Mechanical connection / Mounting instructions

- **Ensure that the mounting position of the turbidity meter guarantees that the fitting is always full with media.** Air or air bubbles are measured like turbidity.
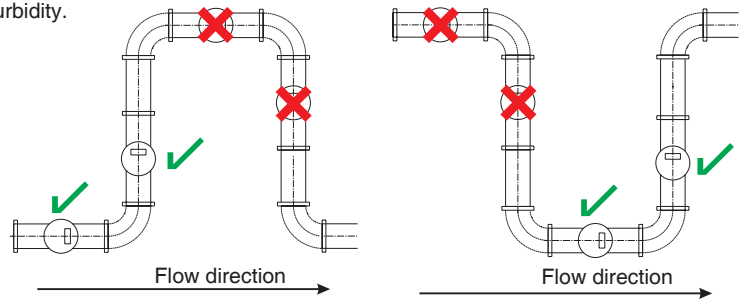
  Correct installation:
  • In or in front of ascending pipes!
  Wrong installation:
  • In or in front of descending pipes!
  • Into the highest point of a pipe. Air or air bubbles will concentrate there.

  Refer to drawings for examples.

Flow direction

Flow direction

Important Note: The bolts that secure the flanges to the center block are factory tightened to a specific torque setting and should not be loosened or tightened in the field!

Turning the display

1. Loosen the hex screws (1) in the rectangular stainless steel plate.
2. Turn the head to the desired position.
   Turning is possible only in steps of 90°!
3. Tighten the two hex screws.
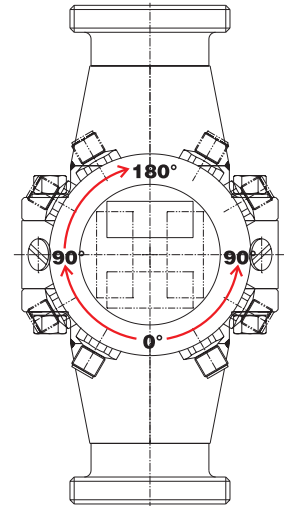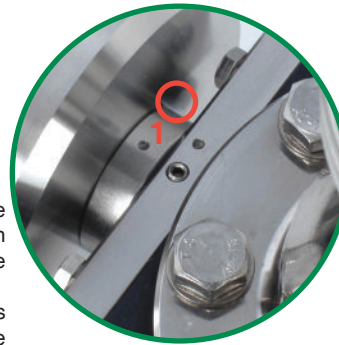
Measurement range selection

- The turbidity meter features 4 externally selectable ranges. The primary range (range 1) is preset to 0 – 1000 NTU, but that can be field programmed to any of the other 7 available ranges (see reverse for programming).
- The select any of the other 3 ranges (range 2, 3, or 4), it is necessary to provide a 24 Vdc signal as the input to one or more of the pins in the auxiliary M12 connector (the one on the right as you face the connectors). See the chart below for measurement range selection. If no voltage is supplied to any of the pins, range 1 will automatically be selected.
- Each of the optional ranges can also be set to any of the 8 available ranges, again, see reverse for programming instructions.

Measurement range selection

E1	E2	Range
0	0	1
1	0	2
0	1	3
1	1	4

The digital inputs E1 and E2 are DC decoupled to the power supply.
Reference ground: pin 9

0= 0 V DC; 1= 24 V DC

Electrical Connection

display measurement

display measurement unit

display measurement range

1100
NTU

ENTER-key

selection keys

Connecting Diagram ITM-4 / M12 with M12 plug-in

M12 plug-in left
power supply/ output 4-20mA

4(BK) - power supply
3(BU) - output
1(BN) +power supply
2(WH) +output
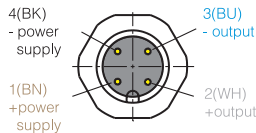
M12 plug-in right
switching output / control voltage

4(BK) nc
3(BU) 0V BCD-input
1(BN) E1 BCD-input
2(WH) E2 BCD-input
5(GY) switching output
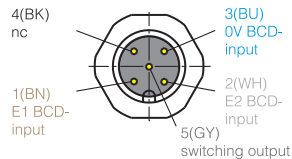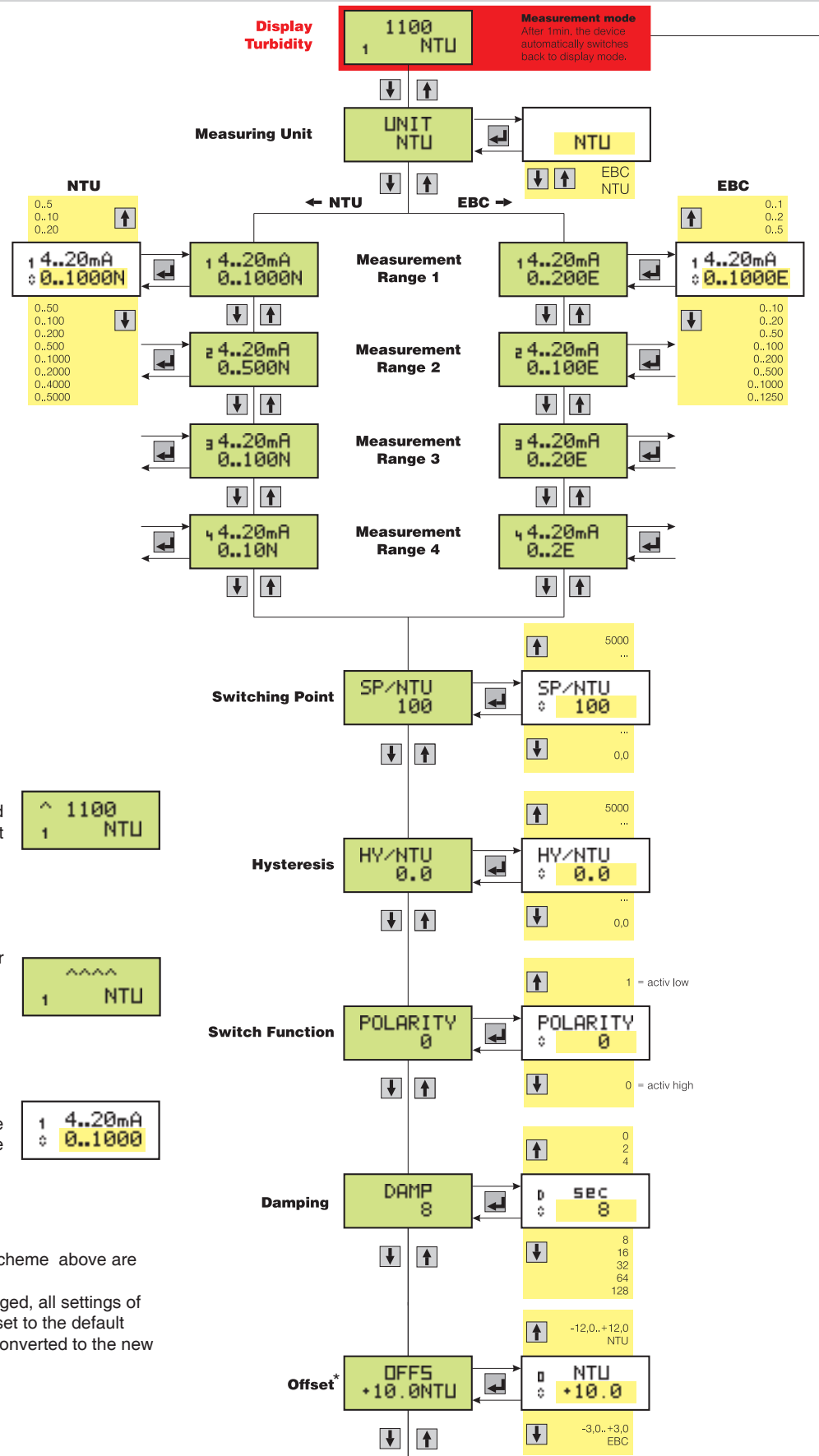
Note: Switching output

- If the output current is higher than the specified current (80mA) an electronic fuse switches off the output.
- To reset the switch output disconnect the output (or deactivate and activate the turbidity meter).

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Adjustment ITM-4

Display Turbidity

```
 1100
1    NTU
```

Measuring Unit

```
UNIT
NTU
```

```
NTU
```

EBC
NTU

← NTU   EBC →

NTU
0..5
0..10
0..20

```
1 4..20mA
↕ 0..1000N
```

```
1 4..20mA
0..1000N
```

Measurement Range 1

```
1 4..20mA
0..200E
```

```
1 4..20mA
↕ 0..1000E
```

EBC
0..1
0..2
0..5

0..50
0..100
0..200
0..500
0..1000
0..2000
0..4000
0..5000

```
2 4..20mA
0..500N
```

Measurement Range 2

```
2 4..20mA
0..100E
```

0..10
0..20
0..50
0..100
0..200
0..500
0..1000
0..1250

```
3 4..20mA
0..100N
```

Measurement Range 3

```
3 4..20mA
0..20E
```

```
4 4..20mA
0..10N
```

Measurement Range 4

```
4 4..20mA
0..2E
```

Switching Point

```
SP/NTU
100
```

```
SP/NTU
↕   100
```

5000
...
...
0,0

Hysteresis

```
HY/NTU
0.0
```
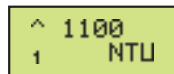
```
HY/NTU
↕   0.0
```

5000
...
...
0,0

Legend

^-Symbol
"current output overload":
will be displayed if the measured value is higher than the measurement range.
I_{out}: > 20mA (21,6mA max.)

```
^ 1100
1    NTU
```

^^^^ -Symbol
the current measured value is higher than 5000NTU resp. 1250EBC
I_{out}: > 20mA (21,6mA max.)

```
^^^^
1    NTU
```

Switch Function

```
POLARITY
0
```

```
POLARITY
↕    0
```

1 = activ low

0 = activ high

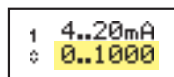**1 (left side above)**
current editable measurement range ↕ -Symbol the value in the margin is now editable by using the arrow-buttons

```
1 4..20mA
↕ 0..1000
```

Damping

```
DAMP
8
```

```
D   sec
↕    8
```

0
2
4

8
16
32
64
128

Default Settings
• The values in the adjustment scheme above are the default settings.
• If the engineering units are changed, all settings of the measurement ranges are reset to the default settings. The adjusted offset is converted to the new engineering units.

-12,0..+12,0
NTU

Offset*

```
OFFS
+10.0NTU
```

```
D   NTU
↕ +10.0
```

-3,0..+3,0
EBC

* Only adjust this as part of a complete calibration. Contact factory for instructions

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