



Level and temperature switch **iTNA57**

monitors level and temperature
of fluids in pressure containers
up to 310 bar

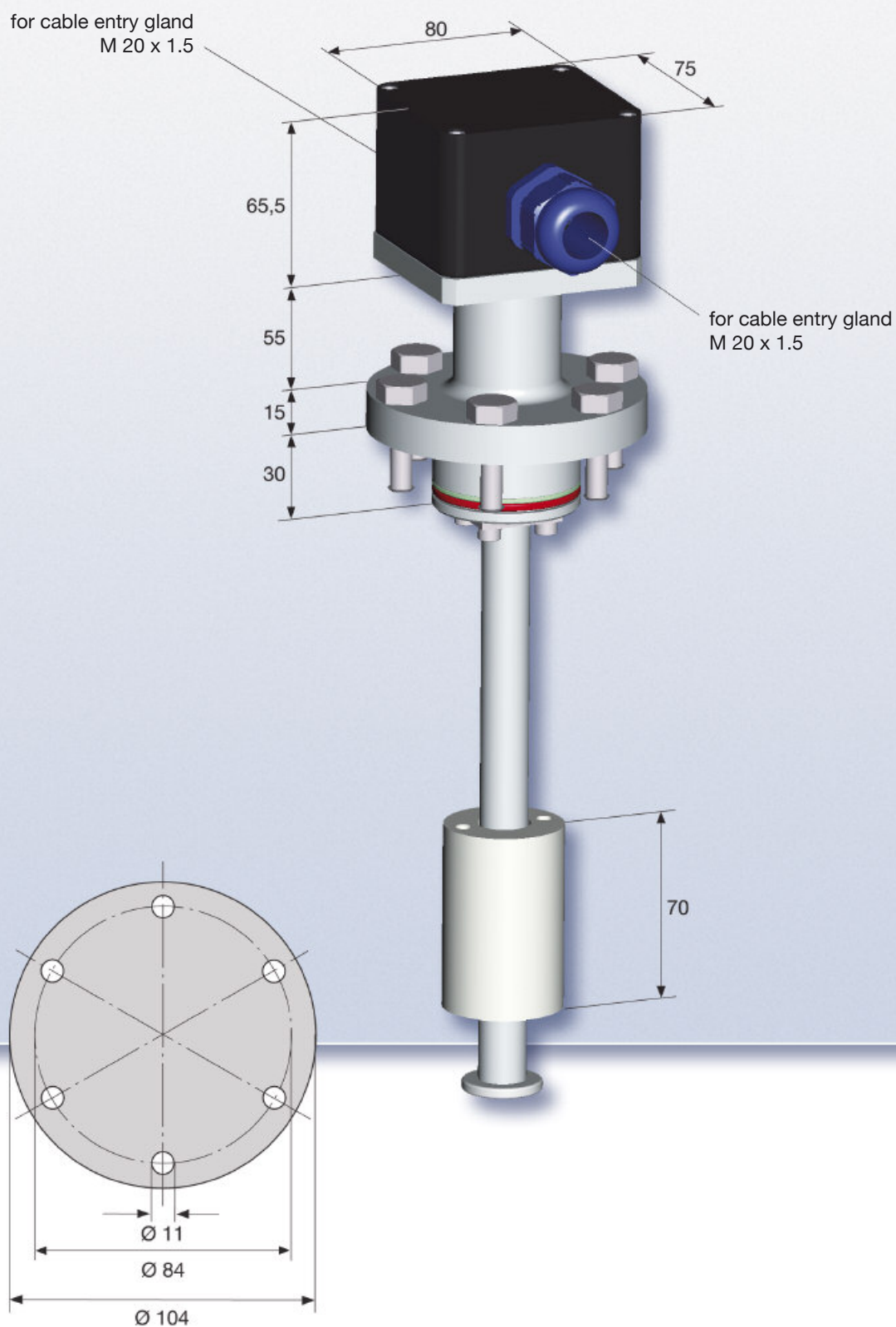
- Operative up to an overpressure of 310 bar
- Length of immersion pipe: 120 mm to 3.000 mm
- Largely unaffected by external influences
- Resistant to aggressive fluids
- Maintenance free as contacts are operated by magnets
- Type of protection: IP 54 according to EN 60529/IEC 529
- Ex-approval: I M2 EEx ia I intrinsically safe acc. to Directive 94/9/EC (ATEX)



**Application in the
offshore industry**



iTNA57





iTNA57

FUNCTION AND DESIGN

The temperature and level switch iTNA57 has been especially designed for use in pressure containers holding fluids up to a pressure of 310 bar. This problem-solving approach has been made possible by the special design of the float with switching magnet. In combination with one or a number of thermal contact cartridges the level and temperature switch includes the following two functions:

- measuring the level of a fluid in a container
- monitoring the fluid temperature

The level is measured on the basis of the magnet switch principle. One or a number of reed contacts are arranged on a mounting rail. A permanent magnet passes and causes the contact to open or close. The level and temperature switch is normally equipped with two latching-type contacts, with the upper contact designed as normally open contact for the alert function and the lower contact as normally closed contact for the stop function.

The latching-type contact has storage characteristics. To this end, the reed contact is magnetically „pretensioned“ in the two switching positions by two holding magnets. By means of the stronger switching magnet the switch can be set or reset.

It is also possible to use pulse switches for level monitoring. The contacts can further be connected with diode or resistor combinations for line monitoring.

For temperature monitoring one or a number of thermal contact cartridges can be attached to the mounting rail at the lower end of the immersion pipe. These are normally open or normally closed contacts. It is also possible to use a PT100 element for continuous temperature measurements.

The mounting rail with the level contacts and the thermal contact cartridges is housed in an immersion pipe which is enclosed by a float in the form of an annular magnet.

Application

- The level and temperature switch of type 57 is available for immersion pipe lengths of up to 3.000 mm without smoothing pipe as standard. The switch is installed by means of a round flange plate attached underneath the connection box.
- The level and temperature switch can be used in all applications where the fluid level in high-pressure containers has to be monitored.
- For monitoring the fluid level latching-type switches are normally used with the normally open contact performing the alert function and the normally closed contact the stop function.
- The same procedure can also be applied in temperature monitoring. Here, the thermal contacts can also be designed as normally open or normally closed contacts.



iTNA57

TECHNICAL DATA

Operating pressure	up to 310 bar
Length of immersion pipe	L = 120 mm to 3.000 mm
Level contacts	latching type - normally open, normally closed, change-over contact, other contacts upon request
Contact connection	diode or resistor combinations for line monitoring upon request
Continuous measurement	with reed contacts, 2 mm or 4 mm contact spacing
Reproducibility	± 0.2 mm
Operating life	> 10 ⁹ switching operations
Temperature range	-20 °C to 85 °C
Temperature contact	normally closed or normally open
Switching temperature	vertical
Type of connection	terminal housing, other types of connection upon request
Type of protection	IP 54 according to EN 60529/IEC 529
Ex-approval	I M2 EEx ia I acc. to Directive 94/9/EC
Certificate number	BVS 03 ATEX E 312

TYPE CODE AND ORDERING INFORMATION

*TNA57BK** / *** - *** L	Length of immersion pipe ➤ with thermal contact: max. measuring length+100 mm ➤ without thermal contact: max. measuring length+60 mm
	Response temperature [°C]
	Contact type code: 10 ➤ normally open 20 ➤ normally closed
	Response temperature [°C]
	Contact type code: 10 ➤ normally open 20 ➤ normally closed
	Number of reed contacts
	Contact type code: 4 ➤ latching type contact NO/NC 80 mm 5 ➤ latching type change-over contact 80 mm other contacts upon request
	Type of connection: terminal
	Without smoothing pipe
	Series
	Design acc. to ATEX
	Levelswitch
	i ➤ intrinsically safe w ➤ non-explosionproofed version

TYPICAL EXAMPLE

iTNA57BK52 L=1480mm

- Intrinsically safe levelswitch without smoothing pipe acc. to ATEX
- Connection via terminal

- Latching type change-over contact 80 mm
- 2 Level contacts
- Length of immersion pipe 1480 mm

Technische Änderungen vorbehalten · Version 03/13