Flowmeter for continuous flow measurement

- Economic integration in pipe systems without any additional piping
- Magnetic measuring principle (paddle wheel with hall sensor)
- Output: transistor output (frequency pulse signal)

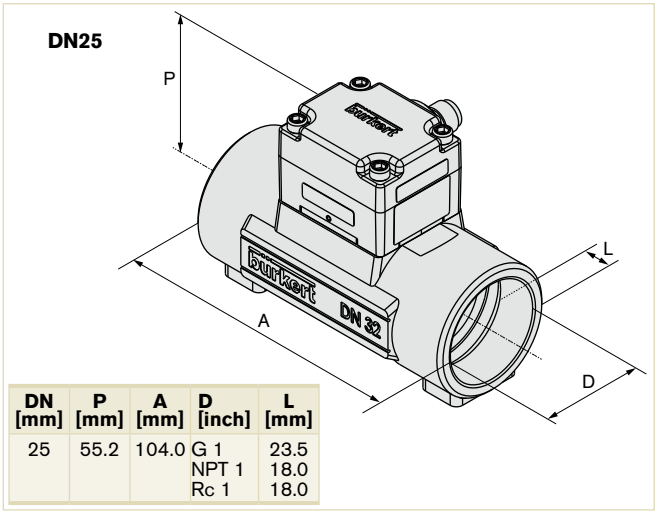
The paddle wheel flowmeter for continuous flow measurement is especially designed for use in neutral, slightly aggressive, solid free liquids. Type 8011 consists of a fitting (S012) and an electronic module (SE11) connected together with screws. The Bürkert designed fitting system ensures simple installation into all pipes from DN06 to DN65. It can also be installed in fluid block systems.
Type 8011 produces a frequency pulse signal, proportional to the flow rate, which can be processed by a Bürkert remote transmitter/controller.

Type 8011 is available in two versions:
- with one pulse output: transistor NPN
- with two pulse outputs: transistor NPN and PNP.

Technical Data

General data	
Compatibility	with fittings S012
Materials	
Housing / Seal	PPS / EPDM
Fixed connector M12, cable gland	PA
1 meter cable	PVC
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP
Paddle wheel / Holder	PVDF blue / PVDF
Axis and bearing / Seal	Ceramics (AL_2O_3) / FKM (EPDM option)
Electrical connection	Fixed connector 5-pin M12 (or with 1 m cable, on request)
Connection cable	1.5 mm² max. cross-section
Complete device data (fitting + electronic module)	
Pipe diameter	DN06 to DN50 (DN65 on request)
Measuring range	0.3 to 10 m/s
Measuring element	Magnetic hall sensor
Medium temperature with	
PVC fitting	0 °C to +60 °C
PP fitting	0 °C to +80 °C
Stainless steel, brass fitting	-15 °C to +100 °C (if T°ambient ≤ 45 °C) or -15 °C to +90 °C (if 45 °C ≤ T°ambient ≤ 60 °C)
Fluid pressure max.	PN10 (with plastic fitting) PN16 (with metal fitting)
Viscosity / Pollution	Max. 300 cSt. /max. 1% (size of particles 0.5 mm max.)
Accuracy	with standard K-factor ±(0.5% of FS.* + 2.5% of Reading)[1)]
Linearity	±0.5% of FS.* (at 10 m/s)
Repeatability	±0.4% of Reading[1)]

Envelope Dimensions [mm] (see datasheet for details)



DN [mm]	P [mm]	A [mm]	D [inch]	L [mm]
25	55.2	104.0	G 1	23.5
			NPT 1	18.0
			Rc 1	18.0

Technical Data (continued)

Electrical data	
Operating voltage (V+)	
One pulse output version	4.5 - 24 V DC, filtered and regulated
Two pulse outputs version	6 - 36 V DC, filtered and regulated
Current consumption	< 5 mA (without load)
Reversed polarity of DC	Protected
Voltage peak	Protected
Short circuit	Protected for transistor output
Output	
One pulse output version	Transistor NPN open collector, max. 20 mA, NPN output: 0.2 - 24 V DC, frequency up to 300 Hz (Frequency [Hz] = K factor [pulse/litre] x flow rate [l/s])
Two pulse outputs version	Transistor NPN and PNP open collector, max. 700 mA, NPN output: 0.2 - 36 V DC, PNP output: operating voltage, frequency up to 300 Hz (Frequency [Hz] = K factor [pulse/litre] x flow rate [l/s]

* FS. = Full scale (10 m/s)
[1)] Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

Technical Data (continued)

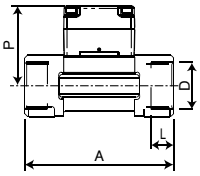
Environment	
Ambient temperature	-15°C to +60°C (operating and storage)
Relative humidity	≤ 80%, without condensation
Standards, directives and approvals	
Protection class	IP67 with multipin M12 (IP65 with cable)
Standard and directives	
EMC	EN 61000-6-3, EN 61000-6-2
Pressure	Complying with article 3 of §3 from 97/23/CE directive.*
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

Approval/Certificate on request	3.1 certificate; 2.2 certificate; Surface finish certificate; Calibration certificate; FDA (only for device with EPDM seal and stainless steel fitting) KTW (only for device with EPDM seal and stainless steel or brass fitting)

* For the 97/23/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

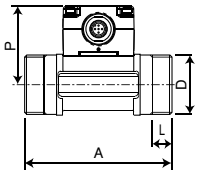
Type of fluid	Conditions
Fluid group 1, §1.3.a	DN ≤ 25 only
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Envelope Dimensions [mm] (see datasheet for details)



8011 with internal thread connection
G, NPT or Rc
in stainless steel
(316L - 1.4404) or
brass (CuZn39Pb2)

DN [mm]	P [mm]	A [mm]	D [inch]	L [mm]
15	57.5	84.0	G 1/2 NPT 1/2 Rc 1/2	16.0 17.0 15.0
20	55.0	94.0	G 3/4 NPT 3/4 Rc 3/4	17.0 18.3 16.3
25	55.2	104.0	G 1 NPT 1 Rc 1	23.5 18.0 18.0
32	58.8	119.0	G 1 1/4 NPT 1 1/4 Rc 1 1/4	23.5 21.0 21.0
40	62.6	129.0	G 1 1/2 NPT 1 1/2 Rc 1 1/2	23.5 20.0 19.0
50	68.7	148.5	G 2 NPT 2 Rc 2	27.5 24.0 24.0



8011 with external thread connection
G, NPT or Rc
in stainless steel
(316L - 1.4404),
brass (CuZn39Pb2) or PVC

DN [mm]	P [mm]	A [mm]	D [inch]	[mm]	L [mm]
06	52.5	90.0	G 1/2	-	14.0
08	52.5	90.0	** 1/2	M 16 x 1.5	14.0

** G, NPT, RC according to fitting version

Ordering Chart

For Type 8011, 4.5 - 24 V DC, 5-pin M12, NPN output											
Process connection	**Standard**	**Output**	**Item no. DN06 - 1/4"**	**Item no. DN06 - 1/2"**	**Item no. DN08 - 1/2"**	**Item no. DN15**	**Item no. DN20**	**Item no. DN25**	**Item no. DN32**	**Item no. DN40**	**Item no. DN50**
Brass - Medium temperature max. 100 °C, PN16											
Internal thread	G (ISO 228)	NPN-Pulse	–	–	–	559 918	559 919	559 920	559 921	559 922	559 923
External thread	G	NPN-Pulse	559 915	559 916	559 917	–	–	–	–	–	–
Stainless steel - Medium temperature max. 100 °C, PN16											
Internal thread	G (ISO 228)	NPN-Pulse	–	–	–	559 939	559 940	559 941	559 942	559 943	559 944
External thread	G (ISO 228)	NPN-Pulse	559 936	559 937	559 938	–	–	–	–	–	–

Accessories

Specification	Item no.
4 short screws (M4 x 35 - A4) + 4 long screws (M4 x 60 - A4)	555 775
5-pin M 12 female connector moulded on cable (2 m, shielded)	438 680
5-pin M 12 female connector with plastic threaded locking ring	917 116
O-ring set for metal fitting - FKM - DN 06 to 50	426 340