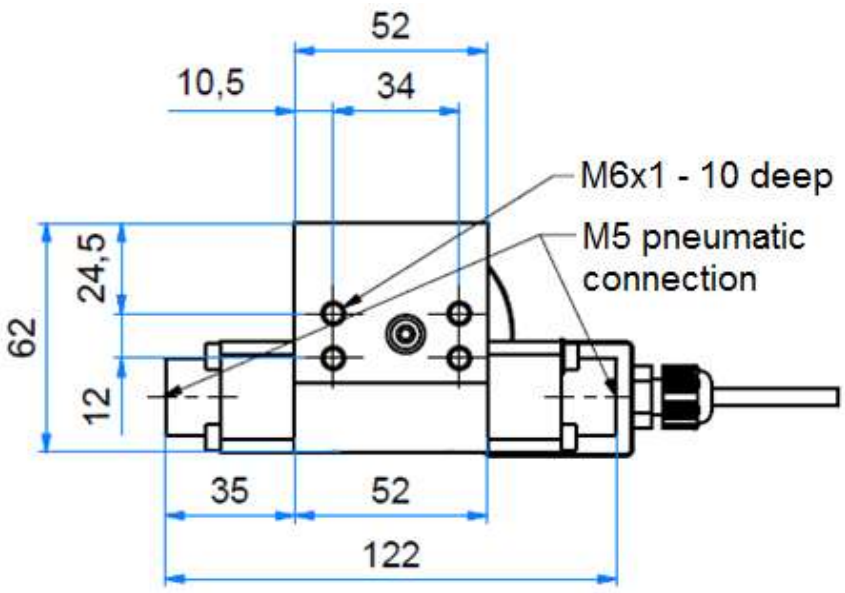
A 5/2-way valve is required to control the double-acting design.

Available designs:

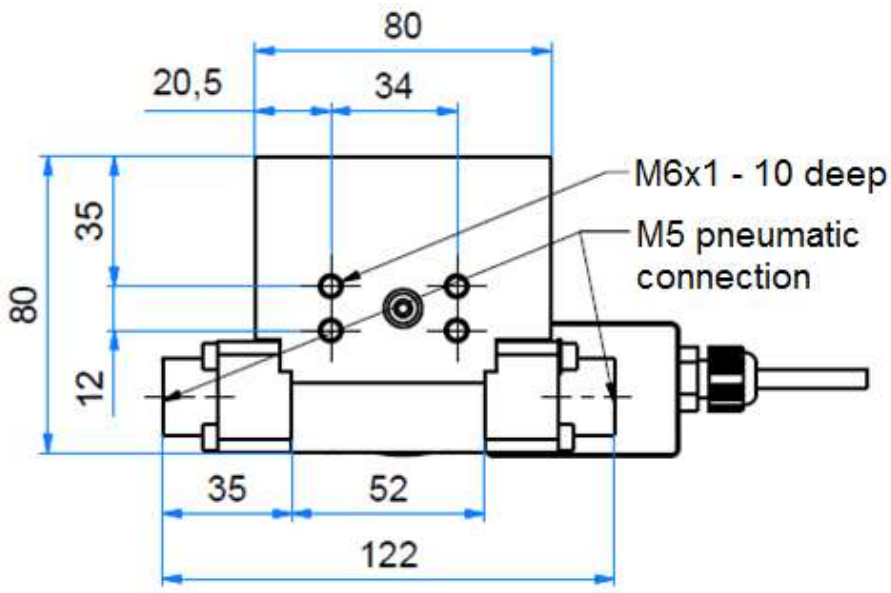
- PRVA-**R**8 MA right DW
- PRVA-**R**12 MA rigt DW

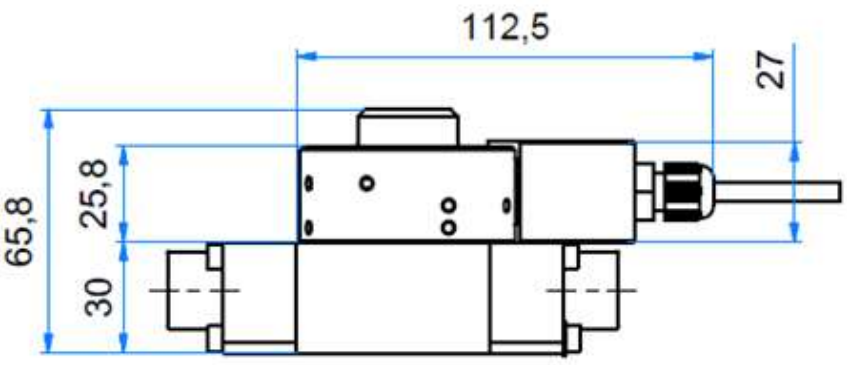
Turret stop without position query

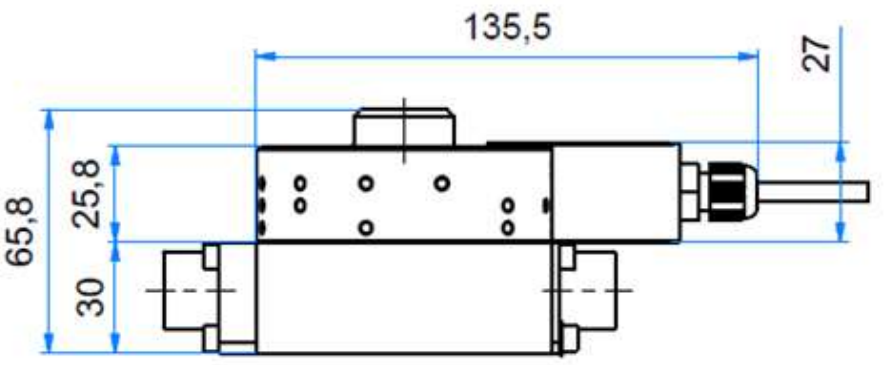
PRVA-R8MA right DW

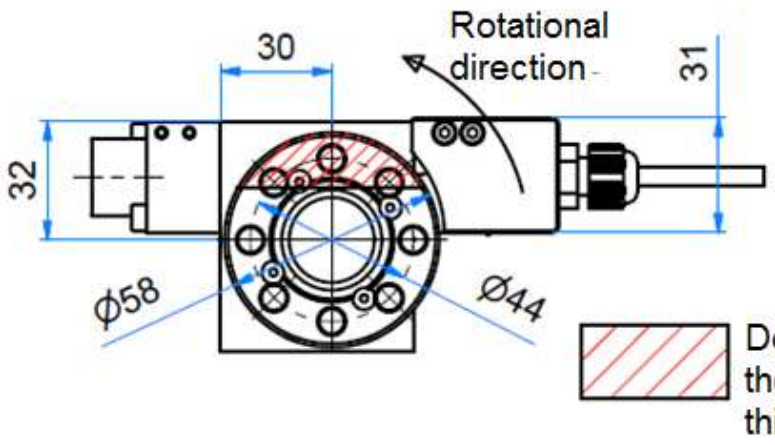


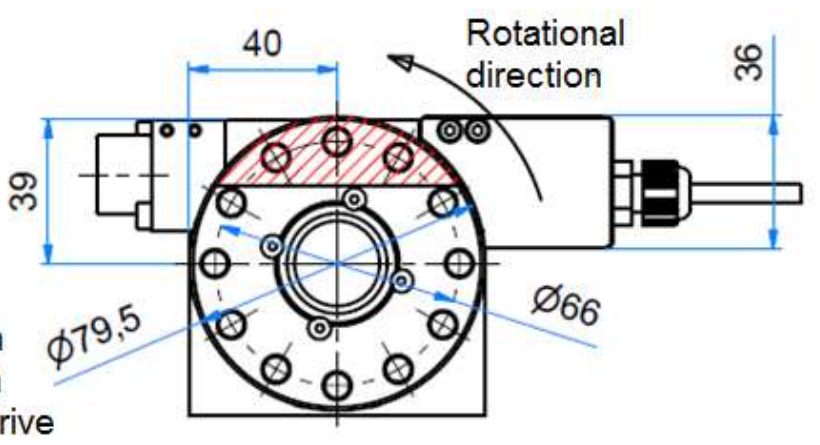
PRVA-R12MA right DW











Do not overstrain the stop screw in this area of the drive

Technical data:

	PRVA-R8MA	PRVA-R12MA
Stop points:	8 pieces	12 pieces
Mass shift:	approx. 500 g	approx. 700 g
Impact mass:	approx. 800 N at 3-4 m/min. undamped	
	approx. 4700 N at damped drives	
Weight:	approx. 1.000 g	approx. 1.720 g
Rated torque: (theoretical)	approx. 1,9 Nm	approx. 2,8 Nm
Ait consumption:	at 6 bar approx. 0,03 NL	
Cycle time:	approx. 0,12 sec.	