

SensorsX SX-LDNB Series

Capacitive Point Level Switch

Reliable point-level detection for powders, granules and liquids



WIDE MEDIA RANGE
Conductive and insulating media

CONFIGURABLE OUTPUTS
SPDT relay, NPN or PNP

PROCESS OPTIONS
Threaded or flanged; up to 800 °C variants

■ PRODUCT OVERVIEW

The SensorsX SX-LDNB Series provides capacitive point-level detection for liquids, powders and granular solids. Changes in capacitance are detected as the process material reaches the sensing probe and are converted into a switching output. With adjustable sensitivity and a range of electrode, mounting and temperature configurations, the series can be adapted to a wide variety of process applications.

■ KEY FEATURES

- Suitable for many liquids, powders and granular solids.
- Integrated or remote electronics.
- Standard and high-sensitivity configurations.
- Optional adjustable delay from 0.2 to 50 s.
- Threaded and flanged process connections.
- Standard, hanging, corrosion-resistant, flat-plate and antistatic electrodes.
- Process-temperature variants from -20 °C to +800 °C, depending on construction.
- Continuously adjustable sensitivity for reliable switching with different media.

■ TYPICAL APPLICATIONS

Bulk Solids & Powders

- Silo high-level alarm
- Hopper overflow protection

Liquids & Process Vessels

- Tank high/low-level alarm

Hazardous & High-Temperature

- Intrinsically safe area installations
- High-temperature process vessels
- Corrosive-media detection (corrosion-resistant electrode)

■ GENERAL SPECIFICATIONS

Parameter	Specification
Supply	24 V DC, 220 V AC, or universal 24 V DC / 220 V AC configuration
Outputs	SPDT relay: 5 A at 250 V AC; or NPN / PNP transistor output
Ambient temperature	-20 to +60 °C
Process temperature	-20 to +80 °C standard; higher-temperature constructions available
Process pressure	Typically -1 to +10 bar; configuration-dependent; atmospheric for selected variants
Cable entry	M20 × 1.5
Housing diameter	Ø103 mm reference
Wetted materials	Stainless steel with UPE, PTFE, ceramic, PP or PVDF depending on electrode

■ CONFIGURATION SELECTION

Construction	Process temperature	Pressure	Typical connection	Wetted material
SX-LDNB01 Standard Type 1	-20...+80 °C	-1...+10 bar	1 in PT or specified	Stainless steel + UPE
SX-LDNB01 Standard Type 2	-20...+80 °C	-1...+10 bar	1 in PT or specified	Stainless steel + UPE
SX-LDNB01 High-temperature	-20...+200 °C	-1...+10 bar	1 in PT or specified	Stainless steel + PTFE
SX-LDNB01 Ultra-high-temperature	-20...+800 °C	Atmospheric	2-1/2 in × 5K or specified	Stainless steel + ceramic
SX-LDNB31 Corrosion-resistant standard	-20...+80 °C	-1...+10 bar	1-1/2 in × 10K or specified	PP
SX-LDNB31 Corrosion-resistant custom	-20...+120 °C	-1...+10 bar	2-1/2 in × 10K or specified	PVDF
SX-LDNB11 Cable / hanging	-20...+80 °C	-1...+10 bar	1-1/4 in PT or specified	Stainless steel + UPE
SX-LDNB51 High-temp antistatic	-20...+200 °C	-1...+10 bar	1 in PT or specified	Stainless steel + PTFE
SX-LDNB41 Flat-plate	-20...+80 °C	-1...+10 bar	2-1/2 in × 5K or specified	Stainless steel + UPE
SX-LDNB51 Antistatic	-20...+80 °C	Atmospheric	1 in PT or specified	Stainless steel + UPE

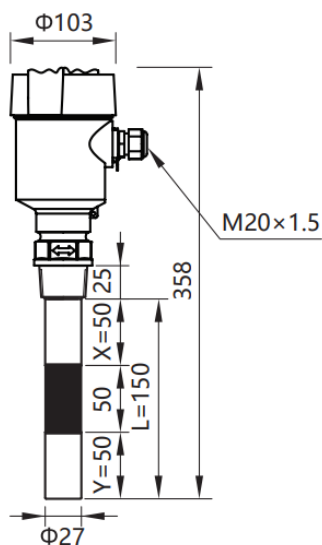
Note: Output of standard Type 1: SPDT relay, 5 A at 250 V AC

Output of all other types: SPDT relay, 5 A at 250 V AC, or NPN/PNP transistor output

■ MECHANICAL DIMENSIONS

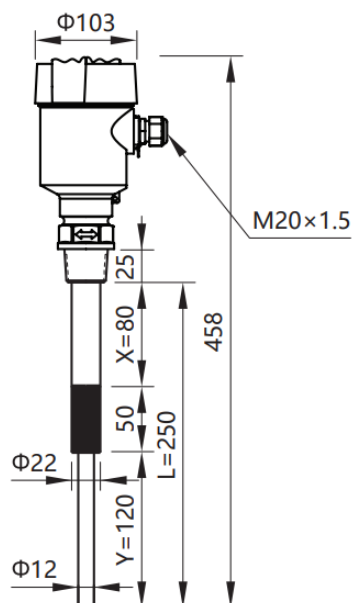
Note: Dimensions are reference values in millimetres. Insertion length L and the X/Y dimensions must be specified where applicable. Confirm the final approved drawing before fabrication.

SX-LDNB01 Standard Type 1



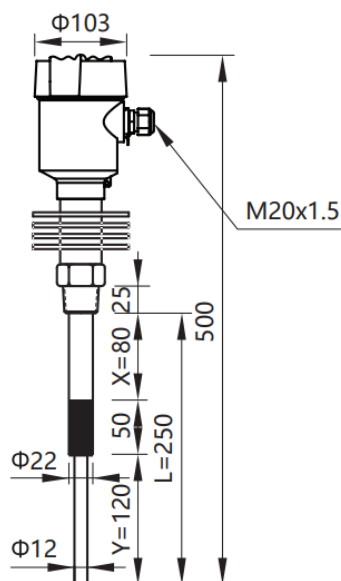
SX-LDNB01 Standard Type 1 | Process: -20...+80 °C | Pressure: -1...+10 bar | Connection: 1 in PT or specified | Material: Stainless steel + UPE

SX-LDNB01 Standard Type 2



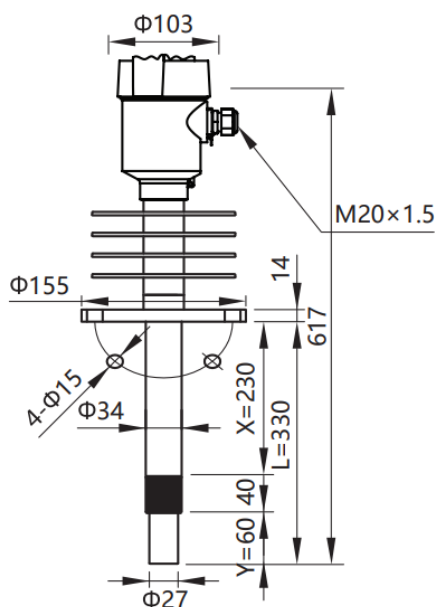
SX-LDNB01 Standard Type 2 | Process: -20...+80 °C | Pressure: -1...+10 bar | Connection: 1 in PT or specified | Material: Stainless steel + UPE

SX-LDNB01 High-temperature Type



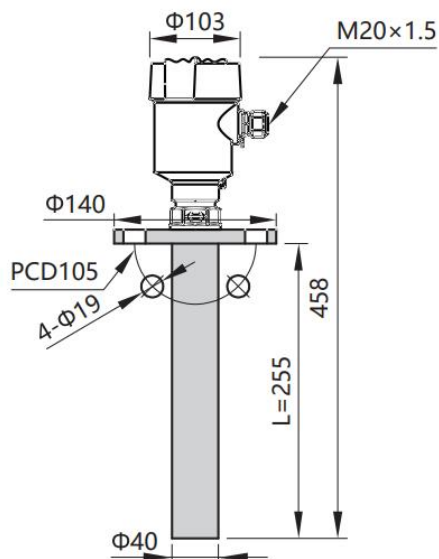
SX-LDNB01 High-temperature | Process: -20...+200 °C | Pressure: -1...+10 bar | Connection: 1 in PT or specified | Material: Stainless steel + PTFE

SX-LDNB01 Ultra-high-temperature Type



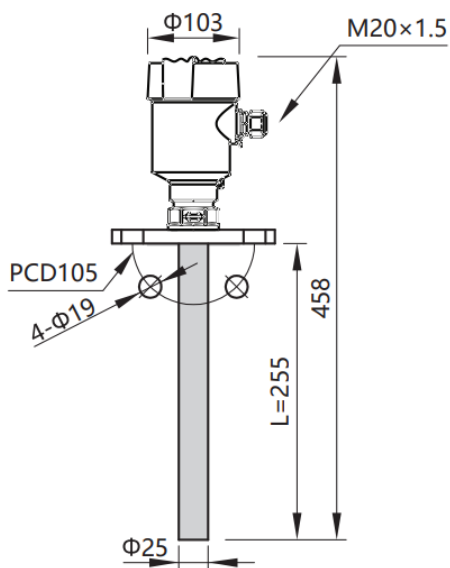
SX-LDNB01 Ultra-high-temperature | Process: -20...+800 °C | Pressure: Atmospheric | Connection: 2-1/2 in × 5K or specified | Material: Stainless steel + ceramic

SX-LDNB31 Corrosion-resistant - standard



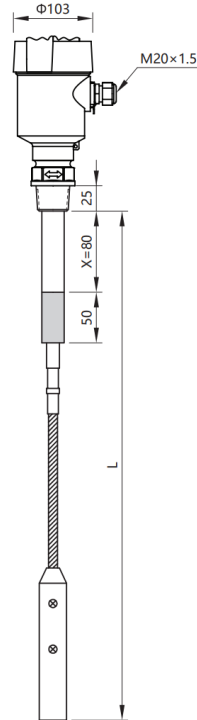
SX-LDNB31 Corrosion-resistant standard | Process: -20...+80 °C | Pressure: -1...+10 bar | Connection: 1-1/2 in × 10K or specified | Material: PP

SX-LDNB31 Corrosion-resistant - custom



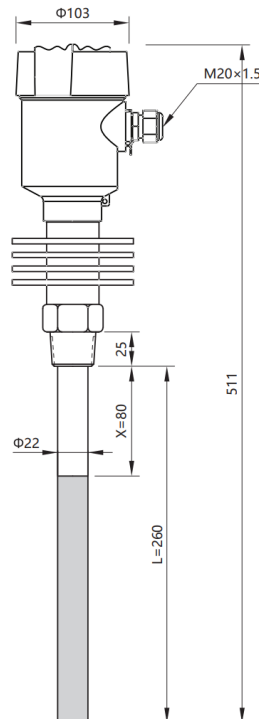
SX-LDNB31 Corrosion-resistant custom | Process: -20...+120 °C | Pressure: -1...+10 bar | Connection: 2-1/2 in × 10K or specified | Material: PVDF

SX-LDNB11 Cable / hanging type



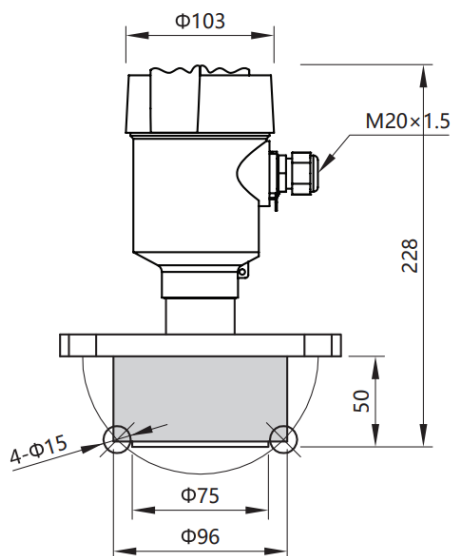
SX-LDNB11 Cable / hanging | Process: -20...+80 °C | Pressure: -1...+10 bar | Connection: 1-1/4 in PT or specified | Material: Stainless steel + UPE

SX-LDNB51 High-temperature antistatic type



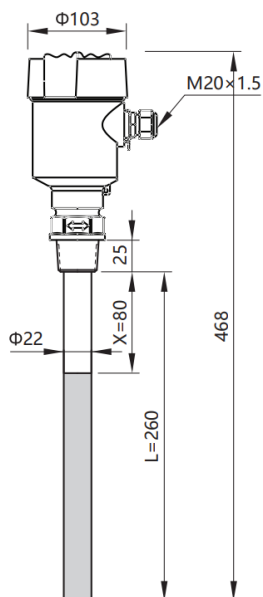
SX-LDNB51 High-temp antistatic | Process: -20...+200 °C | Pressure: -1...+10 bar | Connection: 1 in PT or specified | Material: Stainless steel + PTFE

SX-LDNB41 Flat-plate type



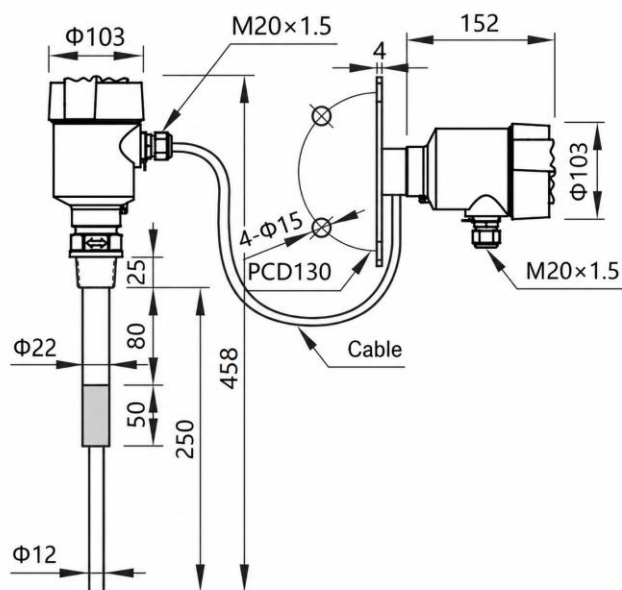
SX-LDNB41 Flat-plate | Process: -20...+80 °C | Pressure: -1...+10 bar | Connection: 2-1/2 in × 5K or specified | Material: Stainless steel + UPE

SX-LDNB51 Antistatic type



SX-LDNB51 Antistatic | Process: -20...+80 °C | Pressure: Atmospheric | Connection: 1 in PT or specified | Material: Stainless steel + UPE

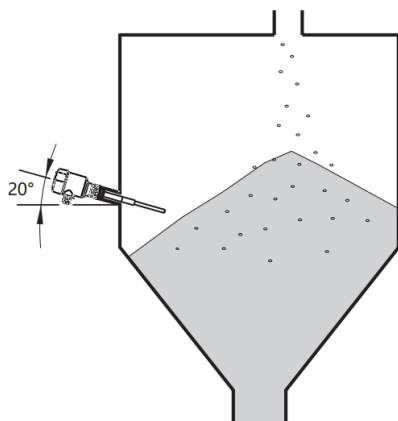
■ REMOTE ELECTRONICS ARRANGEMENT



Dimensions in millimetres

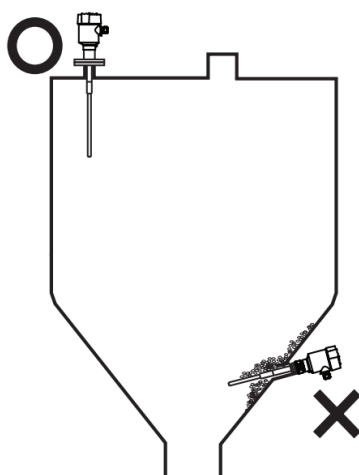
Item	Value
Supply Voltage	220VAC/24VDC
Cable entry	M20 × 1.5
Interconnecting cable	3 m standard; 10 m maximum, or user-specified
Output	5A/250VAC, SPDT or NPN/PNP
Ambient Temperature	-20~60°C
Operating Temperature	-20~80°C
Operating Pressure	-1~10 Bar
Connection Specification	1" PT or user-specified
Wetted Material	Stainless steel and UPE

■ INSTALLATION AND PUTTING INTO OPERATION



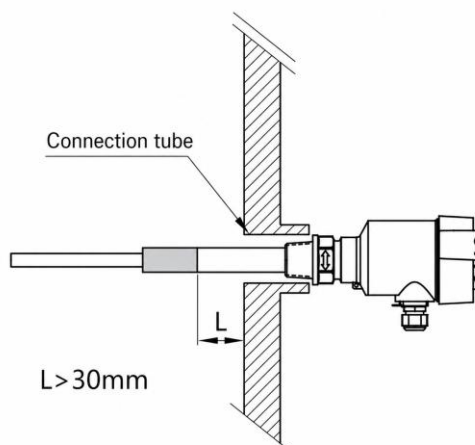
Mounting angle

For side mounting, install the switch approximately 20° downward from horizontal to improve sensitivity and reduce damage from material impact.

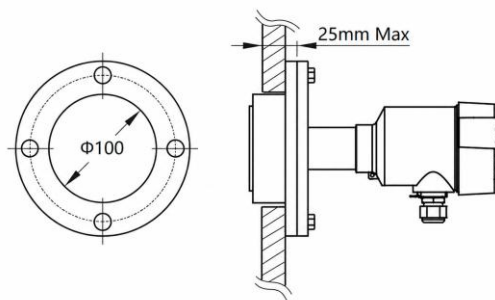


Top mounting for moving solids

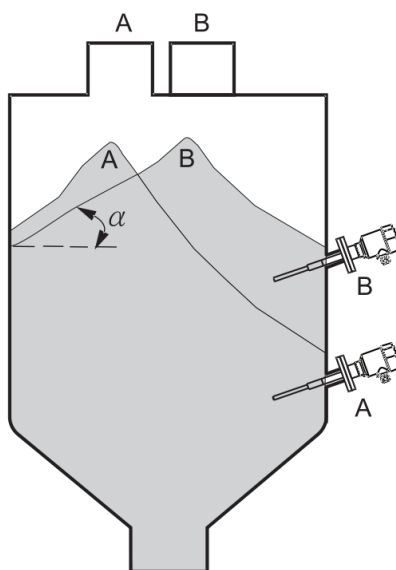
Where the material forms a variable angle of repose, top mounting is recommended to reduce its influence on switch operation.



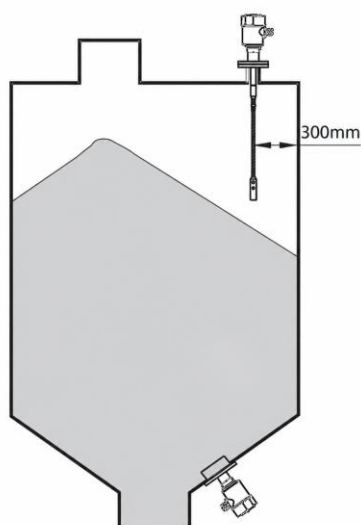
Extend the insulated section at least 30 mm into the vessel to prevent material buildup in the mounting nozzle from causing false switching and to maintain sufficient clearance for sensitivity adjustment.



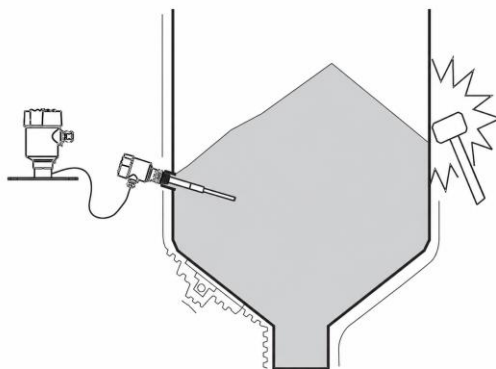
For the flat-plate version, keep the insulation thickness at the mounting flange at or below 25 mm to avoid sensitivity loss.



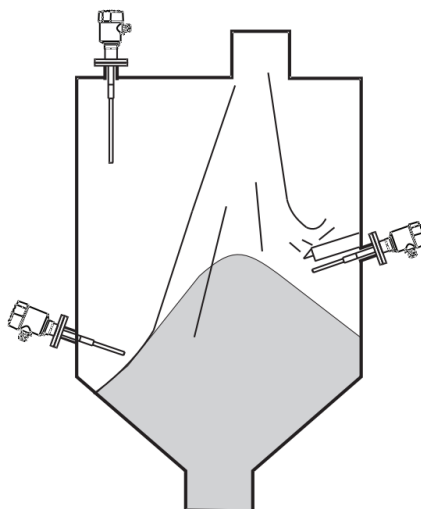
If filling is off-center, choose the switching location based on the actual angle of repose and fill/discharge pattern.



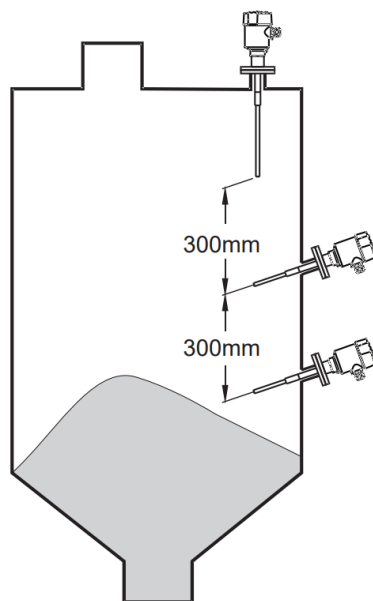
For top-mounted cable/rope probes, maintain at least 300 mm clearance from the vessel wall. A flat-plate low-level switch may be installed near the hopper outlet.



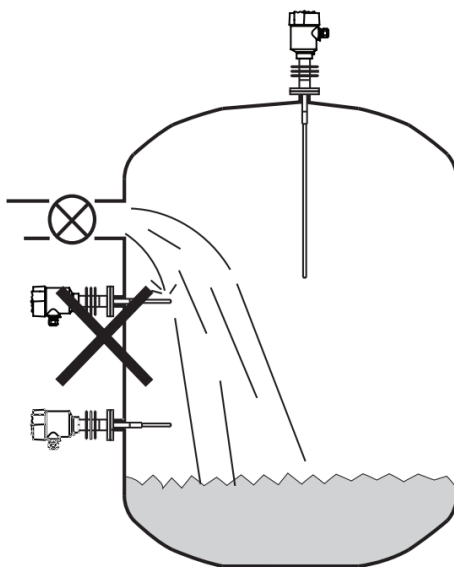
Use remote electronics where vessel vibration could damage electronics mounted directly on the process connection.



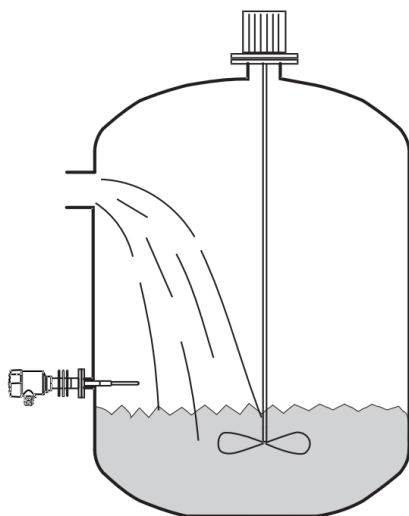
Do not place the probe in the direct path of falling material. Add a protective baffle when impact cannot be avoided.



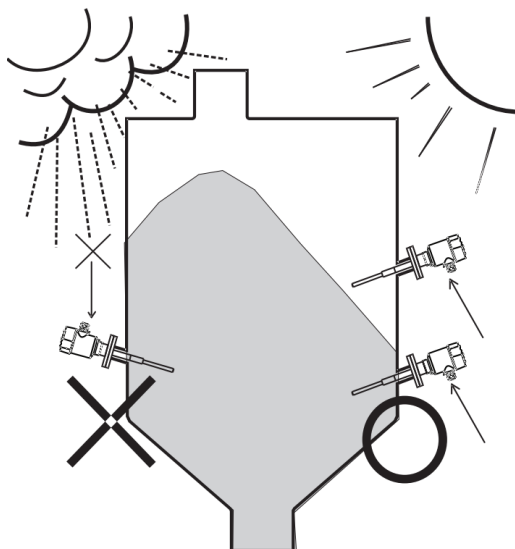
Maintain at least 300 mm between adjacent level switches to reduce mutual influence.



Do not install directly below a liquid inlet or solids feed stream; impact can cause false switching or damage.



In agitated or strongly fluctuating service, use an adjustable time-delay version to suppress nuisance switching.



Route the cable entry downward and secure the cable. Protect the housing from direct rain/spray and prolonged solar heating where practical.

■ ORDERING INFORMATION

Complete model number example: **SX-LDNB-D009DNT0001300**

Supply	
D	24 V DC
A	220 V AC
X	Universal 24 V DC or 220 V AC
Sensitivity	
0	Standard sensitivity — for conductive media
2	High sensitivity —for insulating media with $\epsilon_r > 3.0$
Time Delay	
0	Without delay
1	Adjustable delay, 0.2–50 s
Mounting	
9	Integrated
0	Remote
Nominal Size	
C	3/4 in (DN20)
D	1 in (DN25)
3	1-1/4 in (DN32)
E	1-1/2 in (DN40)
F	2 in (DN50)
G	2-1/2 in (DN65)
H	3 in (DN80)
I	4 in (DN100)
J	5 in (DN125)
K	6 in (DN150)
Type / Rating	
N	ASME B16.5 Class 150 flange
O	ASME B16.5 Class 300 flange
P	PT thread
Q	PF thread
F	NPT thread
T	GAS thread
U	EN 1092 PN6 flange
V	EN 1092 PN10 flange
W	EN 1092 PN16 flange
X	EN 1092 PN25 flange
Y	EN 1092 PN40 flange

Z	EN 1092 PN63 flange
Temperature	
T0	-20 to +80 °C
T1	-20 to +180 °C
T2	-20 to +300 °C
T3	-20 to +800 °C
Explosion Protection	
0	None
D	Explosion-proof enclosure
E	Intrinsically safe
Electrode	
01	Standard
11	Hanging
31	Corrosion-resistant
41	Flat-plate
51	Antistatic
Insertion Depth	
200mm	200mm
300mm	300mm
400mm	400mm
Optional / Customized	
D	Customized information; specify in order remarks

Note: In addition to the code, the purchase order shall state output type (SPDT, NPN or PNP), process medium, operating pressure and temperature, wetted-material requirement, insertion depth, and any hazardous-area certification requirement.

