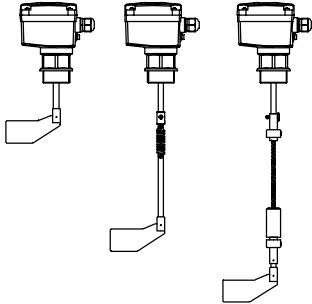


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Subject to change.

All dimensions in mm (inches).

All prices in Euro, excluding VAT.

All prices are EXW Betzigau, excluding packaging costs.

Valid: From 01.04.2014 until 31.03.2015, unless otherwise agreed.

By publishing this selection list all other lists become invalid.

We assume no liability for typing errors.

Different variations to those specified are possible. Please contact our technical consultants.

Overview / Specification / Applications

- Level limit detection in bulk goods / solids
- Compact unit
- Wide range of applications, no maintenance
- Full-, demand-, empty detector
- Flexible extensions (kits)
- ATEX / IEC-Ex / INMETRO approvals (Dust Ex)
- GOST-R and RTN Ex approvals (Dust Ex)
- 2011/65/EU RoHS conform



Approvals	CE
	ATEX / IEC-Ex / INMETRO Zone 20/21 (Dust Ignition Proof)
	GOST-R and RTN Ex Dust Ignition Proof

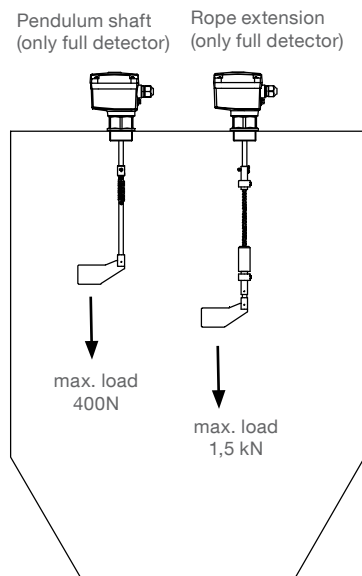
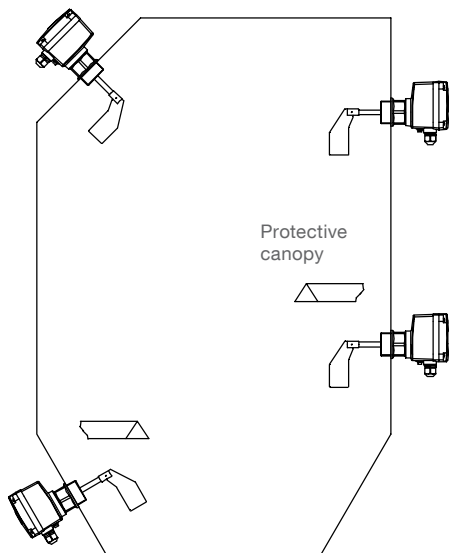
Technical data	Ambient temperature	-20 .. +60°C (-4 .. +140°F) -40 .. +60°C (-40 .. +140°F) with *heating *for certificate CE
	Process temperature	-20 .. +80°C (-4 .. +176°F) -40 .. +80°C (-40 .. +176°F) with *heating *for certificate CE
	Process pressure	-0.5 .. +0,8 bar (-6.8 .. 11.6psi)
	Type of protection	IP66
	Material housing	Plastics PA6
	Material process connection	Aluminum or plastics PA6
	Material of measuring vane / shaft / extensions	1.4301 (SS304) / 1.4305 (SS303)

Electronics		Signal output				
		SPDT ⁽¹⁾	PNP	FSH/ FSL ⁽²⁾	Adjust. delay	Fail safe alarm
Supply						
AC version	24V or 48V or 115V or 230V AC	•	-	option	-	-
DC version	24VDC	•	-	-	-	-
DC version	24VDC PNP	-	•	•	•	-
Universal voltage	24VDC /22..230V AC	•	-	•	•	option

⁽¹⁾ Micro switch, Relais for universal voltage

⁽²⁾ Switchable signal output (Fail safe high /low)

Applications



Selection

Basic type RN 4001

- pos. 2 **Certificate**
 0 CE ⁽¹⁾
 W ATEX II 1/2 D ⁽²⁾
 A IEC-Ex t IIIC T1 Da/Db IP6X ⁽⁵⁾
- pos. 3 **Power supply**
 A / S 230V AC 50-60 Hz Motor Speed: A=1/min S= 5/min
 B / T 115V AC 50-60 Hz Motor Speed: B=1/min T= 5/min
 C / U 48V AC 50-60 Hz Motor Speed: C=1/min U= 5/min
 D / V 24V AC 50-60 Hz Motor Speed: D=1/min V= 5/min
 E / W 24V DC Motor Speed: E=1/min W= 5/min
 G / H 24V DC PNP Motor Speed: G=1/min H= 5/min
 F / X 24V DC / 22...230V AC universal voltage Motor Speed: F=1/min X= 5/min
- pos. 4 **Process connection**
 A thread G 1½ inches, DIN 228
 B thread G 1¼ inches, DIN 228
 C thread G 1 inch, DIN 228
 D thread M32x1.5
 E thread M30x1.5
- pos. 5 **Material process connection**
 1 Plastics PA6
 2 Aluminium
- pos. 6 **Measuring vane**
 A boot-shaped ⁽³⁾ 40 x 98 mm 1.4301/304 ... L=130 ⁽⁴⁾ for 1½" socket
 D boot-shaped ⁽³⁾ 35 x 106 mm 1.4301/304 .. L=140 ⁽⁴⁾ for 1¼" socket
 R boot-shaped ⁽³⁾ 28 x 98 mm 1.4301/304 ... L=130 ⁽⁴⁾ for 1" and M32x1.5 socket
 J boot shaped ⁽³⁾ 26 x 77 mm 1.4301/304 ... L=130 ⁽⁴⁾ for M30 socket
 K hinged vane 98 x 200 mm 1.4301/304 ... L=190 ⁽⁴⁾ double sided
 S hinged vane 98 x 100 mm 1.4301/304 ... L=190 ⁽⁴⁾ single sided
 U universal vane 27 x 150 mm plastics L=140 ⁽⁴⁾
 Y without including fixing splint
- pos. 7 **Length of extension "L"**
 For material process connection plastics:
 S standard (see lenght L under vane)
 For material process connection aluminium:
 A 100mm (110mm with vane D, U; not with vane K, S)
 B 150mm (160mm with vane D, K, S, U)
 C 200mm (210mm with vane D, K, S, U)
 D 250mm (260mm with vane D, K, S, U)
 E 300mm (310mm with vane D, K, S, U)
 Z other lengths price per 50mm or part thereof (starting from 0mm)
 min. 350mm, max. 1000mm

RN 4001	A								← Order code
Position	1	2	3	4	5	6	7		

All positions are available in special design (use code "Z")

⁽¹⁾ GOST-R included
⁽²⁾ RTN-Ex and GOST-R included
⁽³⁾ maximum length of socket 40mm
⁽⁴⁾ specification of lenght valid with process connection material plastics
⁽⁵⁾ INMETRO included

Options

pos. 11	x	Guarantee extension to 5 years
pos. 15		Flat gasket
	a	for process connection thread G 1 1/2" aluminium (pos.4.A, pos.5.2), incl. sealing face
	b	for all other process connections
pos. 21	x	Weather protection cover
pos. 23	a	Vane extension
		plastics, for universal vane pos. 6 U
pos. 24		Hexagon nut
	a	aluminium 1 piece
	b	aluminium 2 pieces
	e	stainless steel (1.4305/303) 1 piece
	f	stainless steel (1.4305/303) 2 pieces
pos. 25	a	Switchable signal output FSH/FSL¹
pos. 25	x	Fail safe alarm²
pos. 26	x	Heating of housing³ 2,5 watt for ambient-/process temperature to -40°C (-40°F)
pos. 27		Control bulk⁴
	a	bulk in cable gland 2W green
	c	bulk in cable gland 2W red
	d	LED (transparent lid section)
pos. 28	x	Second screwed cable gland M20x1,5 (not mounted)
pos. 39		Kit "rope extension" (only available as full detector)
	x	L = 2m
pos. 40		Kit "pendulum shaft" (only available as full detector and vertical installation)
	a	L=500mm (drilled holes also for 300 and 400mm)
	b	L=1000mm (drilled holes also for 600, 700, 800 and 900mm)

1 Available for connection voltage 230V/115V/48V/24VAC (pos. 3 A, B, C, D, S, T, U, V). Not with fail safe alarm (pos. 25x).

Note: Universal voltage and PNP implements FSH/FSL by default.

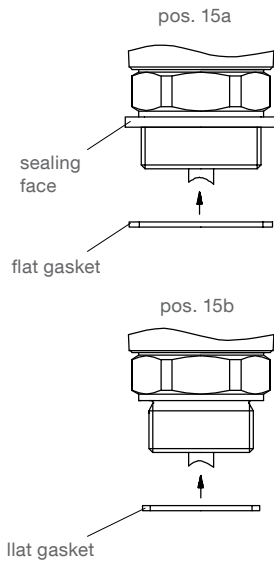
2 Available with universal voltage (pos. 3 F, X)

3 Available with CE (pos.2 0) and universal voltage (pos.3 F,X) and PNP (pos. 5 G,H). Consider reduced switching sensitivity (see technical data). Note: For temperatures down to -20°C (-4°F) the electronic "universal voltage" and "PNP" have a "heating of housing" implemented by default (in this case option pos. 26x is not needed).

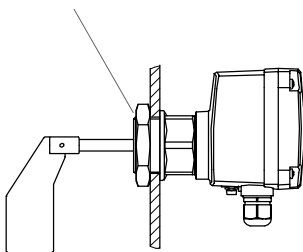
4 Available for CE (pos. 2,0)

Options

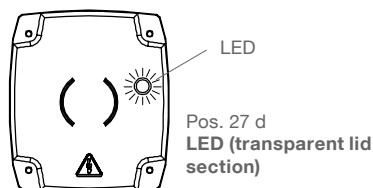
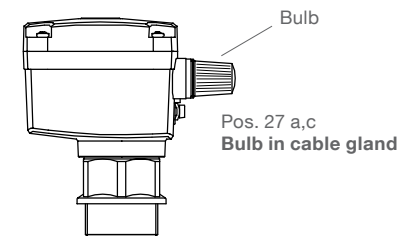
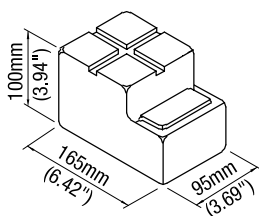
pos. 15
Flat gasket



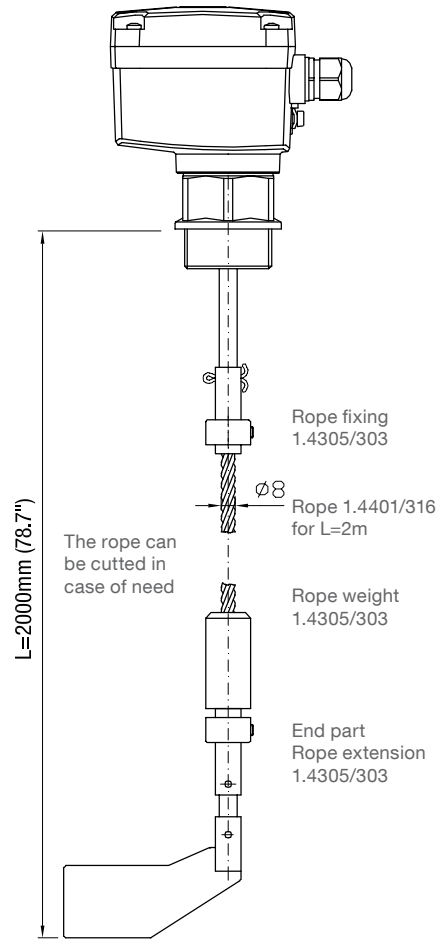
pos. 24
Hexagon nut



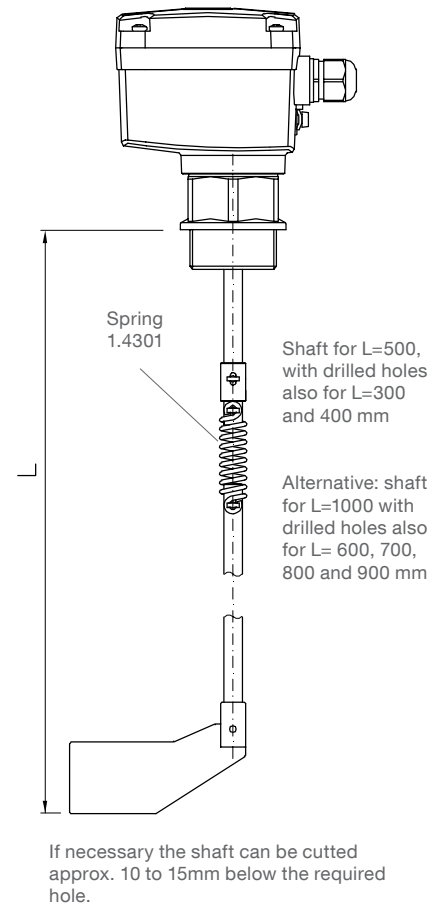
pos. 21
Weather protection cover



pos. 39
Kit „rope extension“

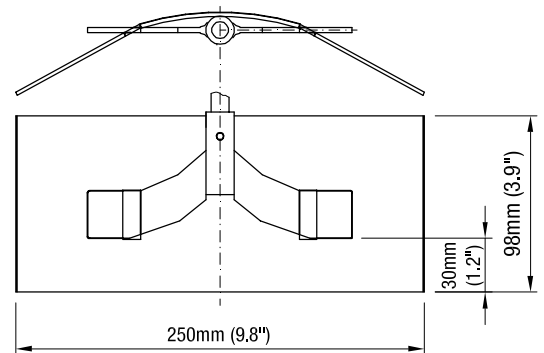


pos. 40
Kit „pendulum shaft“

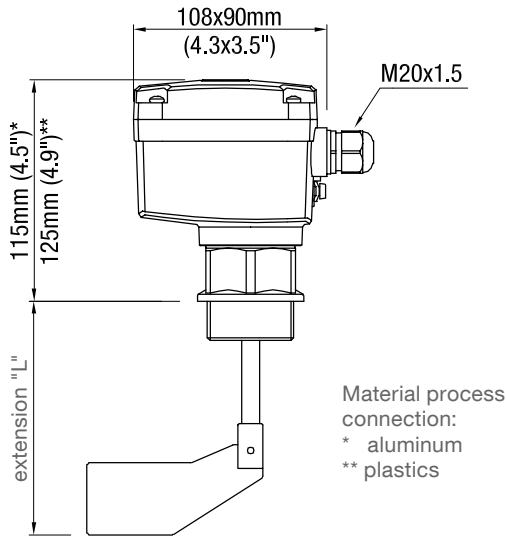


Pos. 27
Control lamp

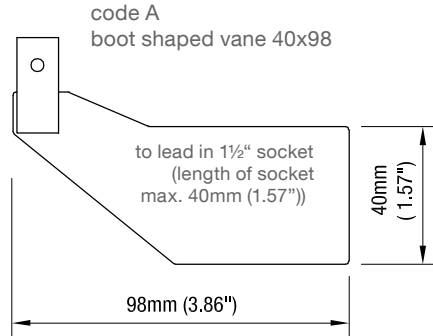
Pos. 23a
Vane extension (plastics)



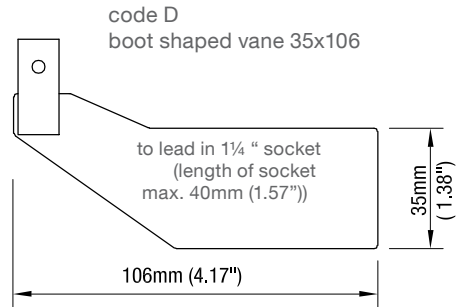
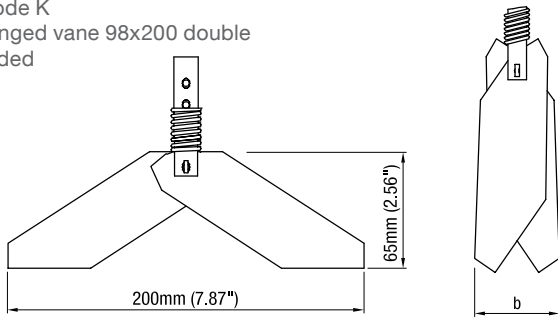
Dimension



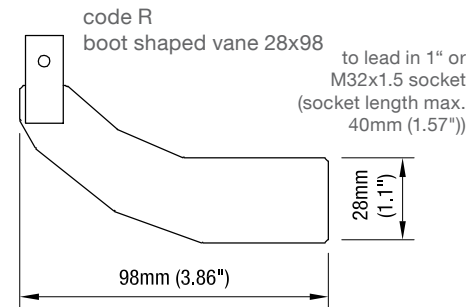
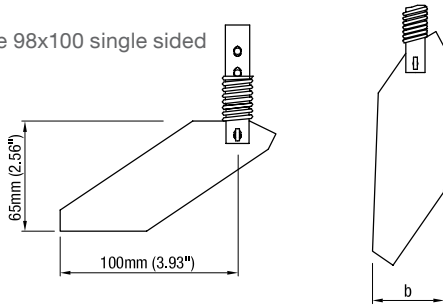
Measuring vanes



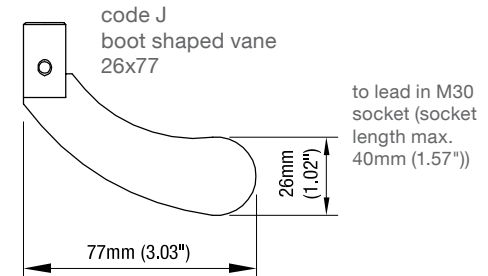
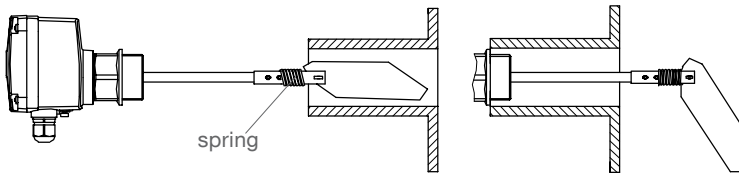
code K
 hinged vane 98x200 double sided



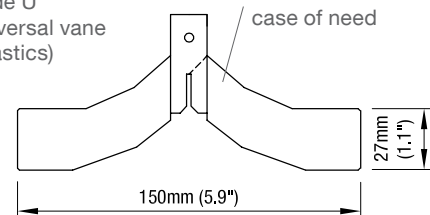
code S
 hinged vane 98x100 single sided



Insertion of the hinged vane through a long socket



code U
 universal vane (plastics)
 cuttable in case of need



Electrical installation

Version:

- AC
- DC
- **Universal voltage**

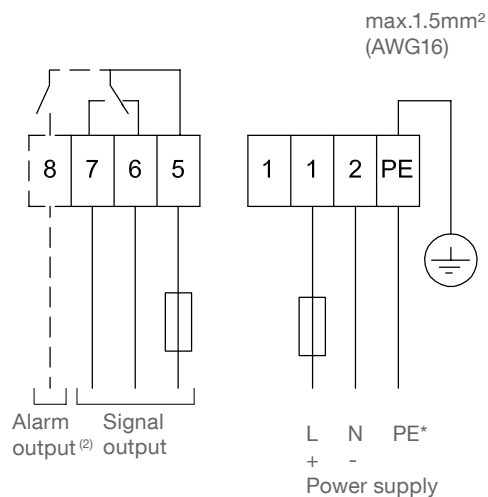
Power supply:

- **AC version:**
 24V or 48V or 115V or 230V 50/60Hz max. 4VA
 All voltages $\pm 10\%$ ⁽¹⁾
 Supply voltage as selected.
 External fuse: max 10A, fast or slow, HBC, 250V
- **DC version:**
 24V DC $\pm 15\%$ ⁽¹⁾ max. 2.5W
 External fuse: not required
- **Universal voltage:**
 24V DC $\pm 15\%$ ⁽¹⁾ max.4W
 22 .. 230V 50/60Hz $\pm 10\%$ ⁽¹⁾ max.10VA
 External fuse: not required

⁽¹⁾ including $\pm 10\%$ of EN 61010

Signal and alarm output:

Micro switch or relay, SPDT contact
 max. 250V AC, 2A, 500VA ($\cos\phi = 1$)
 max. 300V DC, 2A, 60W
 External fuse: max 10A, fast or slow, HBC, 250V



Alarm output ⁽²⁾ Signal output

⁽²⁾ With option Fail safe alarm (rotation control)
 Contact open when de-energised

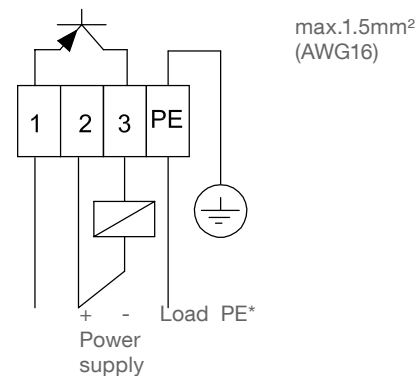
Version: - PNP

Power supply:

24V DC $\pm 15\%$ ⁽¹⁾
⁽¹⁾ including $\pm 10\%$ of EN 61010
 Input current: max. 0.6A

Signal output:

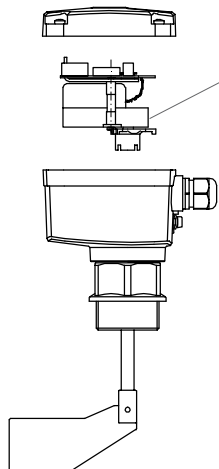
Load max.0.4A
 Output voltage equal to input voltage, drop <2,5V
 Open collector
 Protected against short circuit and overload



* Protection against static charge:

- The PE terminal of the unit must be grounded to avoid static charging of the unit.
- This is particularly important for applications with pneumatic conveying.

Spare parts

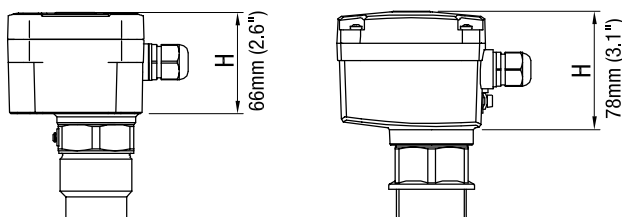


Motor / PCB

Order code				Voltage	Motor Speed	Spare part Article number
Pos. 3 Power supply	Pos. 25a FSH/FSL	Pos. 25x Fail safe alarm	Pos. 26x Heating of housing			
A	-	-	-	230V AC	1/min	gm402000
A	x	-	-		1/min	gm402003
S	-	-	-		5/min	gm403000
S	x	-	-		5/min	gm403003
B	-	-	-	115V AC	1/min	gm402005
B	x	-	-		1/min	gm402008
T	-	-	-		5/min	gm403005
T	x	-	-		5/min	gm403008
C	-	-	-	48V AC	1/min	gm402015
C	x	-	-		1/min	gm402018
U	-	-	-		5/min	gm403015
U	x	-	-		5/min	gm403018
D	-	-	-	24V AC	1/min	gm402010
D	x	-	-		1/min	gm402013
V	-	-	-		5/min	gm403010
V	x	-	-		5/min	gm403013
E	-	-	-	24V DC	1/min	gm402020
W	-	-	-		5/min	gm403020
G	-	-	-	24V DC PNP	1/min	gm402026*
H	-	-	-		5/min	gm403026*
F	-	-	-	24V DC / 22 ... 230V AC Universal voltage	1/min	gm402038*
F	-	x	-		1/min	gm404038* **
F	-	-	x		1/min	gm402039*
F	-	x	x		1/min	gm404039* **
X	-	-	-		5/min	gm403038*
X	-	x	-		5/min	gm405038* **
X	-	-	x		5/min	gm403039*
X	-	x	x		5/min	gm405039* **
M	-	-	-	230V AC/115V AC/24V DC Mutivoltage	1/min	gm402025
Y	-	-	-		5/min	gm403025

* For lower housing (H=66mm): This module requires a higher housing lid than the other modules. Therefore it can not be mounted into a housing, where a different module was present before.

For higher housing (H=78mm): No restriction



** This module requires a sensor to detect the motor rotation, which is mounted inside the housing. Therefore it can not be mounted into a housing, where a different module was present before.

Spare parts

	Fitting to unit / model code	Description see page	Spare part Article number
Measuring vane (delivery incl. cotter pin)			
Boot shaped 40 x 98mm	Pos.6 A	P6	fg400605
Boot shaped 35 x 106mm	Pos.6 D	P6	fg400508
Boot shaped 28 x 98mm	Pos.6 R	P6	fg400603
Hinged vane 98 x 200mm double sided (37mm for G 1 1/2" and G 1 1/4")	Pos.6 K	P6	fg400081
Hinged vane 98 x 200mm double sided (28mm for G 1" and M32)	Pos.6 K	P6	fg400085
Hinged vane 98 x 100mm single sided (37mm for G 1 1/2" and G 1 1/4")	Pos.6 S	P6	fg400084
Hinged vane 98 x 100mm single sided (28mm for G 1" and M32)	Pos.6 S	P6	fg400086
Boot shaped 26 x 77mm	Pos.6 J	P6	fg400607
Universal vane 27 x 150mm	Pos.6 U	P6	fg402010
Vane extension for universal vane 98 x 250mm	Pos.23	P5	fg200070

Extension parts

Extension shaft ø10mm: (delivery incl. fixing parts)	by 50mm	RN 4001	-	we400005
	by 100mm	RN 4001	-	we401023
	by 150mm	RN 4001	-	we401025
	by 200mm	RN 4001	-	we401026
Kit Pendular shaft L=500mm (delivery incl. fixing parts)		Pos.40	P5	zu400130
Kit Pendular shaft L=1000mm (delivery incl. fixing parts)		Pos.40	P5	zu400140
Kit rope extension L=2000mm (implements 2m single rope (zu400729) and rope fixing parts (zu400110))		Pos. 39	P22	zu400100
Single rope ø8mm, tail welded, price per meter		Pos. 39	P5	zu400729
Rope fixing parts, usable for kit rope extension		Pos. 39	P5	zu400110

Hexagon nut

1 1/2" aluminium	Pos.4 A	P5	zu300170
1 1/2" stainless steel 1.4305	Pos.4 A	P5	zu300180
1 1/4" aluminium	Pos.4 B	P5	zu300171
1 1/4" stainless steel 1.4305	Pos.4 B	P5	zu300181
1" aluminium	Pos.4 C	P5	zu200150
1" stainless steel 1.4305	Pos.4 C	P5	zu200160
M32 aluminium	Pos.4 D	P5	zu200120
M32 stainless steel 1.4305	Pos.4 D	P5	zu200130
M30 aluminium	Pos.4 E	P5	zu200170
M30 stainless steel 1.4305	Pos.4 E	P5	zu200180

Weather protection cover

for lower housing, dimension H = 66mm	Pos.21 x	P5	zu300230
for higher housing, dimension H = 78mm	Pos.21 x	P5	zu300232

