

*Thank you for choosing a NIVELCO instrument.
We are sure that you will be satisfied throughout its use*

1. APPLICATION

The Ultrasonic Level Meters made by NIVELCO offers you excellent tools for level measurements on free flowing powders and bulk solids in tanks or silos further, for volume metering as well as for weight calculation.

The Two-Part Measurement System consists of SID-300 SenSonar Sensor(s) based on the latest SenSonic™ transducer technology of NIVELCO and a highly sophisticated SM-300 NIVOSONAR Remote Control Unit. This powerful system, is capable of measuring the level of practically any powder or bulk solid, even under most difficult circumstances such as dusting of powders caused by pneumatic filling etc.

2. TECHNICAL DATA

2.1 GENERAL DATA

Model	SID-34□	SID-33□	SID-31□	SID-31□H□
Range	0.6 to 15 m	0.6 to 30 m	1.2 to 60 m	1.5 to 70 m
Frequency	40 kHz	30 kHz	15 kHz	15 kHz
Total beam angle	5°			
Operating temperature	-30 °C ... +75 °C			
Ingress protection	IP 65			
Mounting	1" BSP			
Version	Standard	Ex	Standard	Ex
Transducer material	PP	Al	PP	Al
Transducer surface	PUR foam*	PS foam*	PUR foam*	PUR foam*
Pressure range	0.3 bar ... 3 bar (0.03 MPa ... 0.3 MPa)			
Output signal	Special signals to NIVOSONAR SM-300 remote control unit			
Power Supply	From NIVOSONAR SM-300 Remote Control Unit			External; 24 V AC, -15%...+10%; max. 5 VA
Electric connection	3 m integrated LIYCY cable; available up to a length of 30 m			
	4 x 0.5 mm ²	5 x 0.5 mm ²	5 x 0.5 mm ²	6 x 0.5 mm ²
Extension cable	Type	4-wire shielded		3-wire shielded + 2-wire power supply
	Length	0.5 ... 2.5 mm ² max 50 nF max 16 Ohm LIYCY 0.75 mm ²		LIYCY + p.s. 0.75mm ²
Electric protection	Class III with surge protection			
Certificate for Ex versions	Dust Ex Zone 10, Zone 11 Dust Ex B-3, B-4 T6			
Weight	1.9 kg	2.5 kg	5.1 kg	5,3 kg

* closed cell

2.2 ACCESSORIES

User's Manual, Warranty,

Option (to be ordered):
Fast Connecting Gland SAA 101
Aiming Device SAA 102
Damping Gland SAA 106

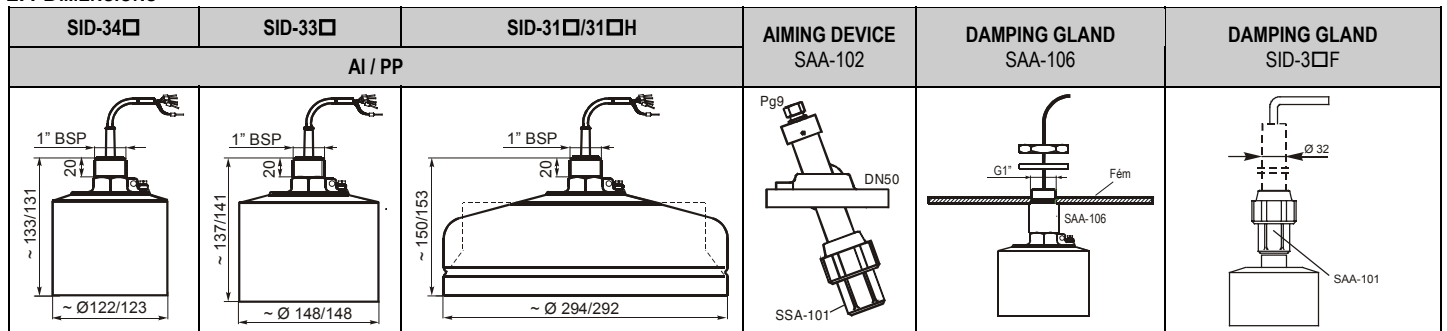
2.3 ORDER CODES

SENSONAR SID - 3 □ □ - H* - □

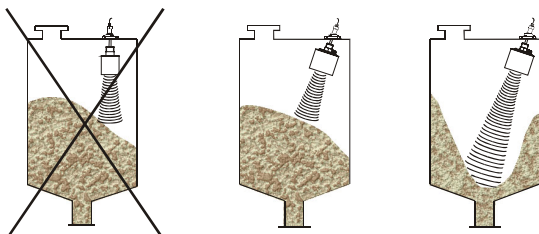
Range	Code	Mounting	Code	Power Supply/Ex	Code
60 m	1	1" BSP	0	none / standard	0
30 m	3	Fast con. gland	F	none / Ex	9
15 m	4	Aiming device	J	24 V AC / standard	H3
		Flanges	...	24 V AC / Ex	H7

* High power version of SID-31□ measuring range up to 70 m with external power supply.

2.4 DIMENSIONS



3. INSTALLATION



MOUNTING

Choose location carefully, try to assure that nothing obstructs the ultrasound beam.

To avoid any problems caused by surface unevenness, aiming (tilting) of the sensor is required, which can easily be carried out with the SAA-102 Aiming Device of NIVELCO. Aiming is best carried out, when the tank/silo is almost empty.

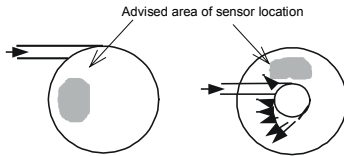
USER'S MANUAL



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PNEUMATIC FILLING

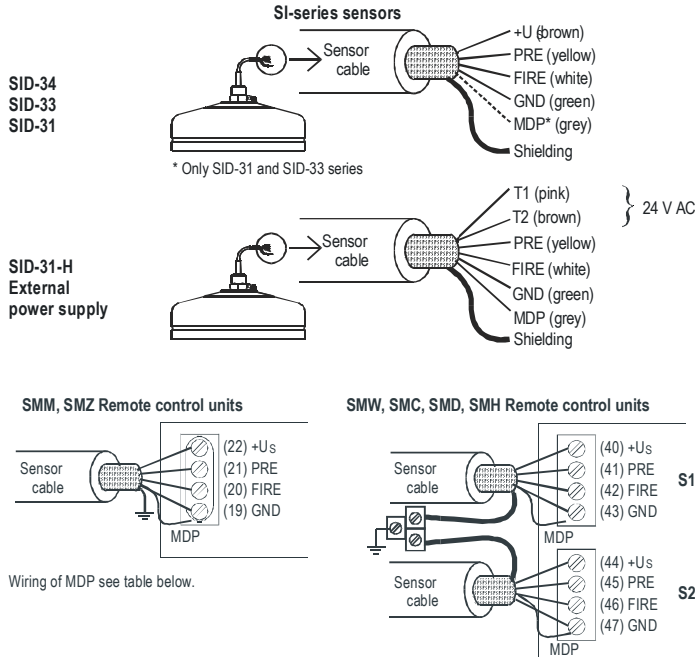
Locate the sensor where the motion of the filled-in material is the smallest.



AIR MOTION

Any intensive air motion in the vicinity of ultrasonic cone should be avoided. A strong wind may "blow away" the ultrasound. In case of outdoor applications a "shelter" properly installed will protect the measurement from strong wind.

4. ELECTRICAL CONNECTIONS

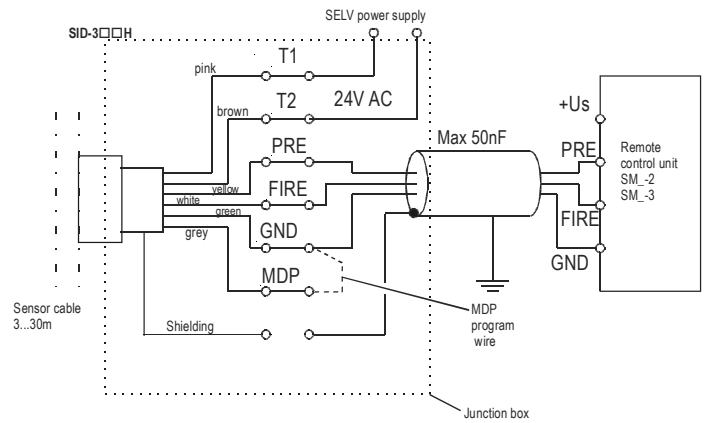
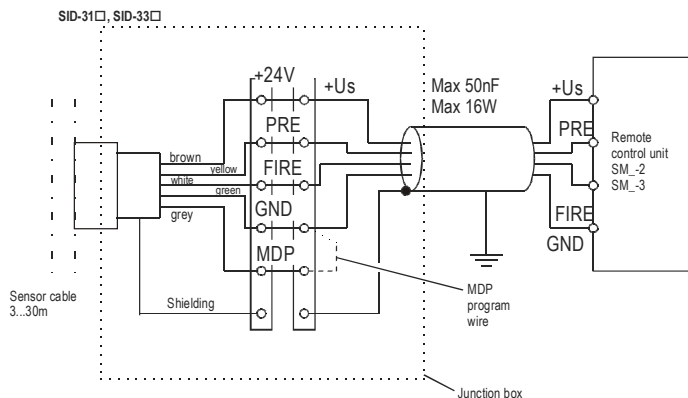


- Use ordinary, 4-wire shielded cables for connecting sensors to controllers. Use type of cable described in the "Technical Data Table".
- Program wire (MDP) of the SID-31□□□ and SID-33□□□ sensor has not to be extended.

Measuring range			MDP program wire
SID-33□	SID-31□	SID-31□H	
below 15 m	below 30 m	below 35 m	unconnected*
over 15 m	over 30 m	over 35 m	connect to GND

* except for good reflecting surface

- Extend sensor cable, as shown below



- Signal cable should not be trained next to power cables
- Each signal cable should have its own shielding

4.1 APPLICATION OF THE EX MODELS

- Models with order codes of SID-3□□□ Ex have to be used with standard (not Ex) remote controller, which should be located outside the hazardous area.!
- A junction box of a design meeting the electrical group of the environment must be applied for cable connection.
- Diameter of the applied cable must be fit for the cable entry.
- The cable must be relieved and fixed outside the apparatus.
- The unit, as a dust explosion-proof one, can be mounted in areas Zone 10 and Zone 11
- Neither the unit nor any of its parts can serve for flameproof closure of an area of Zone 10.
- The unit can should not be installed in a space with the risk of dust layer formation thicker than 5 mm.
- The sensor must not be installed in the path of pneumatic dust flow.
- It should not be mounted on directly to a steel structure i.e. damping glad should be use.

5. INSTALLATION

See User's Manual for S-300 compact ultrasonic level transmitter series for free flowing solids sbd21j1a0600h_01.

6. MAINTENANCE AND REPAIRS

The device does not require routine maintenance. In some instances, however, the sensor probe may need occasional cleaning to remove surface deposits. Dust settled on the surface or enclosure should be removed by compressed air. Repairs under or out of the warranty period will be carried out at the Manufacturer

7. STORAGE CONDITIONS

Environmental temperature range: -30 to +70 °C
Relative humidity: up to 98%

8. WARRANTY

All Nivelco products are warranted free of defects in materials or workmanship for a period of two years from the date of purchase. Repairs under guarantee are carried out at the Manufacturer's premises. The Purchaser is liable for costs of dismantling and re-installation as well as transport costs. Nivelco shall not be liable for misapplication, labour claims, direct or consequential damage or expense arising from the installation or use of equipment.