MARKET INFORMATION
OIL & GAS



Trimod Besta

Solutions for the Oil and Gas Industry

Oil & Gas market



Source: Luginetsky Gas Compressor Station Strezhevoy, Western Siberia, Russia

Typical applications

- Oil and gas separators
- Gas drying (flare knock-out drums)
- Separation layer detection
- Liquified gases
- Overfill protection
- Hydraulic oil tanks
- Waste water tanks
- Ballast tanks
- Storage/holding tanks
- Inert gas production

Besta has over 40 years experience successfully supplying the most reliable and safe level switches to the Oil & Gas industry. Trimod Besta float level switches carry ATEX and IECEx approvals to serve in the most difficult applications on- and offshore.

SIL
IEC 61508/61511
SIL 3 Capable

Trimod Besta level switches have been examined and approved by the most important and internationally recognized organisations. Numerous approvals together with periodic audits grant continuous quality control throughout the production process.

Trimod Besta, whenever reliability is crucial

Type XA8 132RF 04

A typical industrial switch for use in hazardous areas

Type of protection	Ex de IIC T6 | EPS 09 ATEX 1238 X
Nominal pressure	ANSI cl. 300
Operating temperature	-40 to 330°C
Ambient temperature	-40 to 80°C
Density of liquid	min. 0.7 kg/dm³
Operating differential	12 mm, fixed
Wetside material	stainless steel (CrNiMo/316 equiv.)
Flange material	stainless steel (CrNiMo/316 equiv.)
Housing material	seawater resistant die cast aluminium and stainless steel (tube)
Flange	DN 3", PN cl. 300, ANSI B16.5
Flange facing	raised face
Switch element	microswitch SPDT with silver contacts
Switch rating	250 VAC, 5 A 250 VDC, 0.25 A
Enclosure	IP67
Safety Integrity Level (SIL)	SIL 1 (Typ XAA8 132R 04: SIL 2)



Options

- Nominal pressure up to ANSI cl. 2500
- Material wet side in Hastelloy C
- Material wet side acc. to NACE (max. 22 HRC)
- Enclosure IP68
- Microswitch with gold plated contacts
- Switch element: proximity switch
- Flange facing: male, tongue, groove and ring joint

Type ZK8 22C 041

A typical industrial switch for use in hazardous areas



Type of protection	EEx ed IIC T6…T5 | PTB 03 ATEX 1006
Nominal pressure	PN 40 acc. to DIN
Operating temperature	-10 to 145°C
Ambient temperature	acc. to EN 50014
Density of the liquid	min. 0.7 kg/dm³
Operating differential	12 mm, fixed
Wetside material	stainless steel (CrNiMo/316 equiv.)
Flange material	
Seal part	stainless steel (CrNiMo/316 equiv.)
Slip-on flange	carbon steel (H II), zinc galvanised, passivated
Housing material	seawater resistant die cast aluminium
Flange	DN 65, PN 40 acc. to DIN 2501
Flange facing	raised face type C, DIN 2526
Switching element	hermetically sealed microswitch SPDT
Switch rating	250 VAC, 5 A 250 VDC, 0.25 A
Enclosure	IP67
Safety Integrity Level (SIL)	SIL 1 (Typ ZKK8 22C 041: SIL 2)

Options

- Nominal pressure up to PN 315 (DIN)
- All stainless steel version
- Material wet side in Hastelloy C
- Material wet side acc. to NACE (max. 22 HRC)
- Flange facing: male, groove, groove for metal joint
- Hermetically sealed dual SPDT microswitch
- High temperature version: max. +380°C
- Low temperature version: max. -196°C

Type FP 134RF 02

Level switch for pneumatic control application
Approved savety device for overfill protection
With declaration of conformity for use in hazardous areas



Function	ON/OFF (3/2 way valve)
Nominal pressure	ANSI cl. 600
Operating temperature	1 to 250°C
Ambient temperature	1 to 80°C
Density of liquid	min. 0.7 kg/dm³
Operating differential	12 mm, fixed
Wetside material	stainless steel (CrNiMo/316 equiv.)
Flange material	stainless steel (CrNiMo/316 equiv.)
Housing material	seawater resistant die cast aluminium
Flange	DN 3", PN cl. 600, ANSI B16.5
Flange facing	raised face
Max. control pressure	10 bar

Options

- Pneumatic controller with 0.2 to 1 bar output signal (option: 7 to 15 PSI)
- Nominal pressure up to ANSI cl. 2500
- All stainless steel version (Operating temp. max. 400°C)
- Material wet side in Hastelloy C
- Material wet side acc. to NACE (max. 22 HRC)
- Flange facing: male, groove, groove for metal joint
- With drain valve for condensate removal

The unique 3-modular Trimod Besta concept offers unlimited variety of switches for horizontal and vertical installations in hazardous and non hazardous areas.



Typical Standard Range switch



For adjustable operating differential



For corrosive or high purity media



High temperature and severe environmental conditions

Accessories - Float chambers for high pressure applications

Besta offers a wide range of customized float chambers in various materials and designs:

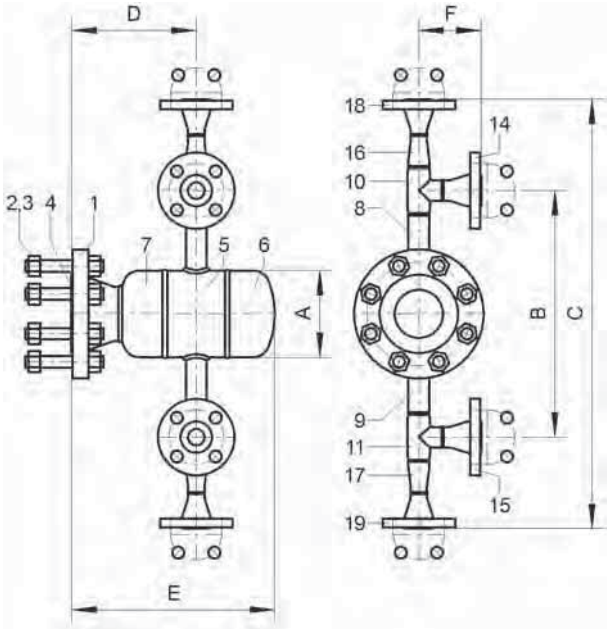
- Pressure range: up to ANSI cl. 2500 and DIN PN 315
- Temperature range: -200 to 400°C
- Material: carbon steel, low and high temperature carbon steel, stainless steel 304 and 316 equiv.
- Max. hardness of HRC 22 acc. to NACE
- Manufacturing approvals
- Welding certificates
- PED conformity



Documentation and services

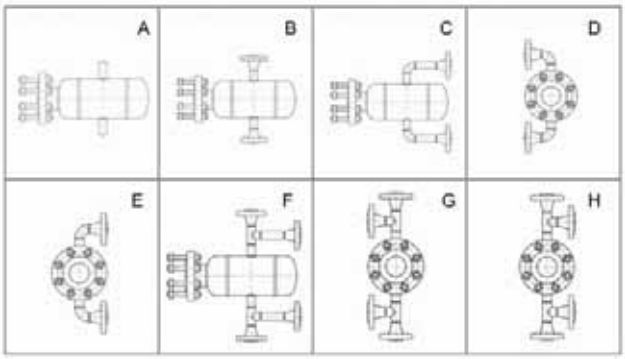
- Test reports acc. to EN 10204-2.2
- Inspection certificates acc. to EN 10204-3.1
- Pressure test protocols
- Detailed documentation: parts information with technical specifications and material data, including lot and charge information
- Non-destructive testing: ultrasonic, x-ray and dye penetration testing
- Mechanical testing: tension, notch and hardness tests
- Base- and protective coatings

Overall drawing Type: I120-1R1RH-Z584



A	ø 141.3 mm	Standard	ANSI
B	400 mm	Nominal pressure PN	cl. 300
C	697 mm	Max. operating pressure	51 bar at 38°C
D	202 mm	Max. operating temperature	400°C at 34,5 bar
E	329 mm	Test pressure	75 bar at 20°C
F	101 mm	Surface protection	Etokat activeprimer
Chamber material: A 105, A 106 Gr. B, A 234 Gr. WPB			
Bolts & nuts: A 193 Gr. B7, A 194 Gr. 2H			
Gasket: AFM 34-ME			

Basic configurations for float chambers ANSI cl. 150 to 600 / DIN PN 40 and 63



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Your Trimod Besta level switch distributor