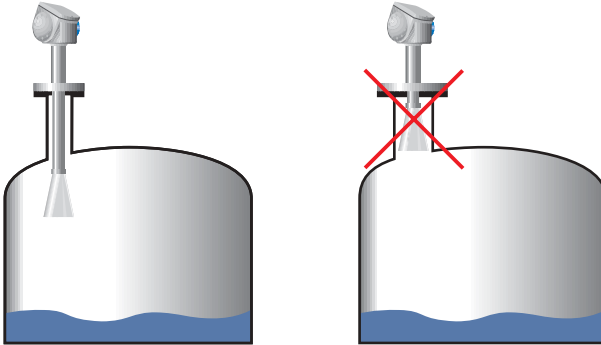
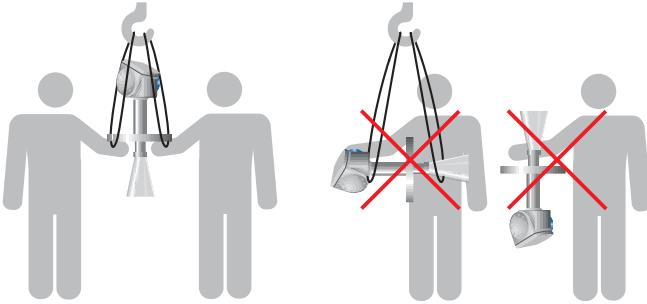
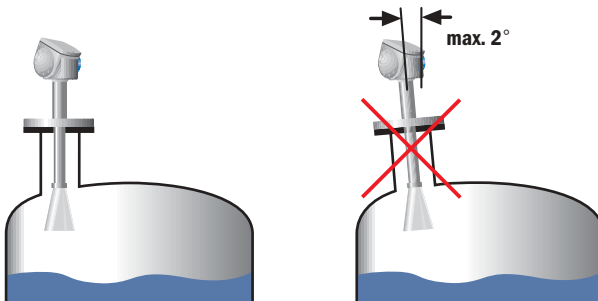




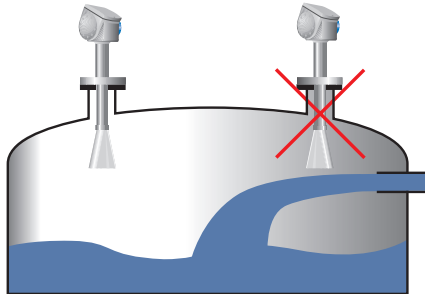
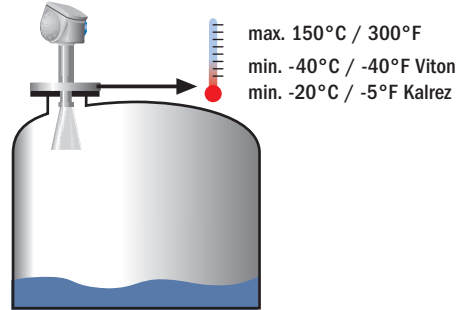
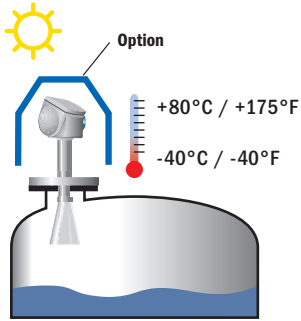
## Handling and installation instructions



 Antenna must protrude from nozzle base.



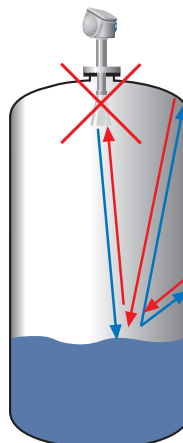
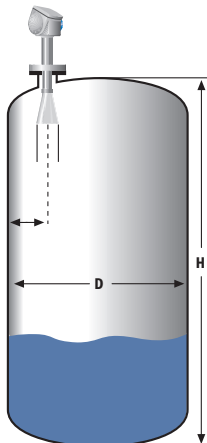
## Handling and installation instructions



⚠ Install away from entry pipe.

DN 40 / 50:  
> 1/7 H, but max. 1/3 D

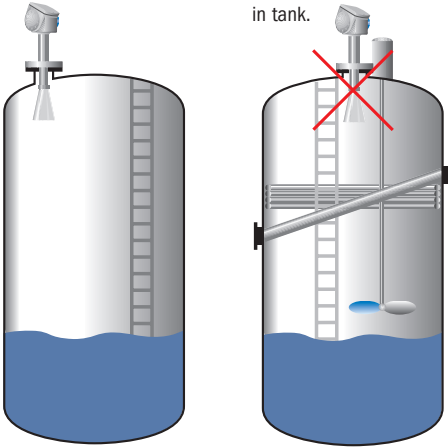
DN 80:  
> 1/10 H, but max. 1/3 D



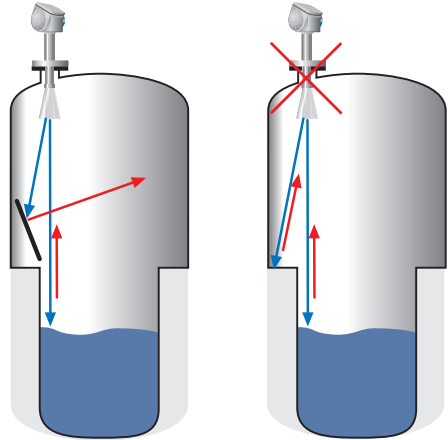
⚠ Mount off-centre to avoid multiple reflections.

## Special considerations

⚠ Avoid too many objects near the radar beam in tank.

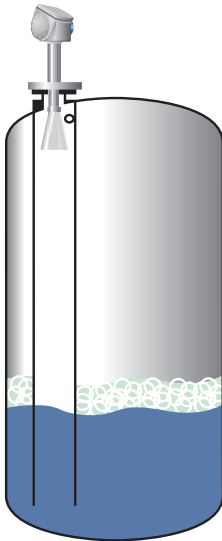


⚠ Stray reflections!

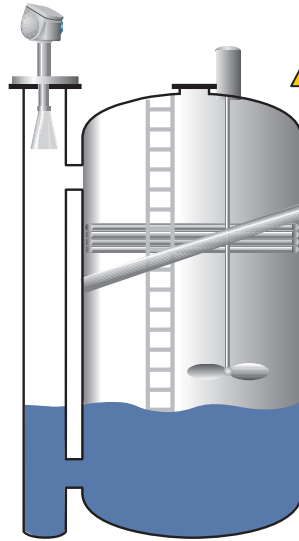


## Stilling wells and bypass chambers

⚠ Foam:  
use stilling well

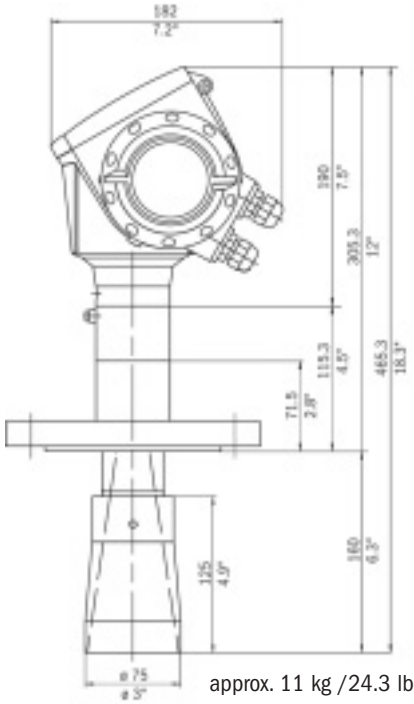


⚠ Too many objects in tank:  
use bypass chamber

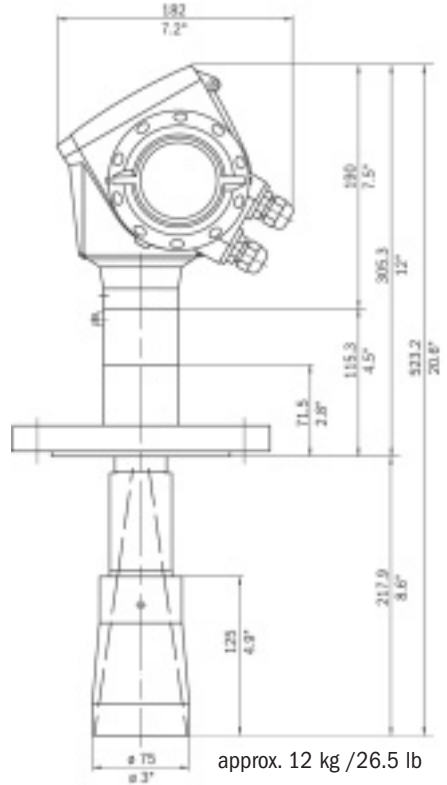


## Dimensions and Weights

Flange (Antenna DN 80)



Antenna DN 80 with antenna extension

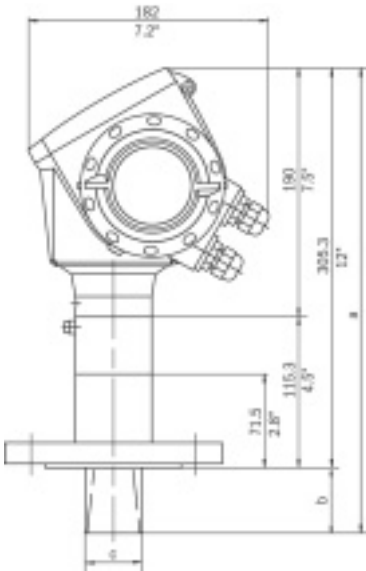


**Note:**

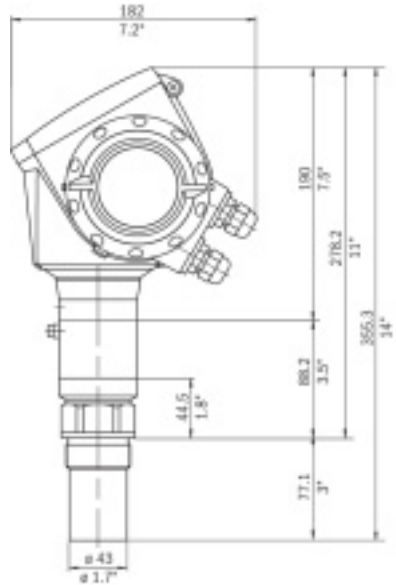
Additional antenna extension of 105 mm / 4.1" length available.

## Dimensions and Weights

### Flange (Antenna DN 40/50)

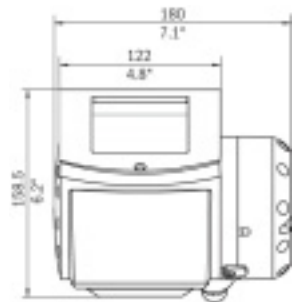


### Thread



Dimensions in mm and inch

Antenna type	c mm / inch	b mm / inch	a mm / inch
Antenna DN 40	39 / 1.5	38.5 / 1.5	343.8 / 13.5
Antenna DN 50	43 / 1.7	50 / 2	355.3 / 14



### Note:

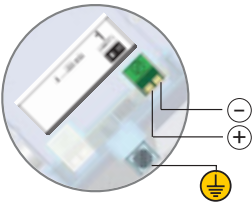
Cable glands are not delivered with the device.

## Terminal Compartment and Terminals



### Connection procedure

- Unscrew terminal compartment cover.
- Wire up using standard procedures.
- Apply grease to thread of cover before closing.

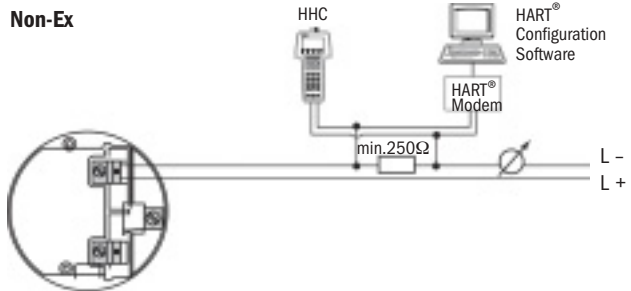


### Output 1

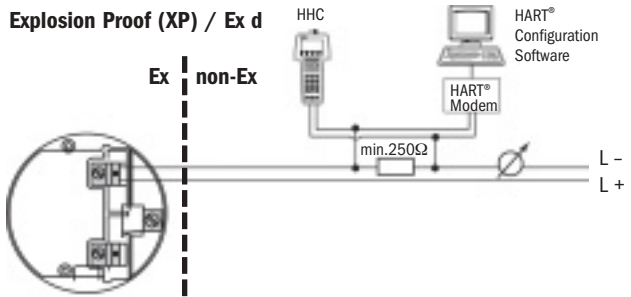
4 ... 20 mA/HART  
or  
3.8 ... 20.5 mA/HART  
acc. to NAMUR NE 43

## Wiring options

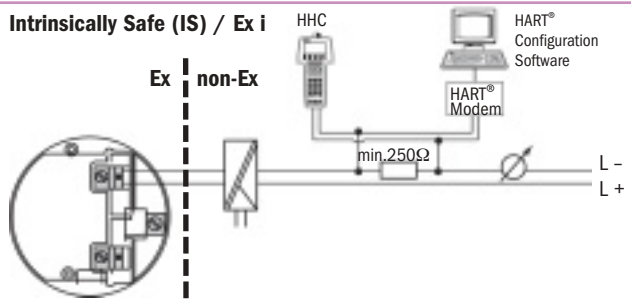
### Non-Ex



### Explosion Proof (XP) / Ex d



### Intrinsically Safe (IS) / Ex i



**Note:** Other options how to connect the HHC and modem to the HART® loop are available.

## Technical data extract

### Application conditions

#### Temperature

Ambient temperature	-40...+80°C / -40...+175°F; EEx i: -40...+60°C / -40...+140°F
Storage temperature	-40...+85°C / -40...+185°F
Flange temperature	-40...+150°C / -40...+300°F (Viton gasket) -20...+150°C / -5...+300°F (Kalrez 6375 gasket)
Thermal shock resistance	100°C/min

### Process conditions

Operating pressure	-1...40 bar / -14.5...580 psig; subject to process connection used and flange temperature
Dielectric constant	1.5
Vibration resistance	IEC 68-2-6 and prEN 50178 (10...57Hz: 0.075 mm / 57...150 Hz: 1 g)
Protection category	IP 66/67 equiv. to NEMA 6-6X

### Output

#### Output signal

Output 1	4 ... 20 mA HART® or 3.8 ... 20.5 mA acc. to NAMUR NE 43
Accuracy	0.05% (rel. 20 mA; 20°C / 68°F)
Resolution	±2 µA
Temperature drift	Typically 50 ppm/K
Error signal	High: 22 mA; Low: 3.6 mA acc. to NAMUR NE 43
Max. Load	350 ohm

### Approvals

Overfill protection	WHG
ATEX	ATEX II G/D 1, 1/2, 2 EEx ia IIC T6; ATEX II G/D 1/2, 2 EEx d ia IIC T6
FM	IS class I Div. 1 Gr. A...G; XP class I Div. 1 Gr. A...G
CSA	IS class I Div. 1 Gr. A...G; XP class I Div. 1 Gr. A...G

For further data see data sheet, approvals and handbook on CD-ROM



## Human interface

### Normal mode:

Selects display style.

### Program mode:

Moves cursor to right or selects next menu level.

### Program mode:

Saves or confirms parameter.

### Program mode:

ESC-function returns to previous menu. If top menu reached, returns to normal mode. Any parameter value entered is not stored.

### Normal mode:

Selects type of information displayed.

### Program mode:

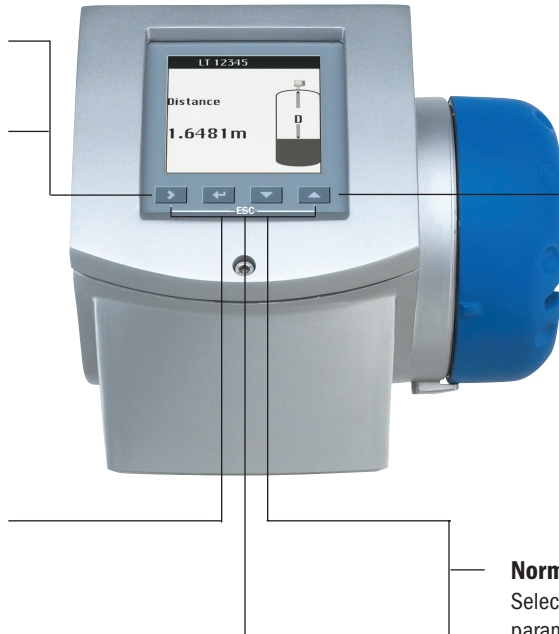
Moves menu selector up the list or increments parameter value.

### Normal mode:

Selects measurement parameters to be displayed.














### Program mode:

Moves menu selector down list or decrements parameter value.



## Human interface

### Hot keys

Mode	Hot key activated when:	Action
Normal	  3 seconds	Enters program mode
Program		Saves current function used as quick link
Normal	  3 seconds	Active screen stored as default screen
All modes 	  3 seconds	HMI will reset to default language
Program	  +   3 seconds	Returns to normal mode (last screen displayed)
Normal (signal screen)	  3 seconds	Signal editing function

## Startup procedure



After mechanical and electrical installation, start-up, then the device performs a self-test and is ready for use.



If false parameter value is inputted (e.g. outside limits) an error message / icon occurs, and after 10 seconds the screen switches to HELP function.

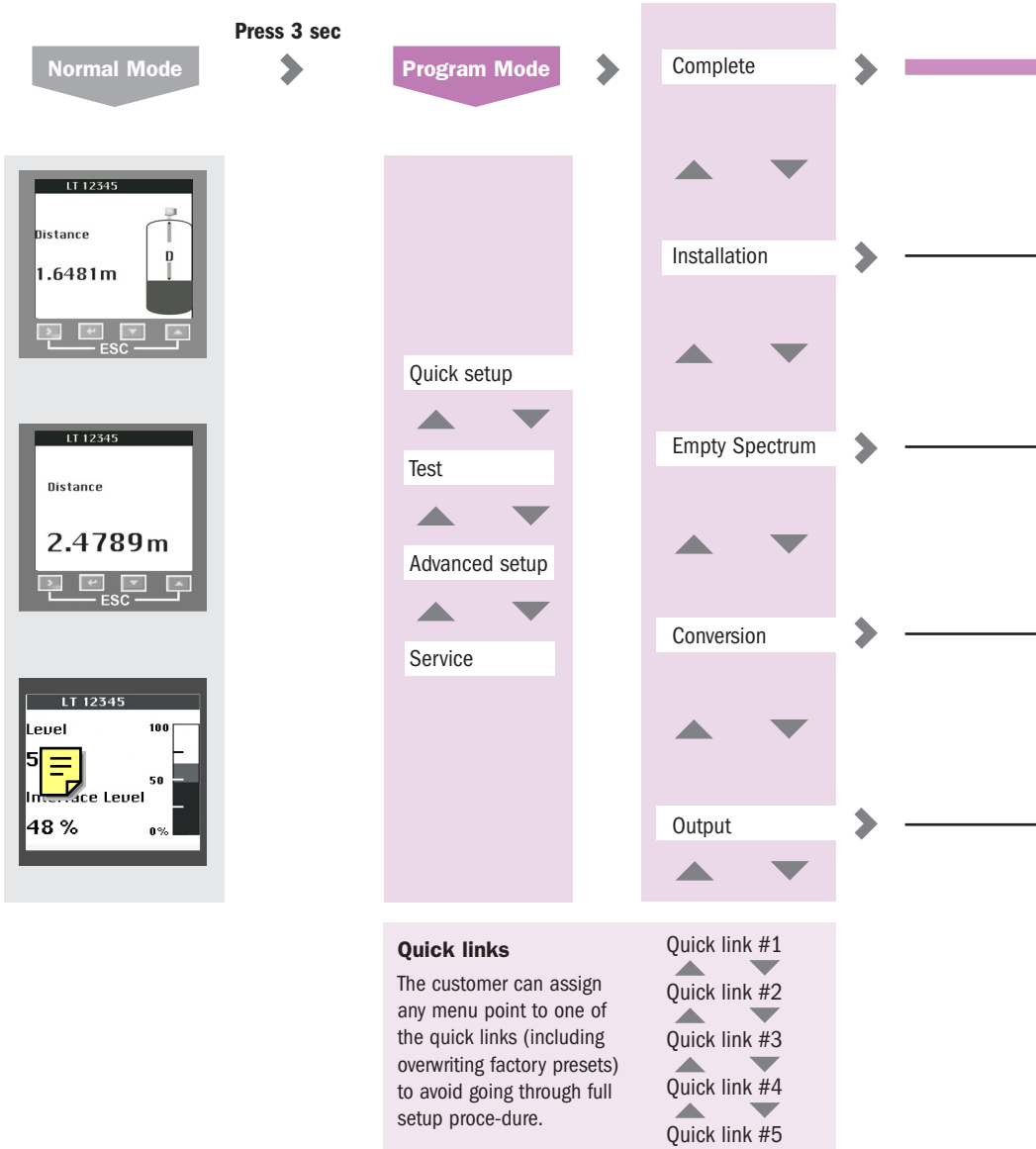


The Wizard automatically displays parameter setup steps on-screen.



If error persists, download log file using PACTware and send to e-mail address given on back rear page. For further information see PACTware handbook on CD-ROM.

## Setup procedure



## Setup procedure

1. Installation type
  2. Tank height
  3. Measuring range
  4. Application type
  5. Stillwell diameter\*
  6. Blocking distance
  7. Settings summary
  8. Save?
- \*if stillwell selected in step 4

1. Calculation will not work if tank full. Continue?
2. Are all moving parts on?
3. Is tank partially filled or empty?
4. Level measurement value. Edit?
5. Start recording
6. Display calculated spectrum
7. Save?

1. Output 1 (Hart)
2. 4 mA setting
3. 20 mA setting
4. Output range
5. Error handling
6. HART address
7. Settings summary
8. Save?

1. Conversion wizard type
2. Length unit
3. Density of product 1 (yes or no)
4. Density unit and value
5. Tank shape
6. Sphere Diameter
7. Tank Bottom Shape
8. Tank Diameter (Cylindrical)
9. Tank Height (Cylindrical)
10. Tank Height 1 (Rectangular with Conical end)
11. Tank Height 2 (Rectangular with Conical end)
12. Tank Width (Rectangular with Conical end)
13. Tank Depth (Rectangular with Conical end)
14. Cone Depth (Rectangular with Conical end)
15. Tank Diameter (Cylindrical with Conical end)
16. Tank Height 1 (Cylindrical with Conical end)
17. Tank Height 2 (Cylindrical with Conical end)
18. Cone Diameter (Cylindrical with Conical end)
19. Tank Depth (Rectangular)
20. Tank Width (Rectangular)
21. Tank Height (Rectangular)
22. Angle of inclination X degrees
23. Conversion unit
24. Volume table values. Edit, save and exit setup (29)
25. Mass values. Save and exit the setup (29)
26. Length free unit name
27. Conversion free unit name
28. Enter free unit values, save and exit the setup (29)
29. Exit Setup



Full details see  
handbook on  
CD-ROM