

1.5 ProMinent® EXTRONIC® Metering Pumps

1.5.1 EXBb G version – gas explosion proof

Property class II, property class 2G
(Zone 1, group II)

The ProMinent EXTRONIC® series approved according to the new EG-EX-directive 94/9/EG (ATEX), for metering fluids in gas explosion endangered operations

- The short stroke solenoid action is combined with the liquid ends from the ProMinent® gamma series. The SB material version is recommended for use with flammable media.
- The control inputs “external contact”, “analog” and “zero volts ON/OFF” are intrinsically safe for EXBb - registered in accordance with EN 50020 - available.
- The 2501 SSM/SBM type with diaphragm rupture signalling e.g. for use in gas odorization.

The capacity ranges from 0.19 l/h to 60 l/h at back pressures of max. 25 bar.

The ProMinent EXTRONIC® conforms to the unified EU standard EN 50014/50018 for “flameproof enclosure”. It carries the highest enclosure class for this protection type. This standard is recognised in many other countries outside the EU.

The short stroke solenoid and the pump controller are housed inside the pump housing. Conforms to DIN 40050 standards on contact and moisture resistance, and carries IP 65 protection, even when front cover is open.

Key:

- 6 - resistant to dust entry and complete resistance to contact
- 5 - resistant to spray water from all directions

The liquid end with the proven DEVELOPAN® pump diaphragm with Teflon coating and the proven liquid ends in Acrylic, Polypropylene (PP), PTFE-Teflon®, stainless steel no. 1.4404 and SB for flammable chemicals, according to requirements, bring the highest levels of operating safety to ProMinent EXTRONIC® Metering Pumps.

Self bleeding liquid ends for gaseous chemicals are available in Acrylic (NS) and PVC (PS). The micrometer stroke length adjustment knob ensures precise and high reproducibility.

There is also a comprehensive range of explosion proof accessories and pump accessories available.

EXBb G for use in gas endangered areas

PROTECTION GRADE EEX [I, A] D IIC T6

Key:

- EEx** - explosion proof equipment conforms to European Standards
- [I, a]** - control input intrinsically safe in case of occurrence of two unrelated faults
- d** - fire proofing; flameproof enclosure
- IIC** - explosion group II for all explosion endangered areas apart from mining, sub group IIC (includes IIA and IIB)
- T6** - temperature class, permitted for gas and moisture with ignition temperature > 85 °C

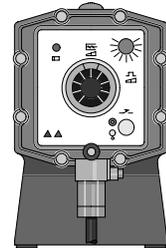
EXBb M for use in firedamp endangered mining operations - NO LONGER AVAILABLE

PROTECTION GRADE EEX D I/II C T6

Key:

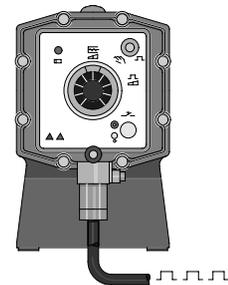
- EEx** - explosion proof equipment conforms to European Standards
- d** - fire proofing, flameproof enclosure
- IC** - explosion group I for firedamp endangered operations
- IIC** - explosion group II for all other hazardous locations, sub group IIC (includes IIA IIB)
- T6** - temperature class, permitted for gas and moisture with ignition temperature > 85 °C. This is the highest temperature class, and includes T1 to T5.

*) The electrical cables for mains connection, contact or analogue control are already connected to the pump. Observe all instructions concerning connecting and activating electrical systems.



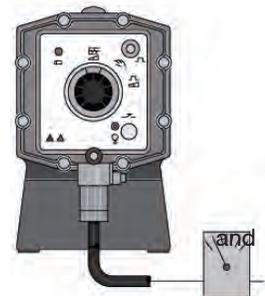
Control type “Internal”

Stroke length adjustment 1:10,
stroking rate adjustment 1:25,
total adjustment range 1:250.



Control type: “External Contact”

Stroke length adjustment 1:10,
stroking rate control 0-100
% dependant upon external
switch contacts. *)



Control type: “Analogue”

Stroke length adjustment 1:10,
Stoke frequency control 0-100
% proportional to analogue
signal 0/4-20 mA. *)



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1.5.2 Technical Data EXTRONIC®

Max. Pump Capacity at Maximum Back Pressure				Max. Pump Capacity at Medium Back Pressure			Stroking Rate	Connector Sizes Outer R X Inner R	Suction Lift	Shipping Weight** PP, NP, TT-SS
Pump Type EXTRONIC®	bar	l/h	ml/stroke	bar	l/h	ml/stroke	strokes/min.	mm	mWG	approx. kg
EXBb										
1000	10	0.19	0.032	5	0.3	0.042	120	6 x 4	1.5	12 - 16
2501	25	1.0	0.15	20	1.1	0.17	120	6 x 4	6	18
1601	16	1.1	0.15	8	1.3	0.18	120	6 x 4	6	12 - 16
1201	12	1.7	0.23	6	2.0	0.28	120	6 x 4	6	12 - 16
0803	8	3.7	0.51	4	3.9	0.54	120	6 x 4	3	12 - 16
1002	10	2.3	0.31	5	2.7	0.38	120	8 x 5	6	12 - 16
0308	3	8.6	1.20	1.5	10.3	1.43	120	8 x 5	6	12 - 16
2502	25	2.0	0.28	20	2.2	0.31	120	8 x 5	6	13 - 17
1006	10	6.0	0.83	5	7.2	1.00	120	8 x 5	6	13 - 17
0613	6	13.1	1.82	3	14.9	2.07	120	8 x 5	5.5	13 - 17
0417	3.5	17.4	2.42	2	17.9	2.49	120	12 x 9	4.5	13 - 17
2505	25	4.2	0.64	20	4.8	0.73	110	8 x 5	6	16 - 20
1310	13	10.5	1.59	6	11.9	1.80	110	8 x 5	6	16 - 20
0814	8	14.0	2.12	4	15.4	2.33	110	12 x 9	6	16 - 20
0430	3.5	27.0	4.09	2	29.5	4.47	110	DN 10	5	16 - 20
0260	1.5	60.0	9.09	-	-	-	110	DN 15	1.5	16 - 20

EXTRONIC® Metering Pumps for dosing highly viscous media

1002	10	2.3	0.31	5	2.7	0.38	120	DN 10	-	12
1006	10	6.0	0.83	5	7.2	1.00	120	DN 15	-	13
1310	10	10.5	1.59	5	11.9	1.80	110	DN 15	-	16
0814	8	14.0	2.12	4	15.4	2.33	110	DN 15	-	16

EXTRONIC® Metering Pumps with self bleeding liquid end***

1601	16	0.66	0.09	-	-	-	120	6 x 4	1.8	12
1201	12	1.0	0.14	-	-	-	120	6 x 4	2.0	12
0803	8	2.4	0.33	-	-	-	120	6 x 4	2.8	12
1002	10	1.8	0.25	-	-	-	120	6 x 4	2.0	12

** shipping weight for EXBb M version... additional 14 kg

*** The data given here represent guaranteed minimum values, achieved with medium water at room temperature.

Materials in Contact With Chemicals

	Liquid End	Suction/Discharge Connector	Seals	Valve Balls (Connector 6 - 12 mm)	Balls (DN 10 and DN 15 Connector)
PP1	Polypropylene	Polypropylene	EPDM	ceramic	Borosilicate glass
PP4*	Polypropylene	Polypropylene	EPDM	-	ceramic
NP1	Acrylic	PVC	FPM A (Viton® A)	ceramic	Borosilicate glass
NP3	Acrylic	PVC	FPM B (Viton® B)	ceramic	-
NS3**	Acrylic	PVC	FPM B (Viton® B)	ceramic	-
PS3**	PVC	PVC	FPM B (Viton® B)	ceramic	-
TT1	PTFE with carbon	PTFE with carbon	PTFE	ceramic	ceramic
SS..	stainless steel no. 1.4404	stainless steel no. 1.4404	PTFE	ceramic	stainless steel no. 1.4404

* PP4 with Hastelloy C valve springs.

** NS3 and PS3 with Hastelloy C valve springs, PVDF valve core. Viton® is a registered trademark of DuPont Dow Elastomers.



1.5 ProMinent® EXTRONIC® Metering Pumps

1.5.3 Identity Code & Pricing EXTRONIC®

EXBb ProMinent EXTRONIC®, Version b

Protection:

- G** Gas-EX-proof
- M** Fire and explosion protection (firedamp) - **NO LONGER AVAILABLE**

Pump type: (figures 1 + 2 = back pressure [bar], figures 3 + 4 = pump capacity [l/h])

1000	Capacity: 10 bar; 0.19 l/h
2501	25 bar; 1.0 l/hr (available in SSM and SBM only)
1601	16 bar; 1.1 l/h
1201	12 bar; 1.7 l/h
0803	8 bar; 3.7 l/h
1002	10 bar; 2.3 l/h
0308	3 bar; 8.6 l/h
2502	25 bar; 2.0 l/h (available in SS and SB only)
1006	10 bar; 6.0 l/h
0613	6 bar; 13.1 l/h
0417	3.5 bar; 17.4 l/h
2505	25 bar; 4.2 l/h (available in SS and SB only)
1310	13 bar; 10.5 l/h (available in NP, PP4, SS and SB only)
0814	8 bar; 14.0 l/h
0430	3.5 bar; 27.0 l/h
0260	1.5 bar; 60.0 l/h

Liquid end material:

- PP1** Polypropylene with EPDM O-ring
- PP4** HV Polypropylene for high viscosity liquids with EPDM O-ring and Hastelloy C valve springs (Types 1002, 1006, 1310 and 0814 only)
- NP1** Acrylic with FPM A (Viton® A) O-ring
- NP3** Acrylic with FPM B (Viton® B) O-ring
- NS3** Acrylic with FPM B (Viton® B) O-ring, self bleeding (Types 1601, 1201, 0803 and 1002 only)
- PS3** PVC with FPM B O-ring, self bleeding (Types 1601, 1201, 0803 and 1002 only)
- TT1** PTFE with carbon, PTFE seal
- SS1** Stainless steel, no. 1.4404, with PTFE seal
- SS2** Stainless steel with 1/4" NPT internal thread, PTFE seal
- SB1** Stainless steel with ISO 7 Rp 1/4 internal thread, ISO 7 Rp 1/2 on type 0260, PTFE seal (recommended for flammable materials)
- SSM** as SS1, with diaphragm rupture indicator *Type 2501 only*
- SBM** as SB1, with diaphragm rupture indicator *Type 2501 only*

Valve springs:

- 0** No springs
- 1** With 2 valve springs, 1.4571, 0.1 bar

Electrical connectors [5m Power Cable open-ended is included]:

- A** 230 V, 50/60 Hz
- B** 115 V, 50/60 Hz
- E** 500 V, 50/60 Hz **NO LONGER AVAILABLE**

Controller type:

- 0** Stroking rate adjustment via potentiometer
 - 1** External contact
 - 2** Analogue 0-20 mA
 - 3** Analogue 4-20 mA
 - 4*** External contact, intrinsically safe [i,a]
 - 5*** Analogue 0-20 mA, intrinsically safe [i,a]
 - 6*** Analogue 4-20 mA, intrinsically safe [i,a]
- * intrinsically safe only with G = EX-protection

Control variations:

- 0** With potentiometer (control type 0 only)
- 1** With manual auxiliary key for maximum stroking rate (control type 1-6 only) **preferred type**; spring return
- 2** With manual auxiliary key for maximum stroking rate (control type 1-6 only) latching

Approved/Language:

- 0** BVS - Europe, German, 100 V - 500 V
- 1** BVS - Europe, English, 100 V - 500 V
- 2** FM - USA, English, 115 V
- 3** CSA - Canada, English, 115 V, 230 V

Viton® is a registered trademark of DuPont Dow Elastomers FPM = Fluorine Rubber

Note: May require certificate of conformity for some Australian applications at extra cost.

EXTRONIC® pumps with liquid ends for highly viscous media PP4 have 10-20% less metering capacity and are not self-priming. G 3/4-DN connector with D16-DN10 nozzle union.

For any other Pricing: refer Sydney office



EXBb G 1000 PP1 0 A 0 0 0

1.5 ProMinent® EXTRONIC® Metering Pumps

1.5.4 Connectors for ProMinent EXTRONIC® Metering Pumps

PP, NP, PS and TT	6, 8 and 12 mm	hose sleeve with clamping ring fitting
SS1/SSM stainless steel	6, 8 and 12 mm	Swagelok screw fitting system
SS2 stainless steel	6, 8 and 12 mm	internal thread 1/4" NPT
SB1/SBM stainless steel	6, 8 and 12 mm	internal thread ISO 7 Rp 1/4

PP and NP	DN 10 and DN 15	hose sleeve d 16 - DN 10 and d 20 - DN 15
TT	DN 10 and DN 15	fusion joint d 16 - DN 10 and d 20 - DN 15 (PVDF)
SS1 stainless steel	DN 10 and DN 15	insert, internal thread R 3/8 and R 1/2
SB1 stainless steel	DN 10 and DN 15	internal thread ISO 7 Rp 1/4 and 1/2

Reproducible metering accuracy $\pm 2\%$ when correctly installed, refer to operating instructions manual.

$\pm 5\%$ for type 1601 with self bleeding liquid end.

Permissible ambient temperature $-10\text{ }^{\circ}\text{C}$ to $+45\text{ }^{\circ}\text{C}$.

Power supply: 230 V $\pm 10\%$, 50/60 Hz

115 V $\pm 10\%$, 50/60 Hz

Protection: IP 65, insulation class F

Medium power consumption at max. stroking rate (W)/peak power consumption at dosing stroke (A) at 230 V, 50/60 Hz:

EXBb	Type 1000, 1601, 1201, 0803, 1002, 0308	13 W/0.7 A	at 120 strokes/min
EXBb	Type 2502, 1006, 0613, 0417	26 W/1.7 A	at 120 strokes/min
EXBb	Type 2505, 1310, 1014, 0430, 0260	45 W/2.0 A	at 110 strokes/min

Included in delivery:

Metering Pump with 5 m mains cable, connector set for hose/pipe connections as described in tables.

1.5.5 Spare Parts Kits

PTFE pump diaphragms

ProMinent® DEVELOPAN® pump diaphragms in EPDM with woven inner layer, integrally vulcanised steel core and PTFE Teflon coating on the side in contact with the dosing chemical.



Description For Pump Type	Part No.
31.0 x 6.0	1000
35.0 x 11.5	2501
48.0 x 9.5	1601
48.0 x 12.5	1201
48.0 x 18.5	0803
60.0 x 17.0	1002, 2502
60.0 x 28.0	0308, 2505, 1006
76.0 x 37.0	1310, 0613
76.0 x 45.0	0814, 0417
127.5 x 63.0	0430, 0230
127.5 x 91.0	0260



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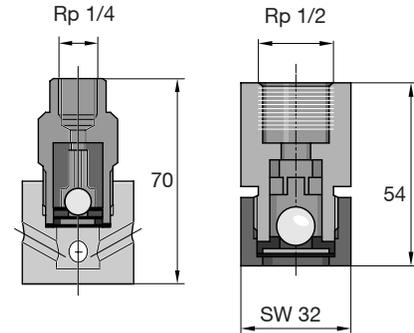
1.5.6 Accessories - Valves

Foot valve, 1.4404 stainless steel

With filter and ball check valve, for use with flammable media.

Materials: 1.4404/1.4401/PTFE/ceramic

	Part No.
Connection, 1/4" SB type for EXTRONIC	809301
Connection, 1/2" SB type for EXTRONIC	924561

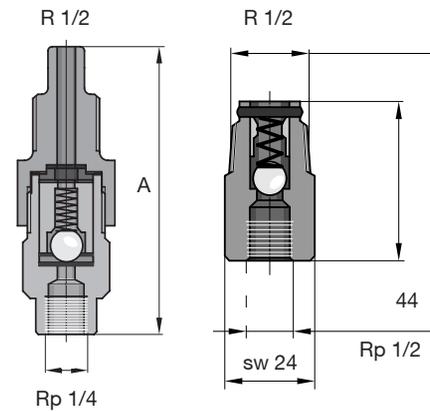


Dosing valve, "SB" 1.4404 stainless steel

Spring-loaded ball check valve, installation as desired, suitable for use with flammable media.

Materials: 1.4404/1.4401/Hastelloy C/PTFE coated/ceramic

	Part No.
Connection, 1/4" - 1/2" k, response pressure approx. 0.5 bar	809302
Connection, 1/2" - 1/2" k, response pressure approx. 0.5 bar	924560



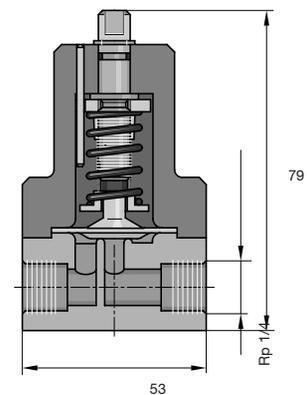
Adjustable "SB" back pressure valve 1.4404 stainless steel

Material 1.4404; diaphragm PTFE coated, 1/4" connection at both ends. Adjusting range approximately 1 to 10 bar, enclosed type suitable for use with flammable media.

For generation of a back pressure for precise metering into an open outlet, where the back pressure is fluctuating below 1 bar where there is an inlet pressure on the suction side.

Can also be used as a pressure relief valve.

	Part No.
	924555
Replacement Diaphragm	811464



Further accessories such as foot valves, discharge valves and back pressure valves in the standard materials are identical to gamma accessories or for DN 15 connection, refer to section 3.

