

Capacitance overflow alarm systems according to WHG for corrosive media



01

Application

The CNS 20 capacitance probes for electrically conducting and non-conducting media can be used in conjunction with the CapFox® ENT 20 Ex isolating amplifier as an overflow alarm system according to WHG.

Technical Approval of the German Institute for Building Technology: Z-65.13-156.

The PTFE partly insulated probe renders the unit particularly suitable for use with corrosive liquids.

The system can also be used in hazardous areas zone 0 in conjunction with the CNS 20 Ex high-temperature probe.

Description CapFox® ENT 20 Ex

The CapFox® ENT 20 Ex isolating amplifier consists of a switching amplifier and a voltage-free output relay. The control circuit is intrinsically safe (Ex ia II C). CNS 20 and CNS 20 Ex probes can be connected.

A green LED indicates mains „on“, a yellow LED indicates that the relay has responded. In the case of a cable break, the red LED lights up. In the case of all error messages, the output relay is de-energised.

The isolating amplifier must be installed outside of the hazardous area.

Description CNS 20/CNS 20 Ex

The level electrode and the pre-amplifier of the CNS 20 and CNS 20 Ex probes are integrated in a sturdy weatherproof housing and designed as sensors according to NAMUR EN 60947. The electrode and pre-amplifier are fully encapsulated in the housing.

The electrode is PTFE partly insulated. In conjunction with a conducting tank wall or an earthed counter-electrode, it forms a capacitor with a value depending on the dielectric characteristics of the immediate vicinity.

As soon as the gas around the electrode is replaced by a higher dielectric material, an increase in capacitance occurs and this is detected by the CapFox® ENT 20 Ex unit and used to switch the built-in relay.

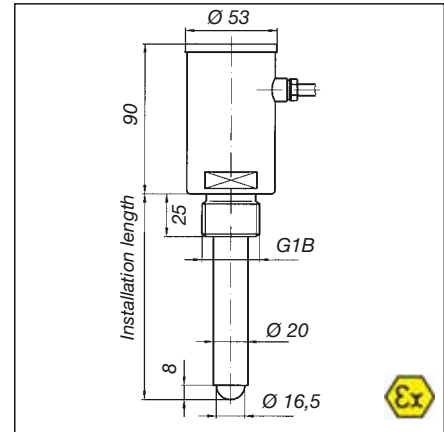
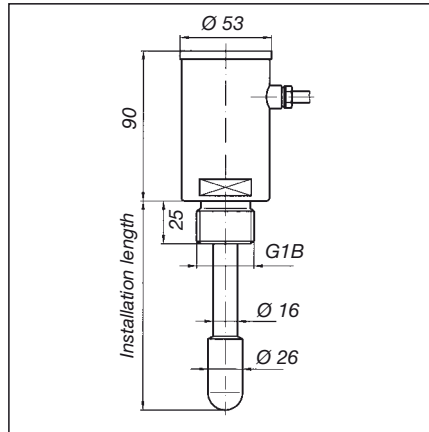
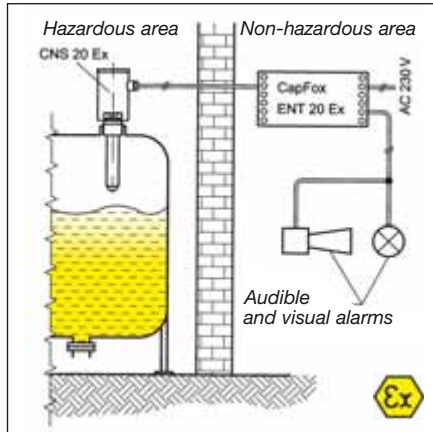
The constant direct current supplied by the pre-amplifier to the isolating amplifier is within a given range when there are no interferences. If a probe or connecting cable is defective, this range is exceeded, the relay switches and a visual alarm is generated.

Refer to page 50 for technical specifications, dimensions and an application example.

DG: H

Version	Part no.	Price €
CapFox ENT 20 Ex-230 AC 230 V	53420	
CapFox ENT 20 Ex-24 DC 24 V	53425	
Probes		
CNS 20-250 Length 250 mm	53430	
CNS 20-400 Length 400 mm	53432	
CNS 20-600 Length 600 mm	53434	
CNS 20-800 Length 800 mm	53436	
CNS 20-1000 Length 1000 mm	53438	
CNS 20 Ex-80 Length 80 mm	53440	
CNS 20 Ex-200 Length 200 mm	53442	
CNS 20 Ex-400 Length 400 mm	53444	
CNS 20 Ex-600 Length 600 mm	53446	
CNS 20 Ex-1000 Length 1,000 mm	53448	

Capacitance overfill alarm systems according to WHG for corrosive media



Technical specifications ENT 20 Ex

Operating temperature range
Ambient: -20 °C/+60 °C

Supply voltage
ENT 20 Ex-230 AC 230 V
ENT 20-Ex-24 DC 24 V

Power consumption
ENT 20 Ex-230 approx. 1.5 W
ENT 20-Ex-24 approx. 1.8 W

Probe circuit
According to
NAMUR EN 60947

Relay output
Relay contact: 1 voltage-free
changeover contact
Contact rating: AC 250 V 8 A
DC 24 V 4 A

Visual indication
Green LED mains „on“
Yellow LED probe (wetted)
Red LED alarm condition

Housing
Standard DIN-rail housing
W x H x D: 40 x 70 x 110 mm

Protection
IP 20 (EN 60529)

Approval
Overfill alarm system according to
WHG
Technical Approval of the German
Institute for Building Technology:
Z-65.13-156
TÜV 01 ATEX 1660 (EEx ia II C)

Technical specifications CNS 20

Operating temperature range
-20 °C/+80 °C

Process pressure
0/16 bar

Process connection
G1B according to DIN 3852-2

Installation lengths
250 to 1,000 mm as required

Electrode
PTFE fully insulated
Seal Viton

Switching characteristics
Contact with the medium (can be
adjusted in the terminal box via
potentiometer)

Housing
Robust weatherproof housing
with screw cover
Stainless steel 1.4571

Protection
IP 68 (EN 60529) on process side
IP 67 (EN 60529) on wiring side

Electrical connection
Cable gland PG 11

Approval
Overfill alarm system according to
WHG
Technical Approval of the German
Institute for Building Technology:
Z-65.13-156

Technical specifications CNS 20 Ex

Operating temperature range
-40 °C/+120 °C

Process pressure
0/30 bar

Process connection
G1B according to DIN 3852-2

Installation lengths
80 to 1,000 mm as required

Electrode
Stainless steel 1.4571
Probe tip PTFE insulated
Seal Viton

Switching characteristics
Contact with the medium (can be
adjusted in the terminal box via
potentiometer)

Housing
Robust weatherproof housing with
screw cover
Stainless steel 1.4571

Protection
IP 68 (EN 60529) on process side
IP 67 (EN 60529) on wiring side

Electrical connection
Cable gland PG 11

Approval
Overfill alarm system according to
WHG
Technical Approval of the German
Institute for Building Technology:
Z-65.13-156
TÜV 01 ATEX 1661 (EEx ia II C T6...T4)