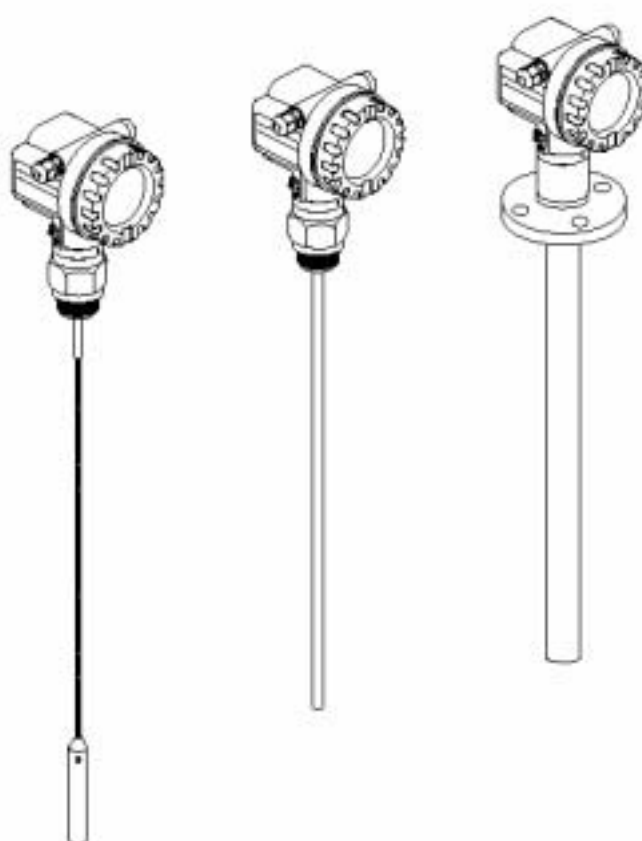


# FMP40 - LEVEL GUIDE

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## Operating Instructions



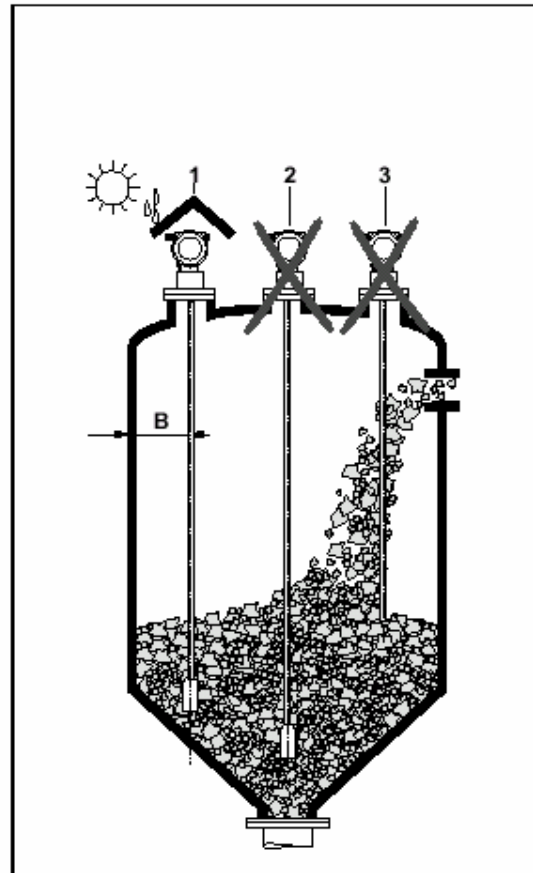
**Endress + Hauser**  
The Power of Know How



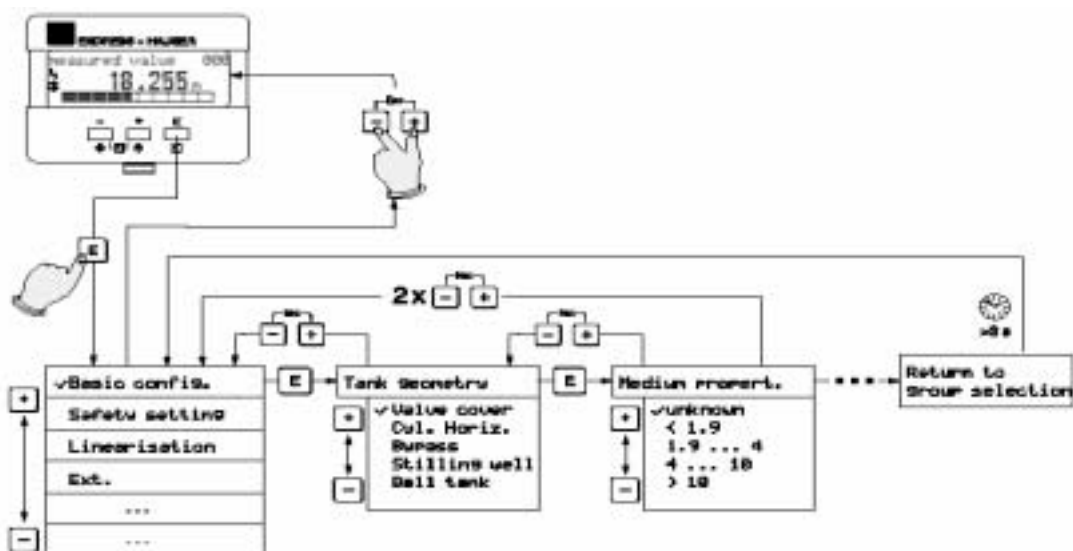
1.

### Mounting location

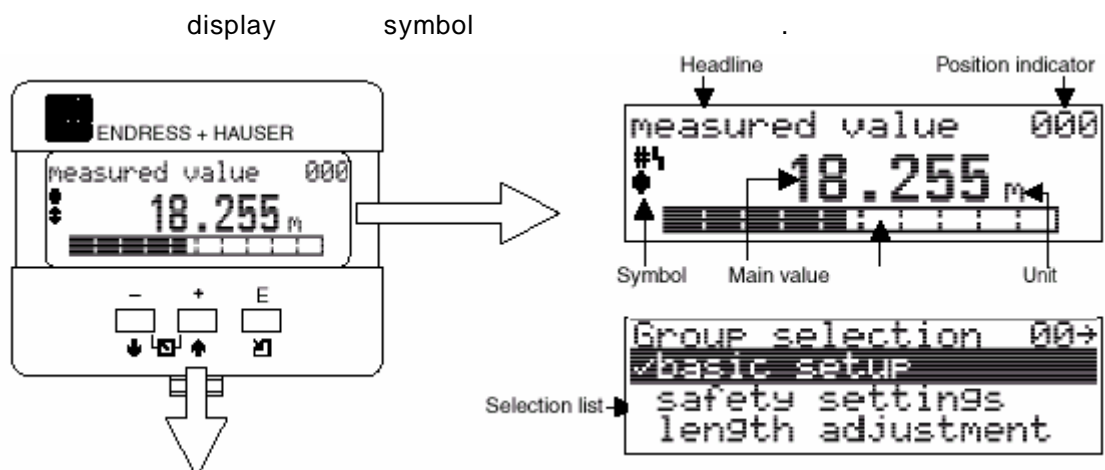
- As far away as possible from filling and emptying openings, in order to keep load and wear to a minimum.
- We recommend installing the probe in  $\sim 1/6 \dots 1/4$  of the silo diameter.
- Concrete silos should be approx. 1 m, but min. 0.5 m from the wall.
- Metal and plastic silos can also be very close to the wall, as long as you are sure that the probe is not touching the wall. Not exactly central for metallic silos.
- The length of the probe determines the measuring range. Order the length such that the end of the probe ends approx. 150 mm above the floor of the silo. Probe specific blocking distances have to be taken into account.
- It is better to order the probe too long than too short. If need be, it can be easily shortened.
- Temperature conditions must be met.
- It is recommended that a protective cover (1) is used, in order to protect the transmitter against direct sunlight or rain (see »Accessories« on page 63).



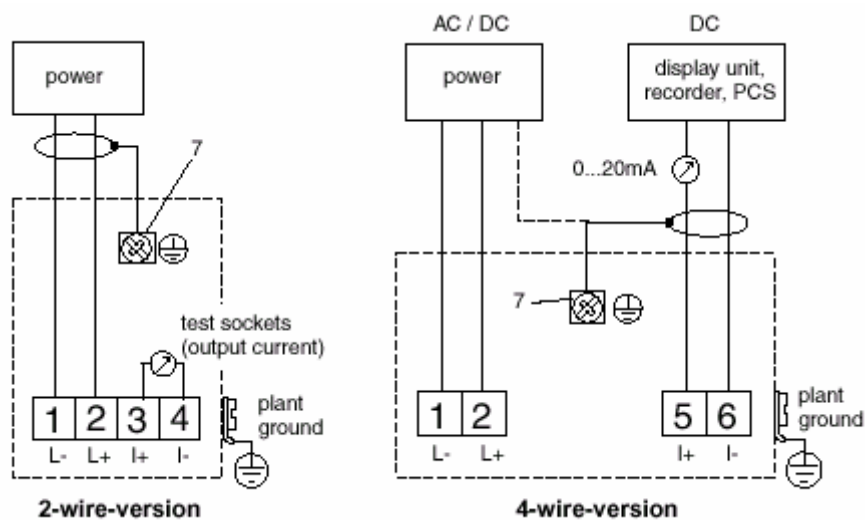
### 2. display program



-, +, E 가

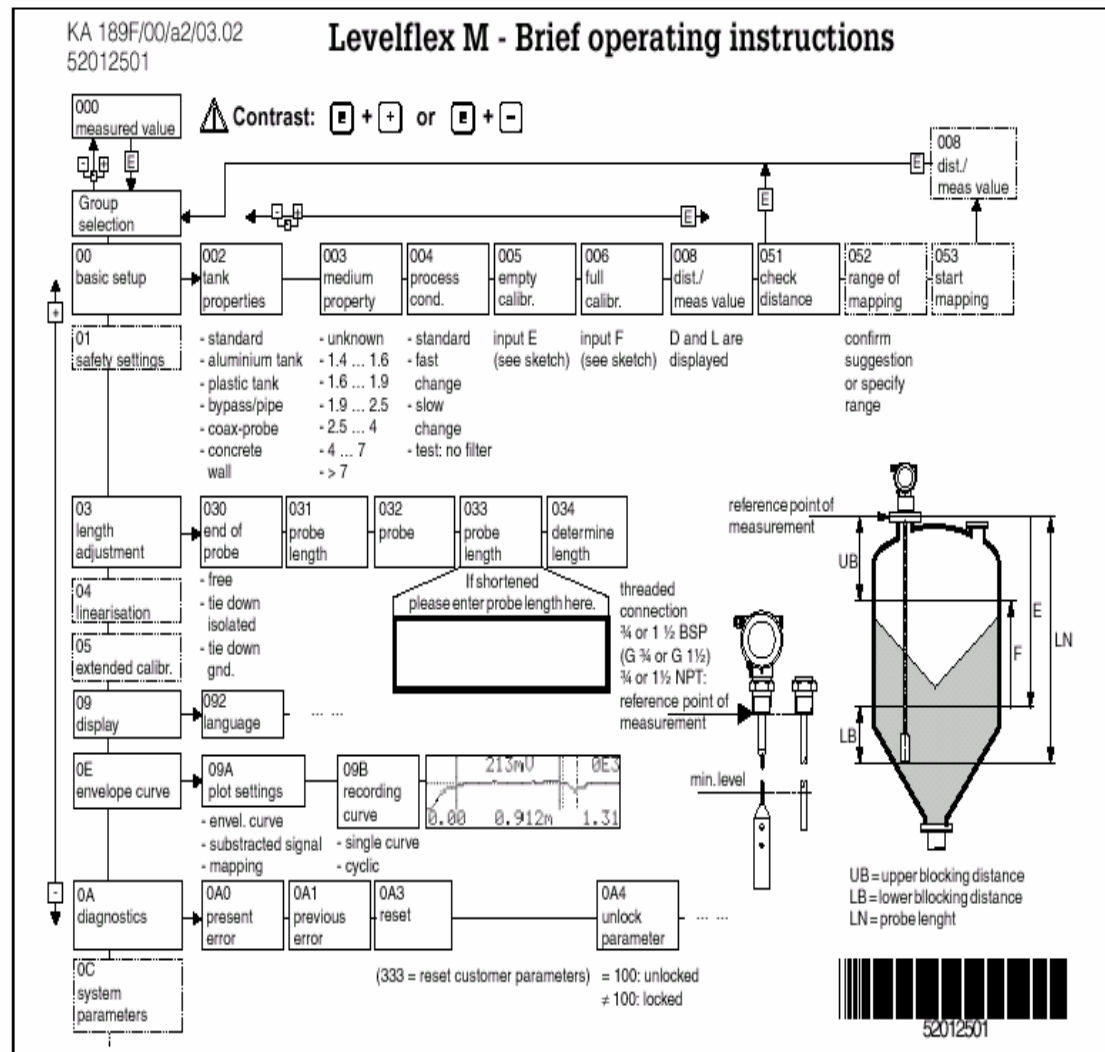


### 3. connection .(2-wire , 4-wire version)

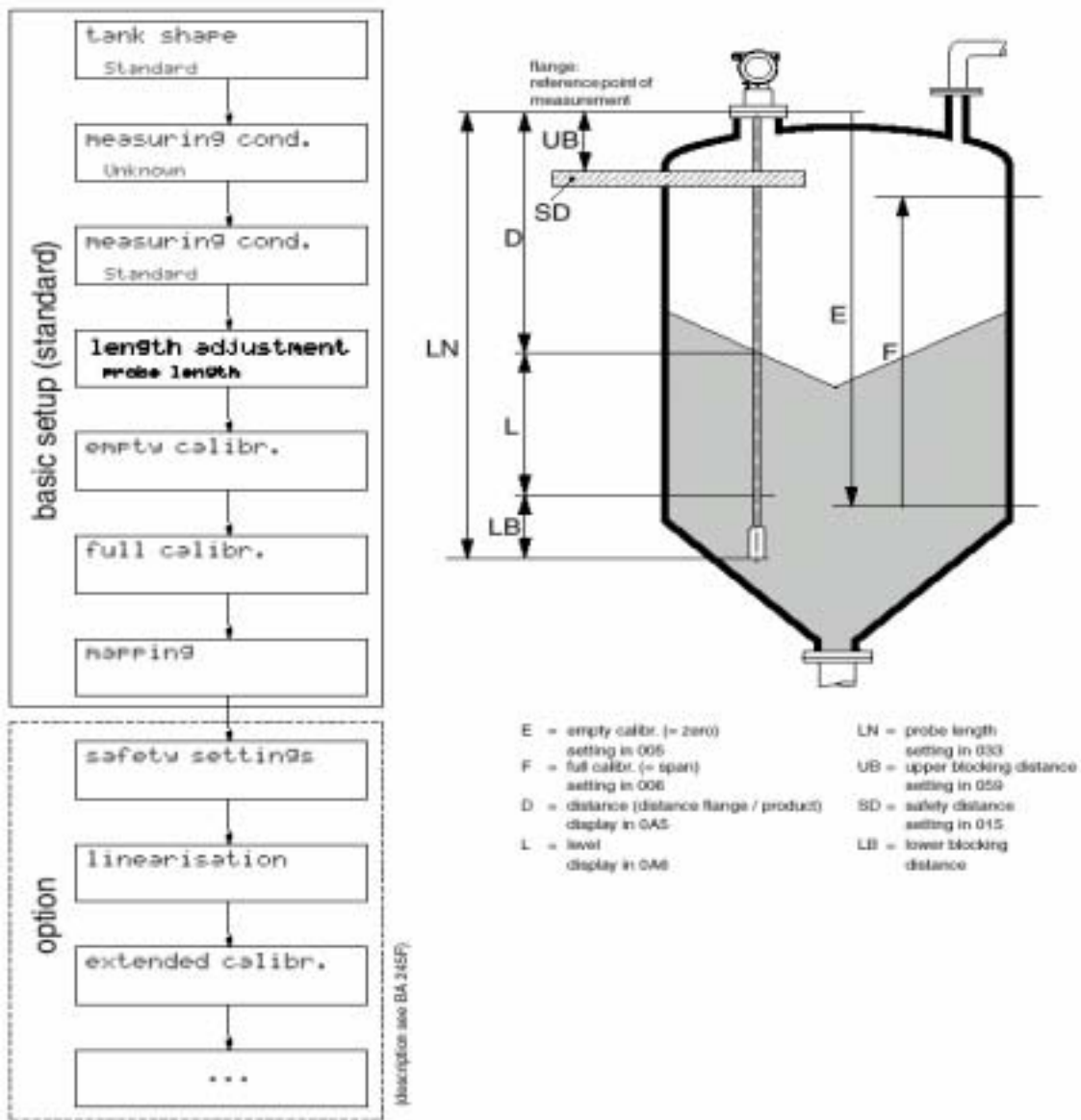


## 4. program

program



5. basic calibration



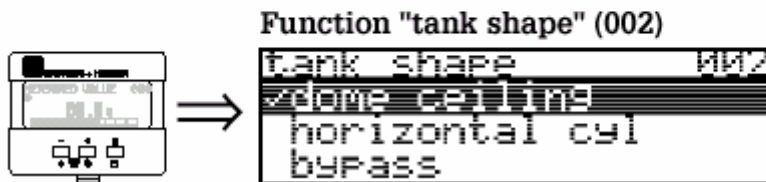
basic setup

setting

- 1> tank , .
- 2> . , unknow .
- 3> tank . standard .
- 4> tank flange .
- 5> 4 - 20mA .

## 6. setting .(basic setup)

1> basic setup / tank shape: tank

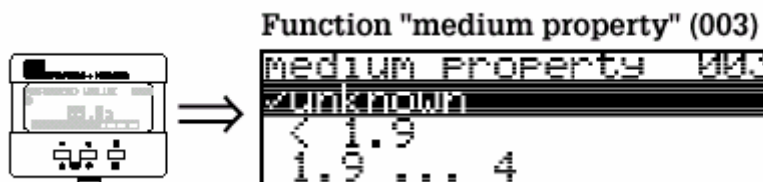


tank

### Selection:

- **standard**
- aluminium tank
- plastic tank
- bypass / pipe
- coax probe
- concrete wall

2> basic setup / medium property



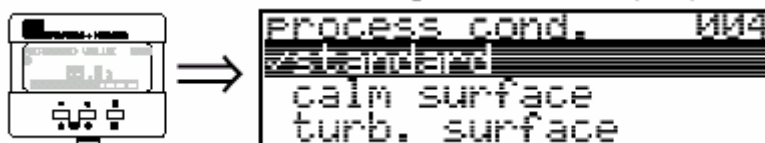
### Selection:

- **unknown**
- 1.4 ... 1.6
- 1.6 ... 1.9
- 1.9 ... 2.5
- 2.5 ... 4.0
- 4.0 ... 7.0
- > 7.0

3> basic setup / process cond.

Tank

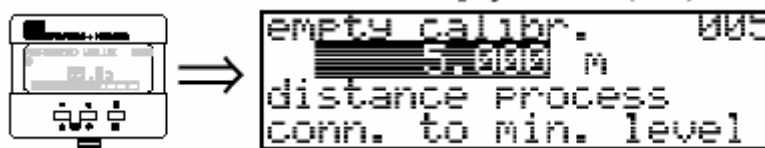
standard



**Selection:**

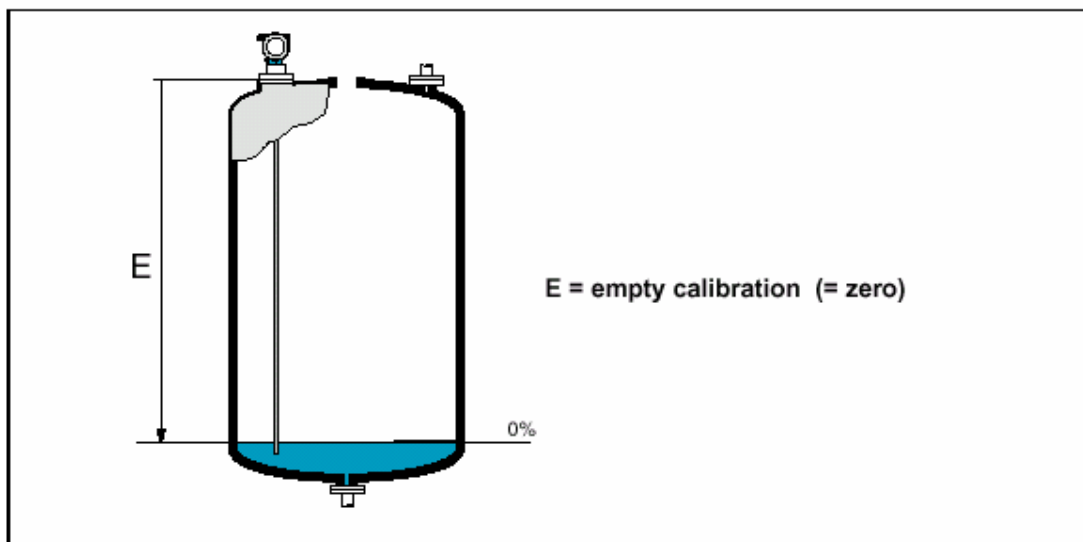
- **standard**
- calm surface
- turb. surface
- agitator
- fast change
- test: no filter

4> basic setup / empty calibration

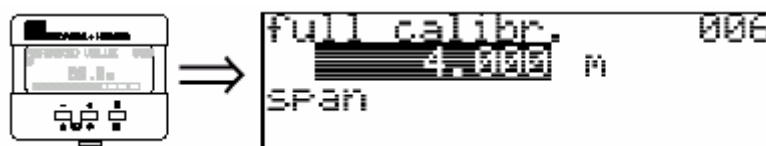


tank

flange



5> basic setup / full calibration

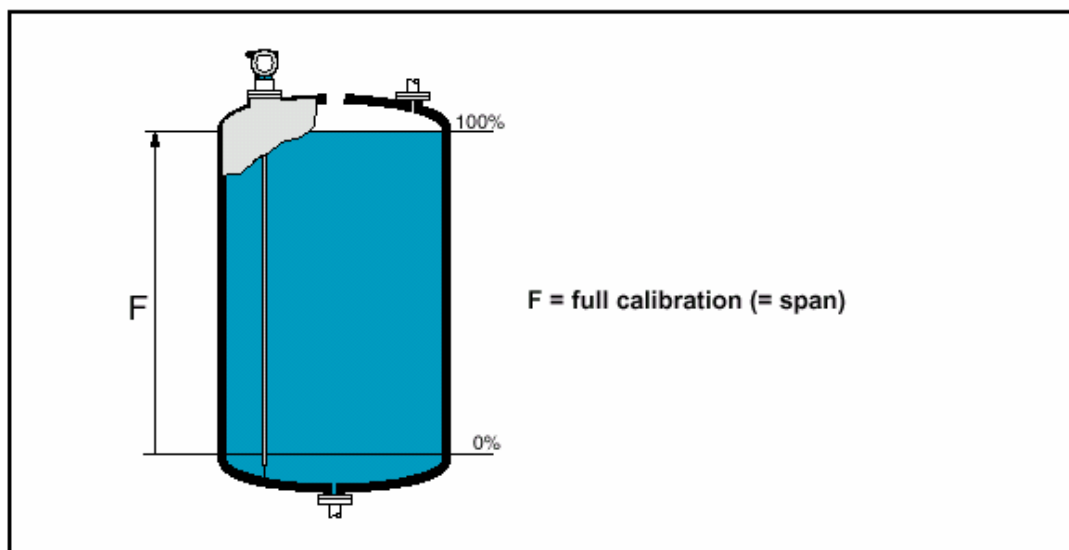


4-20mA

tank

4>

empty



setting

calibration

.



## 7. trouble shooting.

가                      error message                      display                      error message

Code	Description	Possible cause	Remedy
A102	checksum error general reset & new calibr.required	device has been powered off before data could be stored; emc problem; E <sup>2</sup> PROM defect	reset; avoid emc problem; if alarm prevails after reset, exchange electronics
W103	initialising - please wait	E <sup>2</sup> PROM storage not yet finished	wait some seconds; if warning prevails, exchange electronics
A106	downloading please wait	processing data download	wait until warning disappears
A110	checksum error general reset & new calibr.required	device has been powered off before data could be stored; emc problem; E <sup>2</sup> PROM defect	reset; avoid emc problem; if alarm prevails after reset, exchange electronics
A111	electronics defect	RAM defective	reset; if alarm prevails after reset, exchange electronics
A113	electronics defect	ROM defective	reset; if alarm prevails after reset, exchange electronics
A114	electronics defect	E2PROM defective	reset; if alarm prevails after reset, exchange electronics
A115	electronics defect	general hardware problem	reset; if alarm prevails after reset, exchange electronics
A116	download error repeat download	checksum of stored data not correct	restart download of data
A121	electronics defect	no factory calibration existant; E <sup>2</sup> PROM defective	contact service
W153	initialising - please wait	initialisation of electronics	wait some seconds; if warning prevails, power off device and power on again
A160	checksum error general reset & new calibr.required	device has been powered off before data could be stored; emc problem; E <sup>2</sup> PROM defect	reset; avoid emc problem; if alarm prevails after reset, exchange electronics
A164	electronics defect	hardware problem	reset; if alarm prevails after reset, exchange electronics
A171	electronics defect	hardware problem	reset; if alarm prevails after reset, exchange electronics
A221	Probe pulse deviation from average values	HF module or cable between HF module and electronics defective	Check contacts on HF module If fault cannot be eliminated: Replace HF module

Code	Description	Possible cause	Remedy
A241	Broken probe	Broken probe or value for probe length is too short	Check the probe length in 033, Check the probe itself, if the probe is broken, change the probe, or change to a non contact system
A251	Feedthrough	Lost contact in the process feedthrough	Replace process feedthrough
A261	HF cable defective	HF cable defective or HF connector removed	Check HF connector, replace cable if defective
A275	Offset too high	Temperature at the electronics too high or HF module defective	Check temperature, replace HF module if defective
W511	no factory calibration ch1	factory calibration has been deleted	record new factory calibration
A512	recording of mapping please wait	mapping active	wait some seconds until alarm disappears
W601	linearisation ch1 curve not monotone	linearization not monotonously increasing	correct linearisation table
W611	less than 2 linearisation points for channel 1	number of entered linearization points < 2	correct linearisation table
W621	simulation ch. 1 on	simulation mode is active	switch off simulation mode
E641	no usable echo channel 1 check calibr.	echo lost due to application conditions of built up on antenna	check installation; clean antenna (cf. Operating Instructions)
E651	level in safety distance - risk of overspill	level in safety distance	alarm will disappear as soon as level leaves safety distance;
A671	linearisation ch1 not complete, not usable	linearisation table is in edit mode	activate linearisation table
W681	current ch1 out of range	current out of range (3,8 mA ... 21,5 mA)	check calibration and linearisation