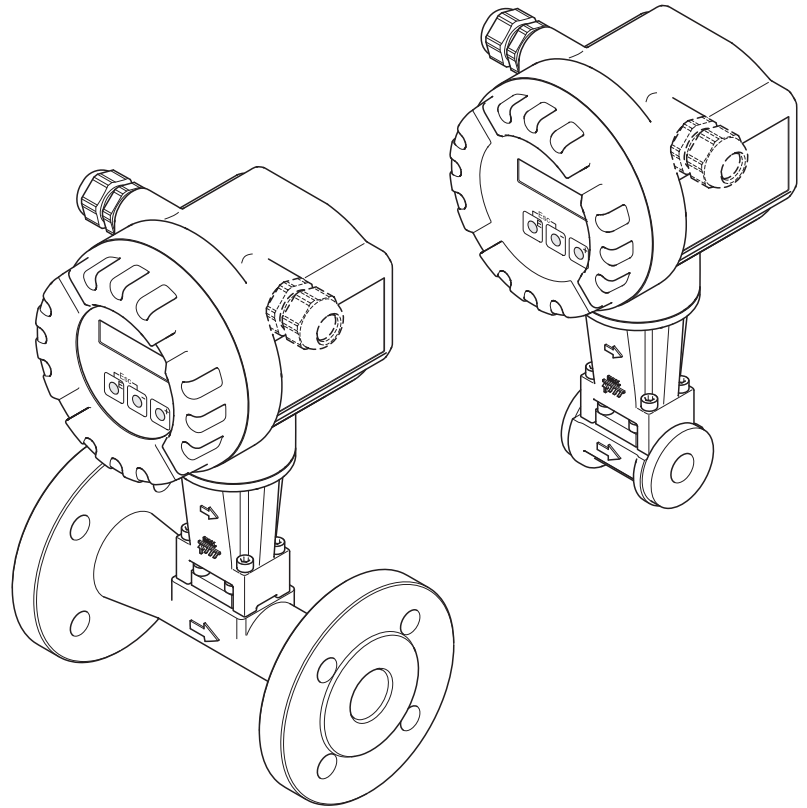


# ***Prowirl 70, 77*** ***Proline Prowirl 72 and 73*** **Vortex Flow Measuring System**

## **Instructions for Conversion**



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## Notes on conversion and ordering, Prowirl 72

You must read these notes on conversion and ordering before proceeding, because you must provide certain information when ordering.



### Selecting the conversion kit (see table):



Invariably, a distinction has to be drawn between conversion of a Prowirl 77W, 77F or 70H, 77H (to a Proline Prowirl 72) and the conversion of a Proline Prowirl 72 (compact version to remote version).

In order to convert a Prowirl 77W or 77F, you need the order code quoted on the nameplate of the transmitter so that you can select the correct conversion kit. A number of conversion kits are available; the distinguishing features are the temperature range and the seal. An asterisk (\*) in the order code quoted in the table indicates information that is not relevant with regard to selecting the conversion kit.

There is only one conversion kit for converting a Prowirl 70H or 77H respectively.

The differences between the kits for converting a Proline Prowirl 72 compact version to remote version are the cable lengths and the design of the cable gland.

Conversion options, Prowirl 77 / Proline Prowirl 72	Nameplate Transmitter	Order structure for conversion kit / comments
<ul style="list-style-type: none"> <li>Prowirl 70H compact version to Proline Prowirl 72 compact version → Use the Instructions for Conversion on page 25.</li> <li>Prowirl 70H remote version to Proline Prowirl 72 remote → Use the Instructions for Conversion on page 35.</li> </ul> <p> Note This conversion is not allowable for devices with FM or CSA approvals.</p>	70H***-*0***** A*** B C M	DK7UP-6A (currently not available)  The Proline Prowirl 72XXX transmitter has to be ordered separately.
<ul style="list-style-type: none"> <li>Prowirl 77W or 77F compact version (standard temperature) to Proline Prowirl 72 compact version → Use the Instructions for Conversion on Page 21.</li> <li>Prowirl 77W or 77F compact version (standard temperature) to Proline Prowirl 72 remote → Use the Instructions for Conversion on Page 30.</li> </ul>	77W***-*A0**A0* F          B2  C3 C3  D F6  E 7   F G M P Q	DK7UP-11  The Proline Prowirl 72XXX transmitter has to be ordered separately.
<ul style="list-style-type: none"> <li>Prowirl 77W or 77F K compact version (high/low temperature) to Proline Prowirl 72 compact version → Use the Instructions for Conversion on Page 25.</li> <li>Prowirl 77W or 77F K compact version (high/low temperature) to Proline Prowirl 72 remote → Use the Instructions for Conversion on Page 35.</li> </ul>	77W***-*A0**A1* F          B2  C3 C3  D F6  E 7   F G M P Q	DK7UP-1A (with graphite seal) DK7UP-1B (with Viton seal) DK7UP-1C (with Kalrez seal) DK7UP-1F (with Gylon seal)  The Proline Prowirl 72XXX transmitter has to be ordered separately.
<ul style="list-style-type: none"> <li>Prowirl 77H compact version (high pressure) to Proline Prowirl 72 compact version → Use the Instructions for Conversion on Page 25.</li> <li>Prowirl 77H compact version (high pressure) to Proline Prowirl 72 remote → Use the Instructions for Conversion on Page 35.</li> </ul>	77H***-**0**A** 2  C 3  D 6  E 7  F G M P Q	DK7UP-2A  The Proline Prowirl 72XXX transmitter has to be ordered separately.
<p> Note</p> <ul style="list-style-type: none"> <li>Invariably, devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC) must be converted by Endress+Hauser Flowtec.</li> <li>Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.</li> <li>Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.</li> <li>Reading out the parameters of the Prowirl 70H version is NOT described in this conversion instructions. For this reason this conversion including the programming of the device has to be done exclusively by the Endress and Hauser Service</li> </ul>		

Conversion options, Proline Prowirl 72	Nameplate Transmitter	Order structure for conversion kit / comments
<ul style="list-style-type: none"> <li>Proline Prowirl 72 compact version to Proline Prowirl 72 remote (non-Ex) → Use the Instructions for Conversion on Page 41.</li> </ul> <p> <b>Note</b> This conversion is also possible for measuring devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC).</p>	72 *** - ***** AA***** AJ	DK7UP-EA DK7UP-AB DK7UP-FA DK7UP-FB  it is not necessary to order a Proline Prowirl72XXX transmitter.
<ul style="list-style-type: none"> <li>Proline Prowirl 72 compact version to Proline Prowirl 72 remote (Ex-i (IS), Ex-d (XP)) → Use the Instructions for Conversion on Page 45.</li> </ul> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>Only Endress+Hauser Flowtec is permitted to perform this conversion on devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC).</li> <li>Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.</li> <li>Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.</li> </ul>	72 *** - ***** CA***** DJ H N P 1 2 3	The Proline Prowirl72XXX transmitter (including transmitter connection housing) has to be ordered separately.  72 *** - ***** CE***** DF H N P 1 2 3

## Parameters to be read out for conversion, Prowirl 77 to Prowirl 72

You must read out the principal parameters/settings in order to ensure that the device can continue to operate with the original basic configuration after conversion. Read out the parameters/settings listed in the table and re-use these values to commission the Proline Prowirl 72.

 Note

- You will find a complete list of all readable parameters and their settings in the Operating Instructions for the Prowirl 77 HART (BA032D/06/en).
- You will find more information on the functions of the Prowirl 72 in the section entitled "Description of device functions" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).

### Reading out parameters on the local display or the HART handheld and reading the nameplate:

Parameters, Prowirl 77					Parameters, Prowirl 72	
	Value to be read out	Local display	HART handheld	Value read out Value	Value to be entered	In parameter
1	Process temperature	Fu 64	Ave. process temp.		→	OPERATING TEMPERATURE
2	K-factor sensor	CALF	K-factor		→	K-FACTOR
3	Read the order code/serial number on the nameplate of the Prowirl 77. Check the order code/serial number against the tables on Page 8 ff. to identify the type of Meter Body Type (MB).				→	METER BODY TYPE MB
4	Expansion coefficient	Fu 63	Body expan. coeff.		→	TEMPERATURE COEFFICIENT
5	Amplifikation	Fu 65	Ampl. Gain	1 = 1 2 = 2 normal = 3 3 = 4	→	AMPLIFICATION
6	Application	APPL	Fluid	LI = Liquid GAS = Gas	→	APPLICATION
7	See explanatory notes on "Selecting the unit for flow" on Page 6				→	UNIT FLOW
	Flow unit	UNIT	FLOW UNIT			
8	Do not read out unless the UNIT or FLOW UNIT parameter = 15, see explanatory notes on "The "FACTOR ARBITRARY VOLUME UNIT" parameter" on Page 7				→	FACTOR ARBITRARY VOLUME UNIT
	User defined unit flow rate	Fu 12	Flow user unit			
9	See explanatory notes on "Selecting the unit for the totalizer" on Page 6				→	UNIT TOTALIZER
	Totalizer unit	Fu 11	Tot. unit			
10	Output signal	Fu 20	Not HART-compatible		→	Depends on the selection in the Prowirl 77: 4-20 → CURRENT RANGE PULSE → MODE (PULSE selected) PF → MODE (PFM selected)
<b>Current output</b>						
11	Full scale value	F 5	PV URV		→	VALUE 20 mA
12	Time-constant	Fu 22	PV Damping		→	TIME CONSTANT
13	Failsafe mode	Fu 23	AO Alarm type		→	FAILSAFE MODE
<b>Pulse output</b>						
14	Pulse value	PSCA	Not HART-compatible		→	PULSE VALUE
15	Pulse width	Fu 31	Not HART-compatible		→	PULSE WIDTH

### Commissioning the Proline Prowirl 72

Use the values noted in the table above for commissioning. Begin by entering the values you read out for parameters 1 to 6 or, as applicable, 7 (see "Selecting the unit for flow") directly into the corresponding parameters of the Prowirl 72.

Then start the Quick Setup routine of the Prowirl 72 and, when prompted, enter the parameter settings you read out beforehand.

### Selecting the unit for flow

You can read the unit used by the Prowirl 77 in numerical form only in the UNIT (local display) or FLOW UNIT (HART) parameter.

The table below lists the units in question and outlines the rest of the procedure for transfer to the FLOW UNIT parameter of the Prowirl 72:

Value, UNIT / FLOW UNIT	Unit, Prowirl 77		Unit Prowirl 72	Enter through:
0	dm <sup>3</sup> /s	→	dm <sup>3</sup> /s	Quick Setup
1	dm <sup>3</sup> /min	→	dm <sup>3</sup> /min	Quick Setup
2	dm <sup>3</sup> /h	→	dm <sup>3</sup> /h	Quick Setup
3	m <sup>3</sup> /s	→	m <sup>3</sup> /s	Quick Setup
4	m <sup>3</sup> /min	→	m <sup>3</sup> /min	Quick Setup
5	m <sup>3</sup> /h	→	m <sup>3</sup> /h	Quick Setup
6	ACFS	→	ft <sup>3</sup> /s	Quick Setup
7	ACFM	→	ft <sup>3</sup> /min	Quick Setup
8	ACFH	→	ft <sup>3</sup> /h	Quick Setup
9	IGPS	→	imp gal/s	Quick Setup
10	IGPM	→	imp gal/min	Quick Setup
11	IGPH	→	imp gal/h	Quick Setup
12	gps	→	gal/s	Quick Setup
13	gpm	→	gal/min	Quick Setup
14	gph	→	gal/h	Quick Setup
15	USER	→	See Page 7, explanatory remarks: The "FACTOR ARBITRARY VOLUME UNIT" parameter	

### Selecting the unit for the totalizer

You can read the unit used by the Prowirl 77 in numerical form only in the Fu 11 (local display) or Tot. unit (HART) parameter.

The table below lists the units in question and outlines the rest of the procedure for transfer to the TOTALIZER UNIT parameter of the Prowirl 72:

Value, UNIT / FLOW UNIT	Unit, Prowirl 77		Unit Prowirl 72	Enter through:
0	dm <sup>3</sup>	→	dm <sup>3</sup>	Quick Setup
1	m <sup>3</sup>	→	m <sup>3</sup>	Quick Setup
2	ACF	→	ft <sup>3</sup>	Quick Setup
3	lgallons	→	imp gal	Quick Setup
4	gallons	→	gal	Quick Setup
5	USER	→	Suitable unit	Quick Setup

### The "FACTOR ARBITRARY VOLUME UNIT" parameter

If the UNIT or FLOW UNIT parameter of the Prowirl 77 is set to a value of 15, flow is computed by application of a factor. This factor is based on 1 dm<sup>3</sup>/s and expresses the quantity of the units in question that equal one "dm<sup>3</sup>/s".

The factor is employed to calculate a customer-defined unit of mass or corrected volume.

The unit that the Prowirl 77 displays (for example, kg/h) is stated on the adhesive label affixed to the local display.

You have two options at your disposal for working with the same unit with the Prowirl 72:

#### 1. Operational density or operational and reference densities are known:

- The factor in the "Fu 12" or "Flow user unit" parameter of the Prowirl 77 does not have to be read out.
- Use Quick Setup for parameterization
- Go to the TYPE OF FLOW UNIT parameter and select CALCULATED MASS FLOW or CORRECTED VOLUME FLOW.
- When prompted to do so in Quick Setup, select the desired unit and enter the optional density or the operational and reference densities.



Caution!

The "Calculated mass flow" and "Corrected volume flow" unit types are calculated with fixed values (the OPERATIONAL DENSITY and REFERENCE DENSITY you entered). Consequently, do not select these two unit types unless the process conditions are known and are unchanging.

#### 2. Using the factor defined in the Prowirl 77:

- Read the setting of the "Fu 12" or "Flow user unit" parameter of the Prowirl 77.
- Use this factor and the unit used by the Prowirl 77 (see the label affixed to the local display) to calculate the factor for the FACTOR FREE VOLUME UNIT parameter of the Prowirl 72 as follows:  
Divide the factor you read out by 1 (for units per second, for example kg/s) or by 60 (for units per minute, e.g. kg/min) or by 3600 (for units per hour, e.g. kg/h).

Example:

The Prowirl 77 shows flow in kg/h.

The value of the "Fu 12" or "Flow user unit" parameter of the Prowirl 77 is 2.128<sup>-1</sup>.

$$2.128^{-1} : 3600 = 0.2128 : 3600 = 0.0059$$

- In the TYPE UNIT FLOW parameter, select → VOLUME FLOW.
- Enter the value calculated in this way (in this worked example 0.0059) as the setting for the FACTOR FREE VOLUME UNIT parameter.
- Enter the name of the unit (without the unit of time) as the setting for the TEXT FREE VOLUME UNIT parameter (in this worked example kg).
- In the UNIT FLOW → parameter, select the text of the free volume unit (in this worked example kg) and the desired unit of time (in this worked example h).

Flow as calculated with the factor you selected is shown on the local display in the unit you specified (e.g. 1.4359 kg/h).

**Ascertaining the type of Meter Body Type (MB)**

In order to ascertain the type of Meter Body Type (MB), you must be able to quote the order code or the nominal diameter (DN) and in some instances the pressure class (PN) of the Prowirl 77.

This information is on the nameplate of the measuring device.

Check the nameplate and use the information to read off the MB value from the appropriate table (for the wafer, flange or high-pressure type, as applicable):

- **Prowirl 77W (wafer):**

Nameplate, Prowirl 77W	DN	PN (connecting pipe)	MB
77WS15 – A*****	15 ½"	PN 10	→ 201
77WS15 – A*****	15 ½"	PN 16	→ 202
77WS15 – A*****	15 ½"	PN 25	→ 203
77WS15 – A*****	15 ½"	PN 40	→ 204
77WS15 – B*****	15 ½"	Cl. 150 Sch. 40	→ 205
77WS15 – B*****	15 ½"	Cl. 300 Sch. 40	→ 206
77WS15 – C*****	15 ½"	10 K Sch. 40	→ 207
77WS15 – C*****	15 ½"	20 K Sch. 40	→ 208
77WS25 – A*****	25 1"	PN 10	→ 209
77WS25 – A*****	25 1"	PN 16	→ 210
77WS25 – A*****	25 1"	PN 25	→ 211
77WS25 – A*****	25 1"	PN 40	→ 212
77WS25 – B*****	25 1"	Cl. 150 Sch. 40	→ 213
77WS25 – B*****	25 1"	Cl. 300 Sch. 40	→ 214
77WS25 – C*****	25 1"	10 K Sch. 40	→ 215
77WS25 – C*****	25 1"	20 K Sch. 40	→ 216
77WS40 – A*****	40 1½"	PN 10	→ 217
77WS40 – A*****	40 1½"	PN 16	→ 218
77WS40 – A*****	40 1½"	PN 25	→ 219
77WS40 – A*****	40 1½"	PN 40	→ 220
77WS40 – B*****	40 1½"	Cl. 150 Sch. 40	→ 221
77WS40 – B*****	40 1½"	Cl. 300 Sch. 40	→ 222
77WS40 – C*****	40 1½"	10 K Sch. 40	→ 223
77WS40 – C*****	40 1½"	20 K Sch. 40	→ 224
77WS50 – A*****	50 2"	PN 10	→ 225
77WS50 – A*****	50 2"	PN 16	→ 226
77WS50 – A*****	50 2"	PN 25	→ 227
77WS50 – A*****	50 2"	PN 40	→ 228
77WS50 – B*****	50 2"	Cl. 150 Sch. 40	→ 229
77WS50 – B*****	50 2"	Cl. 300 Sch. 40	→ 230
77WS50 – C*****	50 2"	10 K Sch. 40	→ 231
77WS50 – C*****	50 2"	20 K Sch. 40	→ 232
77WS80 – A*****	80 3"	PN 10	→ 233
77WS80 – A*****	80 3"	PN 16	→ 234
77WS80 – A*****	80 3"	PN 25	→ 235
77WS80 – A*****	80 3"	PN 40	→ 236
77WS80 – B*****	80 3"	Cl. 150 Sch. 40	→ 237
77WS80 – B*****	80 3"	Cl. 300 Sch. 40	→ 238
77WS80 – C*****	80 3"	10 K Sch. 40	→ 239
77WS80 – C*****	80 3"	20 K Sch. 40	→ 240
77WS1H – A*****	100 4"	PN 10	→ 241
77WS1H – A*****	100 4"	PN 16	→ 242
77WS1H – A*****	100 4"	PN 25	→ 243



Nameplate, Prowirl 77W	DN		PN (connecting pipe)		MB
77WS1H – A*****	100	4"	PN 40		→ 244
77WS1H – B*****	100	4"	Cl. 150	Sch. 40	→ 245
77WS1H – B*****	100	4"	Cl. 300	Sch. 40	→ 246
77WS1H – C*****	100	4"	10 K	Sch. 40	→ 247
77WS1H – C*****	100	4"	20 K	Sch. 40	→ 248
77WS1F – A*****	150	6"	PN 10		→ 249
77WS1F – A*****	150	6"	PN 16		→ 250
77WS1F – A*****	150	6"	PN 25		→ 251
77WS1F – A*****	150	6"	PN 40		→ 252
77WS1F – B*****	150	6"	Cl. 150	Sch. 40	→ 253
77WS1F – B*****	150	6"	Cl. 300	Sch. 40	→ 254
77WS1F – C*****	150	6"	10 K	Sch. 40	→ 255
77WS1F – C*****	150	6"	20 K	Sch. 40	→ 256

• Prowirl 77F (flange):

Nameplate, Prowirl 77F	DN		PN		MB
77FS15 – 4*****	15	½"	PN 40		→ 6
77FS15 – E*****	15	½"	PN 40		→ 6
77FS15 – G*****	15	½"	Cl. 150	Sch. 40	→ 10
77FS15 – H*****	15	½"	Cl. 150	Sch. 80	→ 11
77FS15 – J*****	15	½"	Cl. 300	Sch. 40	→ 12
77FS15 – K*****	15	½"	Cl. 300	Sch. 80	→ 13
77FS15 – Q*****	15	½"	10 K	Sch. 40	→ 16
77FS15 – R*****	15	½"	10 K	Sch. 80	→ 17
77FS15 – S*****	15	½"	20 K	Sch. 80	→ 19
77FS25 – 4*****	25	1"	PN 40		→ 26
77FS25 – E*****	25	1"	PN 40		→ 26
77FS25 – G*****	25	1"	Cl. 150	Sch. 40	→ 30
77FS25 – H*****	25	1"	Cl. 150	Sch. 80	→ 31
77FS25 – J*****	25	1"	Cl. 300	Sch. 40	→ 32
77FS25 – K*****	25	1"	Cl. 300	Sch. 80	→ 33
77FS25 – Q*****	25	1"	10 K	Sch. 80	→ 37
77FS25 – R*****	25	1"	20 K	Sch. 40	→ 38
77FS25 – S*****	25	1"	20 K	Sch. 80	→ 39
77FS40 – 4*****	40	1½"	PN 40		→ 46
77FS40 – E*****	40	1½"	PN 40		→ 46
77FS40 – G*****	40	1½"	Cl. 150	Sch. 40	→ 50
77FS40 – H*****	40	1½"	Cl. 150	Sch. 80	→ 51
77FS40 – J*****	40	1½"	Cl. 300	Sch. 40	→ 52
77FS40 – K*****	40	1½"	Cl. 300	Sch. 80	→ 53
77FS40 – Q*****	40	1½"	10 K	Sch. 80	→ 57
77FS40 – R*****	40	1½"	20 K	Sch. 40	→ 58
77FS40 – S*****	40	1½"	20 K	Sch. 80	→ 59
77FS50 – 4*****	50	2"	PN 40		→ 66
77FS50 – E*****	50	2"	PN 40		→ 66
77FS50 – G*****	50	2"	Cl. 150	Sch. 40	→ 70
77FS50 – H*****	50	2"	Cl. 150	Sch. 80	→ 71
77FS50 – J*****	50	2"	Cl. 300	Sch. 40	→ 72
77FS50 – K*****	50	2"	Cl. 300	Sch. 80	→ 73

Nameplate, Prowirl 77F	DN		PN			MB
77FS50 – P*****	50	2"	10 K	Sch. 40	→	76
77FS50 – Q*****	50	2"	10 K	Sch. 80	→	77
77FS50 – R*****	50	2"	20 K	Sch. 40	→	78
77FS50 – S*****	50	2"	20 K	Sch. 80	→	79
77FS80 – 4*****	80	3"	PN 40		→	86
77FS80 – E*****	80	3"	PN 40		→	86
77FS80 – G*****	80	3"	Cl. 150	Sch. 40	→	90
77FS80 – H*****	80	3"	Cl. 150	Sch. 80	→	91
77FS80 – J*****	80	3"	Cl. 300	Sch. 40	→	92
77FS80 – K*****	80	3"	Cl. 300	Sch. 80	→	93
77FS80 – P*****	80	3"	10 K	Sch. 40	→	96
77FS80 – Q*****	80	3"	10 K	Sch. 80	→	97
77FS80 – R*****	80	3"	20 K	Sch. 40	→	98
77FS80 – S*****	80	3"	20 K	Sch. 80	→	99
77FS1H – 3*****	100	4"	PN 16		→	103
77FS1H – 4*****	100	4"	PN 40		→	106
77FS1H – B*****	100	4"	PN 16		→	103
77FS1H – E*****	100	4"	PN 40		→	106
77FS1H – G*****	100	4"	Cl. 150	Sch. 40	→	110
77FS1H – H*****	100	4"	Cl. 150	Sch. 80	→	111
77FS1H – J*****	100	4"	Cl. 300	Sch. 40	→	112
77FS1H – K*****	100	4"	Cl. 300	Sch. 80	→	113
77FS1H – P*****	100	4"	10 K	Sch. 40	→	116
77FS1H – Q*****	100	4"	10 K	Sch. 80	→	117
77FS1H – R*****	100	4"	20 K	Sch. 40	→	118
77FS1H – S*****	100	4"	20 K	Sch. 80	→	119
77FS1F – 3*****	150	6"	PN 16		→	123
77FS1F – 4*****	150	6"	PN 40		→	126
77FS1F – B*****	150	6"	PN 16		→	123
77FS1F – E*****	150	6"	PN 40		→	126
77FS1F – G*****	150	6"	Cl. 150	Sch. 40	→	130
77FS1F – H*****	150	6"	Cl. 150	Sch. 80	→	131
77FS1F – J*****	150	6"	Cl. 300	Sch. 40	→	132
77FS1F – K*****	150	6"	Cl. 300	Sch. 80	→	133
77FS1F – P*****	150	6"	10 K	Sch. 40	→	136
77FS1F – Q*****	150	6"	10 K	Sch. 80	→	137
77FS1F – R*****	150	6"	20 K	Sch. 40	→	138
77FS1F – S*****	150	6"	20 K	Sch. 80	→	139
77FS2H – A*****	200	8"	PN 10		→	141
77FS2H – B*****	200	8"	PN 16		→	143
77FS2H – D*****	200	8"	PN 25		→	144
77FS2H – E*****	200	8"	PN 40		→	146
77FS2H – G*****	200	8"	Cl. 150	Sch. 40	→	150
77FS2H – J*****	200	8"	Cl. 300	Sch. 40	→	152
77FS2H – P*****	200	8"	10 K	Sch. 40	→	156
77FS2H – R*****	200	8"	20 K	Sch. 40	→	158
77FS2F – A*****	250	10"	PN 10		→	161
77FS2F – B*****	250	10"	PN 16		→	163
77FS2F – D*****	250	10"	PN 25		→	164
77FS2F – E*****	250	10"	PN 40		→	166

Nameplate, Prowirl 77F	DN		PN			MB
77FS2F – G*****	250	10"	Cl. 150	Sch. 40	→	170
77FS2F – J*****	250	10"	Cl. 300	Sch. 40	→	172
77FS2F – P*****	250	10"	10 K	Sch. 40	→	176
77FS2F – R*****	250	10"	20 K	Sch. 40	→	178
77FS3H – A*****	300	12"	PN 10		→	181
77FS3H – B*****	300	12"	PN 16		→	183
77FS3H – D*****	300	12"	PN 25		→	184
77FS3H – E*****	300	12"	PN 40		→	186
77FS3H – G*****	300	12"	Cl. 150	Sch. 40	→	190
77FS3H – J*****	300	12"	Cl. 300	Sch. 40	→	192
77FS3H – P*****	300	12"	10 K	Sch. 40	→	196
77FS3H – R*****	300	12"	20 K	Sch. 40	→	198

• Prowirl 77H (flange/high-pressure):

Nameplate, Prowirl 77H	DN		PN			MB
77HS15 – C*****	15	½"	PN 160		→	9
77HS15 – E*****	15	½"	Cl. 600		→	14
77HS15 – K*****	15	½"	40 K		→	20
77HS25 – B*****	25	1"	PN 100		→	28
77HS25 – C*****	25	1"	PN 160		→	29
77HS25 – E*****	25	1"	Cl. 600		→	34
77HS25 – K*****	25	1"	40 K		→	40
77HS40 – B*****	40	1½"	PN 100		→	48
77HS40 – C*****	40	1½"	PN 160		→	49
77HS40 – E*****	40	1½"	Cl. 600		→	54
77HS40 – K*****	40	1½"	40 K		→	60
77HS50 – A*****	50	2"	PN 64		→	67
77HS50 – B*****	50	2"	PN 100		→	68
77HS50 – C*****	50	2"	PN 160		→	69
77HS50 – E*****	50	2"	Cl. 600		→	74
77HS50 – K*****	50	2"	40 K		→	80
77HS80 – A*****	80	3"	PN 64		→	87
77HS80 – B*****	80	3"	PN 100		→	88
77HS80 – C*****	80	3"	PN 160		→	89
77HS80 – E*****	80	3"	Cl. 600		→	94
77HS80 – K*****	80	3"	40 K		→	100
77HS1H – A*****	100	4"	PN 64		→	107
77HS1H – B*****	100	4"	PN 100		→	108
77HS1H – C*****	100	4"	PN 160		→	109
77HS1H – E*****	100	4"	Cl. 600		→	114
77HS1H – K*****	100	4"	40 K		→	120
77HS1F – A*****	150	6"	PN 64		→	127
77HS1F – B*****	150	6"	PN 100		→	128
77HS1F – C*****	150	6"	PN 160		→	129
77HS1F – E*****	150	6"	Cl. 600		→	134
77HS1F – K*****	150	6"	40 K		→	140

## Notes on conversion and ordering, Prowirl 73

You must read these notes on conversion and ordering before proceeding, because you must provide certain information when ordering.

### Selecting the conversion kit (see table):

Invariably, a distinction has to be drawn between conversion of a Prowirl 77F (to a Proline Prowirl 73) and the conversion of a Proline Prowirl 73 (compact version to remote version).

In order to convert a Prowirl 77F, you need the order code quoted on the nameplate of the transmitter so that you can select the correct conversion kit. A number of conversion kits are available; the distinguishing features are the temperature range and the seal. An asterisk (\*) in the order code quoted in the table indicates information that is not relevant with regard to selecting the conversion kit.

The differences between the kits for converting a Proline Prowirl 73 compact version to remote version are the cable lengths and the design of the cable gland.

Conversion options, Prowirl 77 / Proline Prowirl 73	Nameplate Transmitter	Order structure for conversion kit / comments
<ul style="list-style-type: none"> <li>Prowirl 77F compact version to Proline Prowirl 73 compact version → Use the Instructions for Conversion on Page 25.</li> <li>Prowirl 77F compact version to Proline Prowirl 73 remote → Use the Instructions for Conversion on Page 35.</li> </ul>	77W***-A0**A1* F           B2    C C3    D F6    E 7    F G M P Q	DK7UP-4A (with graphite seal) DK7UP-4B (with Viton seal) DK7UP-4C (with Kalrez seal) DK7UP-4F (with Gylon seal)  The Proline Prowirl73XXX transmitter has to be ordered separately.
<ul style="list-style-type: none"> <li>Prowirl 77H compact version to Proline Prowirl 73 compact version → Use the Instructions for Conversion on Page 25.</li> <li>Prowirl 77H remote version to Proline Prowirl 73 remote → Use the Instructions for Conversion on Page 35.</li> </ul>	77H***-**0**A** 2    C 3    D 6    E 7    F G M P Q	DK7UP-7A (currently not available)  The Proline Prowirl 73XXX transmitter has to be ordered separately.



 Note

- Invariably, devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC) must be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

Conversion options, Proline Prowirl 72 / Proline Prowirl 73	Nameplate Transmitter	Order structure for conversion kit / comments
<ul style="list-style-type: none"> <li>Proline Prowirl 72 compact version to Proline Prowirl 73 compact version → Use the Instructions for Conversion on Page 45.</li> <li>Proline Prowirl 72 remote to Proline Prowirl 73 remote → Use the Instructions for Conversion on Page 45.</li> </ul>	72***-**0***** 1	DK7UP-AA (with graphite seal) DK7UP-AB (with Viton seal) DK7UP-AC (with Kalrez seal) DK7UP-AF (with Gylon seal)  The Proline Prowirl73XXX transmitter has to be ordered separately.
<ul style="list-style-type: none"> <li>Proline Prowirl 72 high pressure compact version to Proline Prowirl 73 high pressure compact version → Use the Instructions for Conversion on Page 50.</li> <li>Proline Prowirl 72 high pressure remote to Proline Prowirl 73 high pressure remote → Use the Instructions for Conversion on Page 55.</li> </ul>	72F***-**2A*****	DK7UP-7A (currently not available)  The Proline Prowirl 73XXX transmitter has to be ordered separately.

 Note

- Invariably, devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC) must be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

Conversion options, Proline Prowirl 73	Nameplate Transmitter	Order structure for conversion kit / comments
<ul style="list-style-type: none"> <li>Proline Prowirl 73 compact version to Proline Prowirl 73 remote (non-Ex) → Use the Instructions for Conversion on Page 41.</li> </ul> <p> <b>Note</b> This conversion is also possible for measuring devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC).</p>	73 *** _***** AA***** AJ	DK7UP-EA DK7UP-AB DK7UP-FA DK7UP-FB  It is not necessary to order a Proline Prowirl73XXX transmitter.
<ul style="list-style-type: none"> <li>Proline Prowirl 73 compact version version to Proline Prowirl 73 remote (Ex-i (IS), Ex-d (XP)) → Use the Instructions for Conversion on Page 45.</li> </ul> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>Only Endress+Hauser Flowtec is permitted to perform this conversion on devices ordered in compliance with the Pressure Equipment Directive (PED 97/23/EC).</li> <li>Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.</li> <li>Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only</li> </ul>	73 *** _***** CA***** DJ H N P 1 2 3	The Proline Prowirl73XXX transmitter (including transmitter connection housing) has to be ordered separately.  73 *** _***** CE***** DF H N P 1 2 3

## Parameters to be read out for conversion, Prowirl 77 to Prowirl 73

You must read out the principal parameters/settings in order to ensure that the device can continue to operate with the original basic configuration after conversion. Read out the parameters/settings listed in the table and re-use these values to commission the Proline Prowirl 73.

### Note

- You will find a complete list of all readable parameters and their settings in the Operating Instructions for the Prowirl 77 HART (BA032D/06/en).
- You will find more information on the functions of the Prowirl 73 in the section entitled "Description of device functions" in the Operating Instructions of the Prowirl 73 (BA00094D/06/EN).

### Reading out parameters on the local display or the HART handheld and reading the nameplate:

Parameters, Prowirl 77					Parameters, Prowirl 73	
	Value to be read out	Local display	HART handheld	Value read out Value	Value to be entered	In parameter
16	Calibration factor	CALF	K-factor		→	K-FACTOR
17	Read the order code/serial number on the nameplate of the Prowirl 77. Check the order code/serial number against the tables on Page 16 ff. to identify the type of Meter Body Type (MB).				→	METER BODY TYPE MB
18	Expansion coefficient	Fu 63	Body expan. coeff.		→	TEMPERATURE COEFFICIENT
19	Gain	Fu 65	Ampl. Gain	1 = 1 2 = 2 normal = 3 3 = 4	→	AMPLIFICATION
20	Fluid / application	APPL	Fluid	LI = Liquid GAS = Gas	→	SELECT FLUID You can use this function to select the fluid directly.
21	Unit of flow	UNIT	FLOW UNIT	See explanatory notes on "Selecting the unit for flow" on Page 15	→	UNIT VOLUME FLOW or UNIT MASS FLOW or UNIT CORRECTED VOLUME FLOW
22	Unit of the totalizer	Fu 11	Tot. unit	See explanatory notes on "Selecting the unit for the totalizer" on Page 15	→	UNIT TOTALIZER 1 UNIT TOTALIZER 2
23	Output signal	Fu 20	Not HART-compatible		→	Depends on the selection in the Prowirl 77: 4-20 → CURRENT RANGE PULSE → MODE (PULSE selected) PF → MODE (PFM selected)
<b>Current output</b>						
24	Full scale value / value 20 mA	F 5	PV URV		→	VALUE 20 mA
25	Time-constant current output	Fu 22	PV Damping		→	TIME CONSTANT
26	Error response, current output	Fu 23	AO Alarm		→	FAILSAFE MODE
<b>Pulse output</b>						
27	Pulse value	PSCA	Not HART-compatible		→	PULSE VALUE
28	Pulse width	Fu 31	Not HART-compatible		→	PULSE WIDTH

**Commissioning the Proline Prowirl 73**

Use the values noted in the table for commissioning. Begin by entering the values you read out for parameters 1 to 4 directly into the corresponding parameters of the Prowirl 73.

Then start the Quick Setup routine of the Prowirl 73 and, when prompted, enter the parameter settings you read out beforehand.

**Selecting the unit for flow**

You can read the unit used by the Prowirl 77 in numerical form only in the UNIT (local display) or FLOW UNIT (HART) parameter.

The table below lists the units in question and outlines the rest of the procedure for transfer to the corresponding parameters of the Prowirl 73:

Value, UNIT / FLOW UNIT	Unit, Prowirl 77		Unit Prowirl 73	Enter through:
0	dm <sup>3</sup> /s	→	dm <sup>3</sup> /s	Quick Setup
1	dm <sup>3</sup> /min	→	dm <sup>3</sup> /min	Quick Setup
2	dm <sup>3</sup> /h	→	dm <sup>3</sup> /h	Quick Setup
3	m <sup>3</sup> /s	→	m <sup>3</sup> /s	Quick Setup
4	m <sup>3</sup> /min	→	m <sup>3</sup> /min	Quick Setup
5	m <sup>3</sup> /h	→	m <sup>3</sup> /h	Quick Setup
6	ACFS	→	ft <sup>3</sup> /s	Quick Setup
7	ACFM	→	ft <sup>3</sup> /min	Quick Setup
8	ACFH	→	ft <sup>3</sup> /h	Quick Setup
9	IGPS	→	imp gal/s	Quick Setup
10	IGPM	→	imp gal/min	Quick Setup
11	IGPH	→	imp gal/h	Quick Setup
12	gps	→	gal/s	Quick Setup
13	gpm	→	gal/min	Quick Setup
14	gph	→	gal/h	Quick Setup
15	USER (use the unit as stated on the "Units" label on the meter)	→	depending on unit from the "Units" label: UNIT VOL. FLOW or UNIT MASS FLOW or UNIT CORRECTED VOL. FLOW	Quick Setup

**Selecting the unit for the totalizer**

You can read the unit used by the Prowirl 77 in numerical form only in the Fu 11 (local display) or Tot. unit (HART) parameter.

The table below lists the units in question and outlines the rest of the procedure for transfer to the TOTALIZER UNIT parameter of the Prowirl 73:

Value, UNIT / FLOW UNIT	Unit, Prowirl 77		Unit Prowirl 72	Enter through:
0	dm <sup>3</sup>	→	dm <sup>3</sup>	Quick Setup
1	m <sup>3</sup>	→	m <sup>3</sup>	Quick Setup
2	ACF	→	ft <sup>3</sup>	Quick Setup
3	lgallons	→	imp gal	Quick Setup
4	gallons	→	gal	Quick Setup
5	USER	→	Suitable unit	Quick Setup

**Ascertaining the type of Meter Body Type (MB)**

In order to ascertain the type of Meter Body Type (MB), you must be able to quote the order code or the nominal diameter (DN) and in some instances the pressure class (PN) of the Prowirl 77.

This information is on the nameplate of the measuring device.

Check the nameplate and use the information to read off the MB value from the appropriate table (for the wafer or flange version, as applicable):

**• Prowirl 77W (wafer):**

Nameplate, Prowirl 77W	DN	PN (connecting pipe)	MB
77WS15 – A*****	15 ½"	PN 10	→ 201
77WS15 – A*****	15 ½"	PN 16	→ 202
77WS15 – A*****	15 ½"	PN 25	→ 203
77WS15 – A*****	15 ½"	PN 40	→ 204
77WS15 – B*****	15 ½"	Cl. 150 Sch. 40	→ 205
77WS15 – B*****	15 ½"	Cl. 300 Sch. 40	→ 206
77WS15 – C*****	15 ½"	10 K Sch. 40	→ 207
77WS15 – C*****	15 ½"	20 K Sch. 40	→ 208
77WS25 – A*****	25 1"	PN 10	→ 209
77WS25 – A*****	25 1"	PN 16	→ 210
77WS25 – A*****	25 1"	PN 25	→ 211
77WS25 – A*****	25 1"	PN 40	→ 212
77WS25 – B*****	25 1"	Cl. 150 Sch. 40	→ 213
77WS25 – B*****	25 1"	Cl. 300 Sch. 40	→ 214
77WS25 – C*****	25 1"	10 K Sch. 40	→ 215
77WS25 – C*****	25 1"	20 K Sch. 40	→ 216
77WS40 – A*****	40 1½"	PN 10	→ 217
77WS40 – A*****	40 1½"	PN 16	→ 218
77WS40 – A*****	40 1½"	PN 25	→ 219
77WS40 – A*****	40 1½"	PN 40	→ 220
77WS40 – B*****	40 1½"	Cl. 150 Sch. 40	→ 221
77WS40 – B*****	40 1½"	Cl. 300 Sch. 40	→ 222
77WS40 – C*****	40 1½"	10 K Sch. 40	→ 223
77WS40 – C*****	40 1½"	20 K Sch. 40	→ 224
77WS50 – A*****	50 2"	PN 10	→ 225
77WS50 – A*****	50 2"	PN 16	→ 226
77WS50 – A*****	50 2"	PN 25	→ 227
77WS50 – A*****	50 2"	PN 40	→ 228
77WS50 – B*****	50 2"	Cl. 150 Sch. 40	→ 229
77WS50 – B*****	50 2"	Cl. 300 Sch. 40	→ 230
77WS50 – C*****	50 2"	10 K Sch. 40	→ 231
77WS50 – C*****	50 2"	20 K Sch. 40	→ 232
77WS80 – A*****	80 3"	PN 10	→ 233
77WS80 – A*****	80 3"	PN 16	→ 234
77WS80 – A*****	80 3"	PN 25	→ 235
77WS80 – A*****	80 3"	PN 40	→ 236
77WS80 – B*****	80 3"	Cl. 150 Sch. 40	→ 237
77WS80 – B*****	80 3"	Cl. 300 Sch. 40	→ 238
77WS80 – C*****	80 3"	10 K Sch. 40	→ 239
77WS80 – C*****	80 3"	20 K Sch. 40	→ 240
77WS1H – A*****	100 4"	PN 10	→ 241
77WS1H – A*****	100 4"	PN 16	→ 242
77WS1H – A*****	100 4"	PN 25	→ 243
77WS1H – A*****	100 4"	PN 40	→ 244
77WS1H – B*****	100 4"	Cl. 150 Sch. 40	→ 245
77WS1H – B*****	100 4"	Cl. 300 Sch. 40	→ 246



Nameplate, Prowirl 77W	DN		PN (connecting pipe)		→	MB
77WS1H – C*****	100	4"	10 K	Sch. 40	→	247
77WS1H – C*****	100	4"	20 K	Sch. 40	→	248
77WS1F – A*****	150	6"	PN 10		→	249
77WS1F – A*****	150	6"	PN 16		→	250
77WS1F – A*****	150	6"	PN 25		→	251
77WS1F – A*****	150	6"	PN 40		→	252
77WS1F – B*****	150	6"	Cl. 150	Sch. 40	→	253
77WS1F – B*****	150	6"	Cl. 300	Sch. 40	→	254
77WS1F – C*****	150	6"	10 K	Sch. 40	→	255
77WS1F – C*****	150	6"	20 K	Sch. 40	→	256

• Prowirl 77F:

Nameplate, Prowirl 77F	DN		PN		→	MB
77FS15 – 4*****	15	½"	PN 40		→	6
77FS15 – E*****	15	½"	PN 40		→	6
77FS15 – G*****	15	½"	Cl. 150	Sch. 40	→	10
77FS15 – H*****	15	½"	Cl. 150	Sch. 80	→	11
77FS15 – J*****	15	½"	Cl. 300	Sch. 40	→	12
77FS15 – K*****	15	½"	Cl. 300	Sch. 80	→	13
77FS15 – Q*****	15	½"	10 K	Sch. 40	→	16
77FS15 – R*****	15	½"	10 K	Sch. 80	→	17
77FS15 – S*****	15	½"	20 K	Sch. 80	→	19
77FS25 – 4*****	25	1"	PN 40		→	26
77FS25 – E*****	25	1"	PN 40		→	26
77FS25 – G*****	25	1"	Cl. 150	Sch. 40	→	30
77FS25 – H*****	25	1"	Cl. 150	Sch. 80	→	31
77FS25 – J*****	25	1"	Cl. 300	Sch. 40	→	32
77FS25 – K*****	25	1"	Cl. 300	Sch. 80	→	33
77FS25 – Q*****	25	1"	10 K	Sch. 80	→	37
77FS25 – R*****	25	1"	20 K	Sch. 40	→	38
77FS25 – S*****	25	1"	20 K	Sch. 80	→	39
77FS40 – 4*****	40	1½"	PN 40		→	46
77FS40 – E*****	40	1½"	PN 40		→	46
77FS40 – G*****	40	1½"	Cl. 150	Sch. 40	→	50
77FS40 – H*****	40	1½"	Cl. 150	Sch. 80	→	51
77FS40 – J*****	40	1½"	Cl. 300	Sch. 40	→	52
77FS40 – K*****	40	1½"	Cl. 300	Sch. 80	→	53
77FS40 – Q*****	40	1½"	10 K	Sch. 80	→	57
77FS40 – R*****	40	1½"	20 K	Sch. 40	→	58
77FS40 – S*****	40	1½"	20 K	Sch. 80	→	59
77FS50 – 4*****	50	2"	PN 40		→	66
77FS50 – E*****	50	2"	PN 40		→	66
77FS50 – G*****	50	2"	Cl. 150	Sch. 40	→	70
77FS50 – H*****	50	2"	Cl. 150	Sch. 80	→	71
77FS50 – J*****	50	2"	Cl. 300	Sch. 40	→	72
77FS50 – K*****	50	2"	Cl. 300	Sch. 80	→	73
77FS50 – P*****	50	2"	10 K	Sch. 40	→	76
77FS50 – Q*****	50	2"	10 K	Sch. 80	→	77
77FS50 – R*****	50	2"	20 K	Sch. 40	→	78
77FS50 – S*****	50	2"	20 K	Sch. 80	→	79
77FS80 – 4*****	80	3"	PN 40		→	86
77FS80 – E*****	80	3"	PN 40		→	86
77FS80 – G*****	80	3"	Cl. 150	Sch. 40	→	90
77FS80 – H*****	80	3"	Cl. 150	Sch. 80	→	91

Nameplate, Prowirl 77F	DN		PN		MB
77FS80 – J*****	80	3"	Cl. 300	Sch. 40	→ 92
77FS80 – K*****	80	3"	Cl. 300	Sch. 80	→ 93
77FS80 – P*****	80	3"	10 K	Sch. 40	→ 96
77FS80 – Q*****	80	3"	10 K	Sch. 80	→ 97
77FS80 – R*****	80	3"	20 K	Sch. 40	→ 98
77FS80 – S*****	80	3"	20 K	Sch. 80	→ 99
77FS1H – 3*****	100	4"	PN 16		→ 103
77FS1H – 4*****	100	4"	PN 40		→ 106
77FS1H – B*****	100	4"	PN 16		→ 103
77FS1H – E*****	100	4"	PN 40		→ 106
77FS1H – G*****	100	4"	Cl. 150	Sch. 40	→ 110
77FS1H – H*****	100	4"	Cl. 150	Sch. 80	→ 111
77FS1H – J*****	100	4"	Cl. 300	Sch. 40	→ 112
77FS1H – K*****	100	4"	Cl. 300	Sch. 80	→ 113
77FS1H – P*****	100	4"	10 K	Sch. 40	→ 116
77FS1H – Q*****	100	4"	10 K	Sch. 80	→ 117
77FS1H – R*****	100	4"	20 K	Sch. 40	→ 118
77FS1H – S*****	100	4"	20 K	Sch. 80	→ 119
77FS1F – 3*****	150	6"	PN 16		→ 123
77FS1F – 4*****	150	6"	PN 40		→ 126
77FS1F – B*****	150	6"	PN 16		→ 123
77FS1F – E*****	150	6"	PN 40		→ 126
77FS1F – G*****	150	6"	Cl. 150	Sch. 40	→ 130
77FS1F – H*****	150	6"	Cl. 150	Sch. 80	→ 131
77FS1F – J*****	150	6"	Cl. 300	Sch. 40	→ 132
77FS1F – K*****	150	6"	Cl. 300	Sch. 80	→ 133
77FS1F – P*****	150	6"	10 K	Sch. 40	→ 136
77FS1F – Q*****	150	6"	10 K	Sch. 80	→ 137
77FS1F – R*****	150	6"	20 K	Sch. 40	→ 138
77FS1F – S*****	150	6"	20 K	Sch. 80	→ 139
77FS2H – A*****	200	8"	PN 10		→ 141
77FS2H – B*****	200	8"	PN 16		→ 143
77FS2H – D*****	200	8"	PN 25		→ 144
77FS2H – E*****	200	8"	PN 40		→ 146
77FS2H – G*****	200	8"	Cl. 150	Sch. 40	→ 150
77FS2H – J*****	200	8"	Cl. 300	Sch. 40	→ 152
77FS2H – P*****	200	8"	10 K	Sch. 40	→ 156
77FS2H – R*****	200	8"	20 K	Sch. 40	→ 158
77FS2F – A*****	250	10"	PN 10		→ 161
77FS2F – B*****	250	10"	PN 16		→ 163
77FS2F – D*****	250	10"	PN 25		→ 164
77FS2F – E*****	250	10"	PN 40		→ 166
77FS2F – G*****	250	10"	Cl. 150	Sch. 40	→ 170
77FS2F – J*****	250	10"	Cl. 300	Sch. 40	→ 172
77FS2F – P*****	250	10"	10 K	Sch. 40	→ 176
77FS2F – R*****	250	10"	20 K	Sch. 40	→ 178
77FS3H – A*****	300	12"	PN 10		→ 181
77FS3H – B*****	300	12"	PN 16		→ 183
77FS3H – D*****	300	12"	PN 25		→ 184
77FS3H – E*****	300	12"	PN 40		→ 186
77FS3H – G*****	300	12"	Cl. 150	Sch. 40	→ 190
77FS3H – J*****	300	12"	Cl. 300	Sch. 40	→ 192
77FS3H – P*****	300	12"	10 K	Sch. 40	→ 196
77FS3H – R*****	300	12"	20 K	Sch. 40	→ 198

## Prowirl 72 parameters to be read out for conversion to Prowirl 73

You must read out the principal parameters/settings in order to ensure that the device can continue to operate with the original basic configuration after conversion. Read out the parameters/settings listed in the table and re-use these values to commission the Proline Prowirl 73.

 Note

- You will find a complete list of all the parameters that can be read out, along with the parameter settings, in the section entitled "Description of device functions" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).
- You will find more information on the functions of the Prowirl 73 in the section entitled "Description of device functions" in the Operating Instructions of the Prowirl 73 (BA00094D/06/EN).

### Reading out parameters using the local display:

Parameters, Prowirl 72 Read out in function:		Parameters, Prowirl 73	
		Value	Enter in function:
1	K-FACTOR	→	K-FACTOR
2	METER BODY TYPE MB	→	METER BODY TYPE MB
3	TEMPERATURE COEFFICIENT	→	TEMPERATURE COEFFICIENT
4	AMPLIFICATION	→	AMPLIFICATION
5	APPLICATION	→	SELECT FLUID You can use this function to select the fluid directly.
6	UNIT FLOW	→	UNIT VOLUME FLOW or UNIT MASS FLOW or UNIT CORRECTED VOL. FLOW
7	UNIT TOTALIZER	→	UNIT TOTALIZER 1 UNIT TOTALIZER 2
<b>Current output</b>			
8	MEASURING UNIT TYPE*	→	ASSIGN CURRENT
9	CURRENT RANGE	→	CURRENT RANGE
10	VALUE 20 mA	→	VALUE 20 mA
11	TIME CONSTANT	→	TIME CONSTANT
12	FAILSAFE MODE	→	FAILSAFE MODE
<b>Pulse/status output</b>			
13	OPERATING MODE	→	OPERATING MODE
<b>Operating mode = PULSE</b>			
14	MEASURING UNIT TYPE*	→	ASSIGN PULSE
15	PULSE VALUE	→	PULSE VALUE
16	PULSE WIDTH	→	PULSE WIDTH
17	OUTPUT SIGNAL	→	OUTPUT SIGNAL
18	FAILSAFE MODE	→	FAILSAFE MODE
<b>Operating mode = Status</b>			
19	MEASURING UNIT TYPE*	→	ASSIGN STATUS
20	SWITCH-ON POINT	→	SWITCH-ON POINT
21	SWITCH-OFF POINT	→	SWITCH-OFF POINT
22	OUTPUT SIGNAL	→	OUTPUT SIGNAL
23	TIME CONSTANT	→	TIME CONSTANT
24	FAILSAFE MODE	→	FAILSAFE MODE

\* Group SYSTEM PARAMETER

## Documentation to be used

All documentation of the meter to be converted and the new meter is applicable, in addition to the documentation specific to the actual conversion (depends on the particular conversion). The document numbers listed below (e.g. BA032D/06/en) are always printed in the top left corner of the title page.

### **Prowirl 77:**

- Operating Instruction:
  - BA032D/06/en
- Ex documentation:
  - ATEX II 2G = XA017D/06/a3
  - ATEX II 3G / Zone 2 = XA018D/06/a3
  - CENELEC = EX014D/06/en
  - SEV = EX015D/06/c2
  - FM = EX016D/06/a2
  - CSA = EX017D/06/a2

### **Proline Prowirl 72, 73:**

- Operating Instruction:
  - Prowirl 72 = BA00084D/06/EN
  - Prowirl 73 = BA00094D/06/EN

### **Proline Prowirl 72, 73 PROFIBUS-PA:**

- Operating Instruction:
  - Prowirl 72 = BA00085D/06/EN
  - Prowirl 73 = BA00093D/06/EN

### **Proline Prowirl 72, 73 FOUNDATION Fieldbus:**

- Operating Instruction:
  - Prowirl 72 = BA095D/06/en
  - Prowirl 73 = BA096D/06/en

### **Proline Prowirl 72, 73 Ex documentation:**

- ATEX II2G & II1/2 G & II1/2GDII & II1G (Ex-d (XP) version) = XA00092D/06/A3
- ATEX II2G & II1/2 G & II1/2GDII & II1G (Ex-i (IS) version) = XA00093D/06/A3
- ATEX II3G = XA094D/06/a3
- FM/CSA (Ex-d (XP) version) = XA095D/06/en
- FM/CSA (Ex-i (IS) version) = XA096D/06/en

## Instructions for Conversion: Prowirl 77W, 77F compact version (standard temperature) to Proline Prowirl 72 compact version

### Note!

See Page 3 for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 72 transmitter	1	Nameplate for transmitter
1	Preamplifier	1	Form for archives
1	Housing neck including O-rings	1	Instructions for Conversion
4	Screws for housing neck		

### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for the Proline Prowirl 72 is valid for the converted device.

### Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

## 1. Making a backup of the device data



### Caution!

Once you have completed conversion, you need the device parameters of the Prowirl 77 transmitter for commissioning. Without these values you would not be able to have the Prowirl 72 device in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 77 (see Page 5 ff.).

## 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 77.

Sensorrelevante Daten:		Sensor relevant data:		
TM:	-40...+260°C	<input type="checkbox"/>	-200...+400°C	<input type="checkbox"/>
	other:			<input type="checkbox"/>
Materials:	CF3M (1.4404) / 316L (1.4435)			<input type="checkbox"/>
	other:			<input type="checkbox"/>
Gasket:	Graphite	<input type="checkbox"/>	Gylon	<input type="checkbox"/>
	Viton	<input type="checkbox"/>	Kalrez	<input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

## 3. Removing the connecting cable

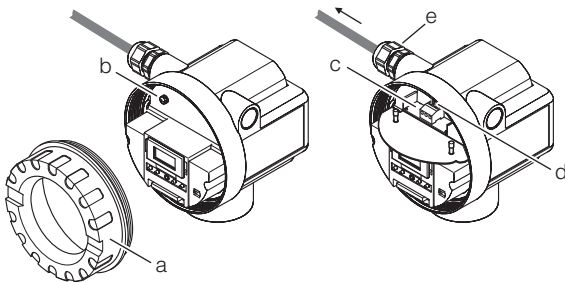


### Caution!

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

### Non-Ex / Ex-i (IS) version (Fig. 2)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Slacken the two screws of the cover (b) of the connection compartment and open the bottom-hinged cover.
- 3. Disconnect the connections from the terminal block (c) and the earthing terminal (d) of the earthing cable (if installed).
- 4. Open the threaded element of the cable entry (e).
- 5. Carefully pull the connecting cable out of the transmitter housing.

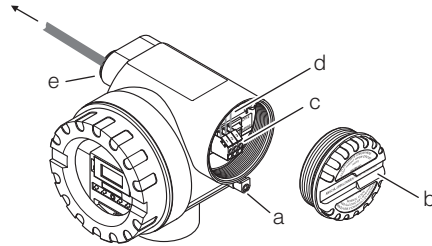


UA017\_001

Fig. 2: Removing the connecting cable, non-Ex / Ex-i (IS) version  
 a = Cover of electronics compartment  
 b = Threaded fastener of cover for connection compartment  
 c = Terminal block  
 d = Terminal for earthing cable  
 e = Cable entry

### Ex-d (XP) version (Fig. 3)

- 1. Switch off the power supply to the device.
- 2. Warning!  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Disconnect the connections from the terminal block (c) and the earthing terminal (d) of the earthing cable (if installed).
- 6. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 7. Carefully pull the connecting cable out of the transmitter housing.

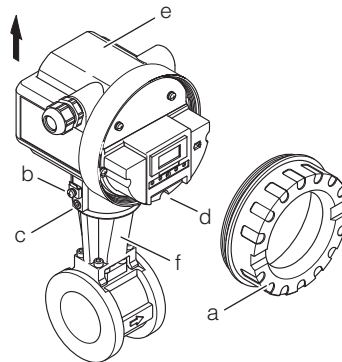


UA017\_002

Fig. 3: Removing the connecting cable, Ex-d version  
 a = Clamp securing the cover of the connection compartment  
 b = Cover of connection compartment  
 c = Terminals  
 d = Terminal for earthing cable  
 e = Cable entry

## 4. Removing the transmitter housing (Fig. 4)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Remove the earthing cable (b), if installed.
- 3. Remove the outer screw (c) securing the transmitter housing.
- 4. Remove the inner screw (d) securing the transmitter housing.
- 5. Pull the transmitter housing (e) off the housing neck (f).



UA017\_003

Fig. 4: Removing the transmitter housing  
 a = Cover of electronics compartment  
 b = Threaded fastener of earthing cable  
 c = Outer securing screw for transmitter housing  
 d = Inner securing screw for transmitter housing  
 e = Transmitter housing  
 f = Housing neck

## 5. Replacing the housing neck and installing the new preamplifier (Fig. 5)



### Caution!

When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

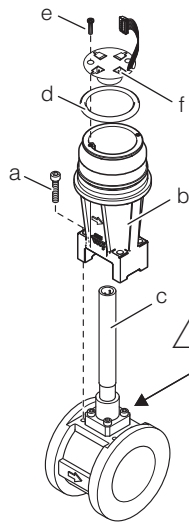
- ❑ 1. Remove the four screws (a) securing the housing neck (b).
  - ⚠ Warning! Risk of fatal injury:  
Do not, under any circumstances, slacken the screws securing the sensor.
- ❑ 2. Carefully disengage the housing neck (b) from the sensor (c).
- ❑ 3. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.
- ❑ 4. Tighten the four screws (a) securing the housing neck (b). Tightening torque = 5.8 Nm; tighten in diagonally opposite sequence in three uniform steps
- ❑ 5. Coat the O-ring (d) with silicone grease (the O-ring is fitted to the housing neck).
- ❑ 6. Slip the preamplifier (f) into the housing neck (b).



### Note!

The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.

- ❑ 7. Tighten the two securing screws (e) to secure the preamplifier (f).



Warning!  
**Danger of life!**  
**Don't** loosen the sensor screws!

Fig. 5: Replacing the housing neck / installing the preamplifier

- a = Threaded fastener of housing neck
- b = Housing neck
- c = Sensor
- d = O-ring of housing neck (fitted)
- e = Threaded fastener of preamplifier
- f = Preamplifier

## 6. Installing the new transmitter (Fig. 6)

- ❑ 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- ❑ 2. Pull the local display module (b) off the retaining rails (c).
- ❑ 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- ❑ 4. Open the top-hinged plastic cover (d).
- ❑ 5. Remove the inner screw (h) securing the transmitter.

- ❑ 6. From below, guide the connecting cable (e) through the transmitter housing and set the transmitter housing on the housing neck (f).



### Note!

The end of the connecting cable emerges from the transmitter housing underneath the holder for the electronics.

- ❑ 7. Tighten the inner screw (h) securing the transmitter housing.
- ❑ 8. Tighten the outer screw securing the transmitter housing (see Page 22, Fig. 4, c).
- ❑ 9. Connect the connecting cable (e) to the plug (g) of the amplifier board.
- ❑ 10. Secure the connecting cable to the retainer below the connecting-cable plug (g).
- ❑ 11. Close the top-hinged plastic cover (d).
- ❑ 12. Affix the new nameplate (Page 22) to the outside of the cover of the connection compartment (i).

### Steps 13 and 14 are required only in the case of the Ex-d (XP) versions:

- ❑ 13. Clip the local display module (b) into the retaining rails (c).
- ❑ 14. Screw the cover of the electronics compartment (a) onto the amplifier housing.

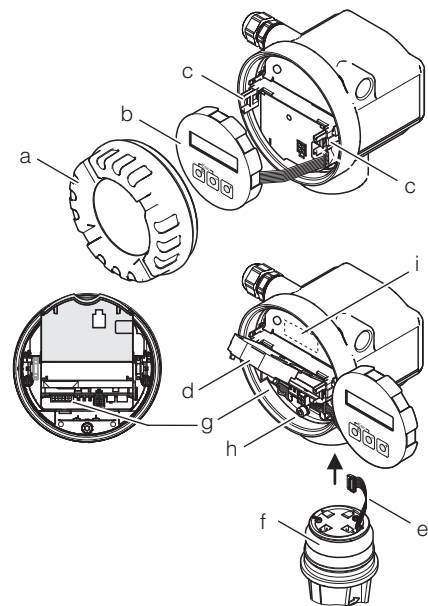
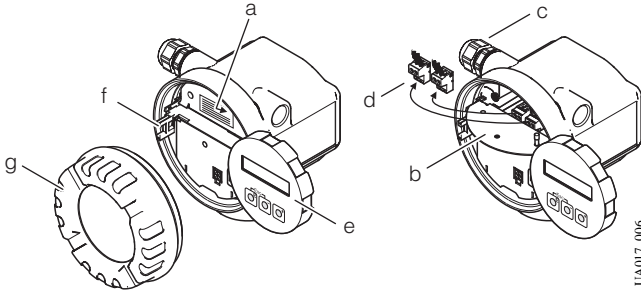


Fig. 6: Installing the transmitter

- a = Cover of electronics compartment
- b = Local display module
- c = Retaining rails
- d = Plastic cover
- e = Connecting cable, preamplifier/measuring-amplifier board
- f = Housing neck
- g = Plug for connecting cable on measuring-amplifier board
- h = Inner securing screw
- i = New nameplate on cover of connection compartment

## 7. Wiring the transmitter

### Non-Ex, Ex-i (IS) version (Fig. 8 and Fig. 7)

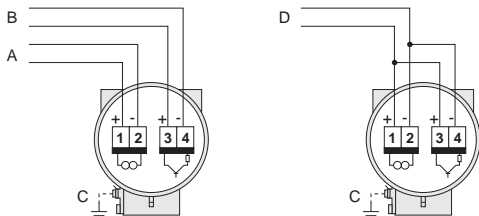


UA017\_006

Fig. 7: Non-Ex / Ex-i (IS) version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- ❑ 1. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- ❑ 2. Open the threaded element of the cable entry (c).
- ❑ 3. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 4. Tighten the threaded element of the cable entry (c).
- ❑ 5. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 6. Connect the connecting cable to the connection terminal plugs (d).



UA017\_007

Fig. 8: Electrical connections, transmitter

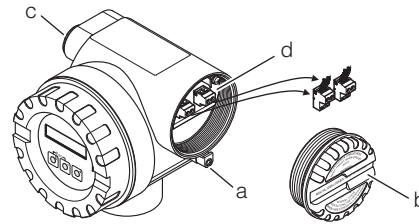
- A = Power supply, current output
- B = Pulse, status output (optional)
- C = Earthing clamp (relevant for remote version)
- D = PFM wiring (Pulse/Frequency Modulation)

- ❑ 7. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

#### Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
  - Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.
- ❑ 8. Close the cover of the connection compartment (b) and tighten the screw (a).
  - ❑ 9. Clip the local display module (e) into the retaining rails (f).
  - ❑ 10. Screw the cover of the electronics compartment (g) onto the transmitter housing.

### Ex-d (XP) version (Fig. 8 and Fig. 9)



UA017\_008

Fig. 9: Ex-d version

- a = Clamp securing the cover of the connection compartment
- b = Cover of connection compartment
- c = Terminals
- d = Cable entry

- ❑ 1. Open the clamp (a) securing the cover of the connection compartment.
- ❑ 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- ❑ 3. Open the threaded element of the cable entry (c).
- ❑ 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 5. Tighten the threaded element of the cable entry (c).
- ❑ 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 8).
- ❑ 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

#### Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- ❑ 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
- ❑ 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

## 8. Commissioning the device

- ❑ 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).

#### Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- ❑ 2. Key the parameters you read out beforehand Page 5 into the device from the table (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).

Parameterization completes conversion; the device is now ready for operation.

- ❑ 3. Complete the form for the archives and send the information to the address printed on the form.



## Instructions for Conversion: Prowirl 77W, 77F, 77H compact version (high/low temperature and high pressure) to Proline Prowirl 72 compact version

### Prowirl 77F, 77H compact version to Proline Prowirl 73 compact version

### Prowirl 70H compact version to Proline Prowirl 72 compact version



#### Note!

See Page 3 (Prowirl 72) or Page 12 (Prowirl 73) for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 72 or Prowirl 73 transmitter, as applicable	4	Screws for DSC sensor
1	Preamplifier	1	DSC sensor seal (flat gasket-type seal)
1	Housing neck including O-rings	1	Nameplate for transmitter
4	Screws for housing neck	1	Form for archives
1	DSC sensor	1	Instructions for Conversion

#### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for Proline Prowirl 72 or, as applicable, Proline Prowirl 73, is valid for the converted device.



#### Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

## 1. Making a backup of the device data



### Caution!

Once you have completed conversion, you need the device parameters of the Prowirl 77 transmitter for commissioning. Without these values you would not be able to have the Prowirl 72 or Prowirl 73 device in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 77. See Page 5 ff. (for Prowirl 72) or Page 14 ff. (for Prowirl 73).

## 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 77.

Sensorrelevante Daten: Sensor relevant data:	
TM: -40...+260°C	<input type="checkbox"/> -200...+400°C <input type="checkbox"/>
other:	<input type="checkbox"/>
Materials: CF3M (1.4404) / 316L (1.4435)	<input type="checkbox"/>
other:	<input type="checkbox"/>
Gasket: Graphite	<input type="checkbox"/> Gylon <input type="checkbox"/>
Viton	<input type="checkbox"/> Kalrez <input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

## 3. Removing the connecting cable

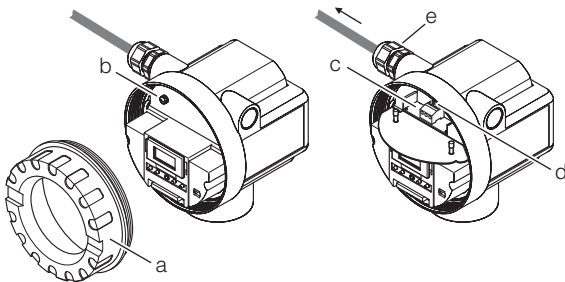


### Caution!

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

### Non-Ex / Ex-i (IS) version (Fig. 2)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Slacken the two screws of the cover (b) of the connection compartment and open the bottom-hinged cover.
- 3. Disconnect the connections from the terminal block (c) and the earthing terminal (d) of the earthing cable (if installed).
- 4. Open the threaded element of the cable entry (e).
- 5. Carefully pull the connecting cable out of the transmitter housing.

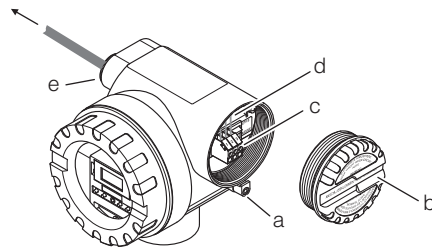


UA017\_001

Fig. 2: Removing the connecting cable, non-Ex / Ex-i (IS) version  
 a = Cover of electronics compartment  
 b = Threaded fastener of cover for connection compartment  
 c = Terminal block  
 d = Terminal for earthing cable  
 e = Cable entry

### Ex-d (XP) version (Fig. 3)

- 1. Switch off the power supply to the device.
- 2. Warning!  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Disconnect the connections from the terminal block (c) and the earthing terminal (d) of the earthing cable (if installed).
- 6. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (d).
- 7. Carefully pull the connecting cable out of the transmitter housing.

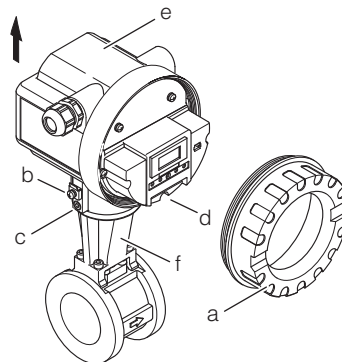


UA017\_002

Fig. 3: Removing the connecting cable, Ex-d version  
 a = Clamp securing the cover of the connection compartment  
 b = Cover of connection compartment  
 c = Terminals  
 d = Terminal for earthing cable  
 e = Cable entry

## 4. Removing the transmitter housing (Fig. 4)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Remove the earthing cable (b), if installed.
- 3. Remove the outer screw (c) securing the transmitter housing.
- 4. Remove the inner screw (d) securing the transmitter housing.
- 5. Pull the transmitter housing (e) off the housing neck (f).



UA017\_003

Fig. 4: Removing the transmitter housing  
 a = Cover of electronics compartment  
 b = Threaded fastener of earthing cable  
 c = Outer securing screw for transmitter housing  
 d = Inner securing screw for transmitter housing  
 e = Transmitter housing  
 f = Housing neck

**5. Replacing housing neck and sensor (Fig. 5)**



- Warning!**  
Risk of fatal injury:
- The piping system must be completely free of pressure in order for the sensor to be replaced. Residual pressure acting on the piping run can cause the sensor to jump out as soon as the retaining screws are slackened.
  - If the medium is toxic, explosive or flammable, the piping run in which the measuring device is installed must be flushed or purged before the sensor can be replaced.



**Caution!**  
When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

- 1. Remove the four screws (a) securing the housing neck (b).
- 2. Carefully disengage the housing neck (b) from the sensor (c).
- 3. Remove the four screws (d) securing the sensor.
- 4. Carefully remove the sensor (c) from the basic unit (e).
- 5. Using a suitable implement, remove the sensor seal (f) without scratching the sealing face.
- 6. Use as suitable solvent to clean the sealing face (g) of the basic unit.



- Caution!**
- Take great care not to scratch the sealing face (g).
  - The adapter bore must be perfectly clean.

- 7. Place the new sensor seal (f) on the sealing face (g).
- 8. Slip the new sensor (c) into the sensor bore of the basic unit (e).



- Caution!**  
The mark (h, small recess) on the sensor (h) must point in the flow direction (arrow on the basic unit).
- 9. Apply a drop of a grease appropriate to the temperature range of the application to the threads and seatings of each screw. The high temperature paste HTP (50048898) is recommended.

- 10. Secure the sensor (c) to the basic unit (e).  
Conversion of Prowirl 77F, 77W:  
tightening torque = 5.8Nm (4.3lbf ft), cross wise  
Conversion of Prowirl 77H:  
1st step tightening torque = 10Nm (7.4lbf ft), cross wise;  
2nd step tightening torque = 15Nm (11.0lbf ft), cross wise

Temperature [°C (°F)]	Torques [Nm (lbf ft)]			
	Pos. 11 Steps; tighten in a diagonally opposite sequence 1.	Pos. 14 Steps and sequence		
		1. A, B, A, B, D, C	2. B, A, C, D	3. A, B, C, D
-200 (-328)	not permitted	not permitted		
-50 (-58)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
-40 (-40)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
+20 (+68)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
+100 (+212)	11.8 (8.7)	8.5 (6.3)	17.0 (12.5)	22.0 (16.2)
+200 (+392)	11.1 (8.2)	7.9 (5.8)	15.8 (11.7)	20.6 (15.2)
+260 (+500)	10.9 (8.0)	7.8 (5.7)	15.6 (11.5)	20.2 (14.9)
+300 (+572)	10.6 (7.8)	7.6 (5.6)	15.2 (11.2)	19.7 (14.5)
+400 (+752)	10.1 (7.5)	7.0 (5.2)	14.0 (10.3)	18.2 (13.4)

Apply one drop of grease to each screw. The grease used must be suited to the application temperature range.  
The high-temperature paste HTP (50048898) is recommended.

- 11. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.
- 12. Tighten the four screws (a) securing the housing neck (b).  
Conversion of Prowirl 77F/W/H:  
tightening torque = 5.8Nm (4.3lbf ft), cross wise.  
Conversion of Prowirl 70H:  
tightening torque = 16Nm (11.8lbf ft), cross wise.

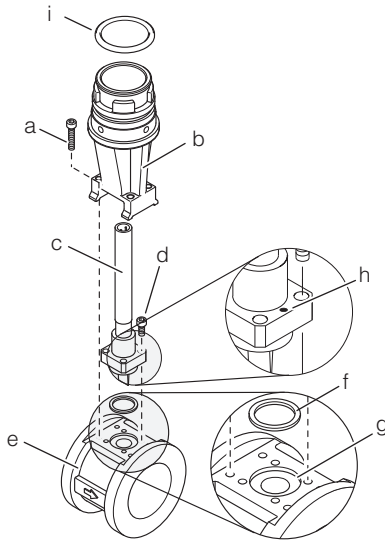


- Note!**
- For DSC sensor replacement, the line needs to be completely depressurized.
  - DSC Sensor replacement can only be performed by technically trained staff.
  - The operator has to take appropriate precautions against injury when handling cot or hot objects. These precautionary actions have to comply with site safety and work instructions.
  - The new gasket included in the conversion kit has to be used for the replacement. The old gasket has to be disposed off.
  - If conversion is done at other temperatures of the piping than ambient temperature, the torques should be adjusted according to the table below.
  - Sensor, bolts and meter body need to be at the same temperature for conversion. Therefore first mount DSC sensor with bolts tightened slightly by hand. Then allow the DSC sensor to reach the meter body temperature prior to tightening the retaining bolts with the given torques.
  - For devices according to ATEX II 1/2GD and ATEX II 1/2G, the devices have to be pressure tested after DSC sensor replacement. The pressure test has to be done at a test pressure of 1.5 times design pressure.

	Conversion of 77W, 77F standard sensor	Conversion of 77W, 77F high/low temperature sensor
Temp. [°C]/[°F]	Torque [Nm]/[lbf ft]	Torque [Nm]/[lbf ft]
-200/-328	not allowed	5.8/4.3
-50/-58	not allowed	5.8/4.3
-40/-40	5.8/4.3	5.8/4.3
20/68	5.8/4.3	5.8/4.3
100/212	4.9/3.6	4.9/3.6
200/392	4.6/3.4	4.6/3.4
260/500	4.5/3.3	4.5/3.3
300/572	not allowed	4.4/3.2
400/752	not allowed	not recommended

	Conversion of 77H		Conversion of 70H	
Temp. [°C]/[°F]	Torque [Nm]/[lbf ft]		Torque [Nm]/[lbf ft]	
	Step 1	Step 2	Step 1	Step 2
-200/-328	10.0/7.4	15.0/11.0	not recommended	
-50/-58	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
-40/-40	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
20/68	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
100/212	8.5/6.3	12.7/9.4	8.5/6.3	22.0/16.2
200/392	7.9/5.8	11.9/8.8	7.9/5.8	20.6/15.2
260/500	7.8/5.7	11.6/8.6	7.8/5.7	20.2/14.9
300/572	7.6/5.6	11.4/8.4	7.6/5.6	19.7/14.5
400/752	7.0/5.2	10.5/7.7	7.0/5.2	18.2/13.4

- 13. Coat the O-ring (i) with silicone grease (the O-ring is fitted to the housing neck).



UA017\_009

**Fig. 5:** Replacing housing neck and sensor  
 a = Threaded fastener of housing neck  
 b = Housing neck  
 c = Sensor  
 d = Threaded fastener of sensor  
 e = Basic unit  
 f = Sensor seal  
 g = Sealing face of basic unit  
 h = Mark on sensor (must point in direction of flow)  
 i = O-ring of housing neck (fitted)

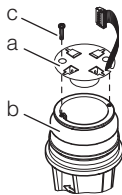
## 6. Installing the new preamplifier (Fig. 6)

- 14. Slip the preamplifier (a) into the housing neck (b).

**Note!**

The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.

- 15. Tighten the two securing screws (c) to secure the preamplifier (a).



UA017\_010

**Fig. 6:** Replacing the housing neck / installing the preamplifier  
 a = Preamplifier  
 b = Housing neck  
 c = Threaded fastener of preamplifier

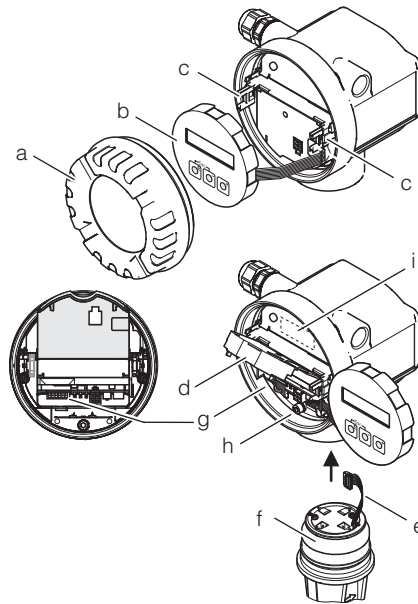
## 7. Installing the new transmitter (Fig. 7)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Open the top-hinged plastic cover (d).

- 5. Remove the inner screw (h) securing the transmitter.
- 6. From below, guide the connecting cable (e) through the transmitter housing and set the transmitter housing on the housing neck (f).  
  
**Note!**  
 The end of the connecting cable emerges from the transmitter housing underneath the holder for the electronics.
- 7. Tighten the inner screw (h) securing the transmitter housing.
- 8. Tighten the outer screw securing the transmitter housing (see Page 26 Fig. 4, c).
- 9. Connect the connecting cable (e) to the plug (g) of the amplifier board.
- 10. Secure the connecting cable (e) to the retainer below the connecting-cable plug.
- 11. Close the top-hinged plastic cover (d).
- 12. Affix the new nameplate (Page 26) to the outside of the cover of the connection compartment (i).

**Steps 13 and 14 are required only in the case of the Ex-d (XP) versions:**

- 13. Clip the local display module (b) into the retaining rails (c).
- 14. Screw the cover of the electronics compartment (a) onto the amplifier housing.

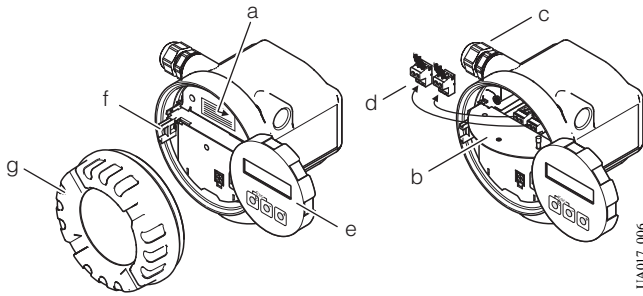


UA017\_005

**Fig. 7:** Installing the transmitter  
 a = Cover of electronics compartment  
 b = Local display module  
 c = Retaining rails  
 d = Plastic cover  
 e = Connecting cable, preamplifier/measuring-amplifier board  
 f = Housing neck  
 g = Plug for connecting cable on measuring-amplifier board  
 h = Inner securing screw  
 i = New nameplate on cover of connection compartment

## 8. Wiring the transmitter

### Non-Ex, Ex-i (IS) version (Fig. 9 and Fig. 8)

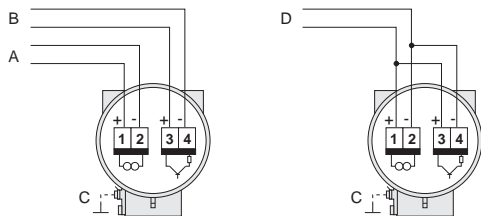


UA017\_006

Fig. 8: Non-Ex / Ex-i (IS) version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- ❑ 1. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- ❑ 2. Open the threaded element of the cable entry (c).
- ❑ 3. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 4. Tighten the threaded element of the cable entry (c).
- ❑ 5. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 6. Connect the connecting cable to the connection terminal plugs (d).



UA017\_007

Fig. 9: Electrical connections, transmitter

- A** = Power supply, current output
- B** = Optional pulse input, also usable as status output
- C** = Earthing clamp (relevant for remote version)
- D** = PFM wiring (Pulse/Frequency Modulation)

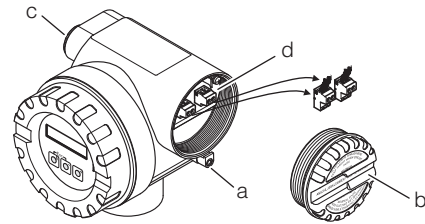
- ❑ 7. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- ❑ 8. Close the cover of the connection compartment (b) and tighten the screw (a).
- ❑ 9. Clip the local display module (e) into the retaining rails (f).
- ❑ 10. Screw the cover of the electronics compartment (g) onto the transmitter housing.

### Ex-d (XP) version (Fig. 9 and Fig. 10)



UA017\_008

Fig. 10: Ex-d version

- a = Clamp securing the cover of the connection compartment
- b = Cover of connection compartment
- c = Terminals
- d = Cable entry

- ❑ 1. Open the clamp (a) securing the cover of the connection compartment.
- ❑ 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- ❑ 3. Open the threaded element of the cable entry (c).
- ❑ 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 5. Tighten the threaded element of the cable entry (c).
- ❑ 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 9).
- ❑ 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- ❑ 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
- ❑ 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

## 9. Commissioning the device

- ❑ 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 or the Prowirl 73, as applicable.

Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- ❑ 2. Key the parameters you read out beforehand into the device from the table on Page 5 (Prowirl 72) or Page 14 (Prowirl 73) (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable).

Parameterization completes conversion; the device is now ready for operation.

- ❑ 3. Complete the form for the archives and send the information to the address printed on the form.

## Instructions for Conversion: Prowirl 77W, 77F compact version (standard temperature) to Proline Prowirl 72 remote version



### Note!

See Page 3 for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 72 transmitter including connection housing (remote version)	4	Screws for housing neck
1	Remote connection housing	1	Form for archives
1	Connecting cable (10 m or 30 m)	1	Nameplate for transmitter
1	Preamplifier	1	Instructions for Conversion
1	Housing neck including O-rings		

### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for the Proline Prowirl 72 is valid for the converted device.



### Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

### 1. Making a backup of the device data



**Caution!**

Once you have completed conversion, you need the device parameters of the Prowirl 77 transmitter for commissioning. Without these values you would not be able to have the Prowirl 72 device in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 77 (see Page 5 ff.).

### 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 77.

Sensorrelevante Daten:				
Sensor relevant data:				
TM:	-40...+260°C	<input type="checkbox"/>	-200...+400°C	<input type="checkbox"/>
	other:			<input type="checkbox"/>
Materials:	CF3M (1.4404) / 316L (1.4435)			<input type="checkbox"/>
	other:			<input type="checkbox"/>
Gasket:	Graphite	<input type="checkbox"/>	Gylon	<input type="checkbox"/>
	Viton	<input type="checkbox"/>	Kalrez	<input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

### 3. Removing the connecting cable

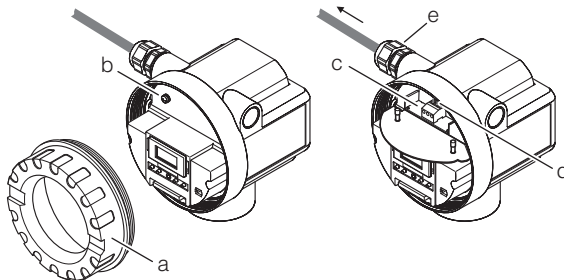


**Caution!**

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

#### Non-Ex / Ex-i (IS) version (Fig. 2)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Slacken the two screws of the cover (b) of the connection compartment and open the bottom-hinged cover.
- 3. Disconnect the connections from the terminal block (c) and the earthing terminal (d) for the earthing cable (if installed).
- 4. Open the threaded element of the cable entry (e).
- 5. Carefully pull the connecting cable out of the transmitter housing.

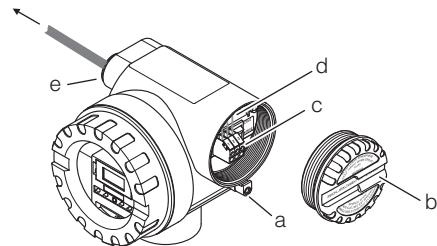


UA017\_001

Fig. 2: Removing the connecting cable, non-Ex / Ex-i (IS) version  
 a = Cover of electronics compartment  
 b = Threaded fastener of cover for connection compartment  
 c = Terminal block  
 d = Terminal for earthing cable  
 e = Cable entry

#### Ex-d (XP) version (Fig. 3)

- 1. Switch off the power supply to the device.
- 2. **Warning!**  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Disconnect the connections from the terminal block (c) and the earthing terminal (d) for the earthing cable (if installed).
- 6. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 7. Carefully pull the connecting cable out of the transmitter housing.

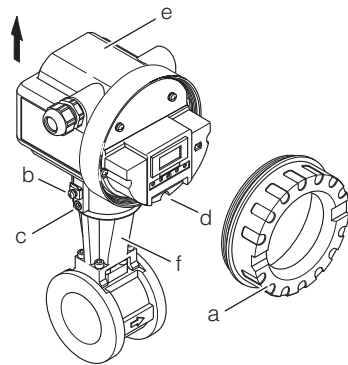


UA017\_002

Fig. 3: Removing the connecting cable, Ex-d version  
 a = Clamp securing the cover of the connection compartment  
 b = Cover of connection compartment  
 c = Terminals  
 d = Terminal for earthing cable  
 e = Cable entry

### 4. Removing the transmitter housing (Fig. 4)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Remove the earthing cable (b), if installed.
- 3. Remove the outer screw (c) securing the transmitter housing.
- 4. Remove the inner screw (d) securing the transmitter housing.
- 5. Pull the transmitter housing (e) off the housing neck (f).



UA017\_003

Fig. 4: Removing the transmitter housing  
 a = Cover of electronics compartment  
 b = Threaded fastener of earthing cable  
 c = Outer securing screw for transmitter housing  
 d = Inner securing screw for transmitter housing  
 e = Transmitter housing  
 f = Housing neck

## 5. Replacing the housing neck and installing the new preamplifier (Fig. 5)



### Caution!

When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

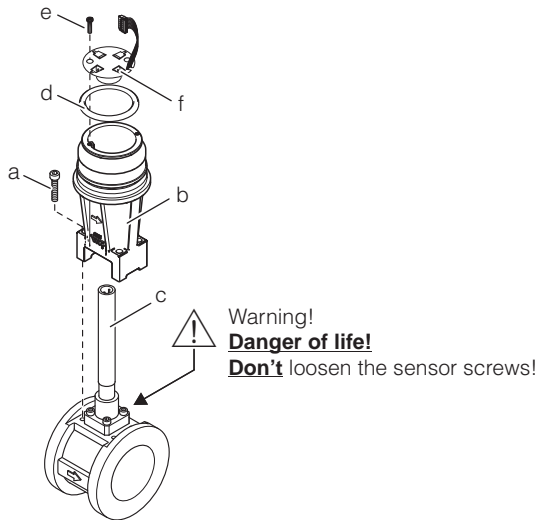
- ❑ 1. Remove the four screws (a) securing the housing neck (b).
- ⚠ **Warning! Risk of fatal injury:**  
Do not, under any circumstances, slacken the screws securing the sensor.
- ❑ 2. Carefully disengage the housing neck (b) from the sensor (c).
- ❑ 3. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.
- ❑ 4. Tighten the four screws (a) securing the housing neck (b). Tightening torque = 5.8Nm (4.3lbf ft); tighten in diagonally opposite sequence in three uniform steps
- ❑ 5. Coat the O-ring (d) with silicone grease (the O-ring is fitted to the housing neck).
- ❑ 6. Slip the preamplifier (f) into the housing neck (b).



### Note!

The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.

- ❑ 7. Tighten the two securing screws (e) to secure the preamplifier (f).



UA017\_004en

Fig. 5: Replacing the housing neck / installing the preamplifier

- a = Threaded fastener of housing neck
- b = Housing neck
- c = Sensor
- d = O-ring of housing neck (fitted)
- e = Threaded fastener of preamplifier
- f = Preamplifier

## 6. Installing the remote connection housing (Fig. 6)

- ❑ 1. Unscrew the cover (a) from the remote-version connection housing (b).
- ❑ 2. Slacken the screws securing the connection board (c) and remove the connection board from the remote-version connection housing (b).
- ❑ 3. Route preamplifier cable (d) from below through the remote-version connection housing (b) and connect the plug of preamplifier cable (d) on connection board (c) (on the underside of the connection board).
- ❑ 4. Install the connection board (c) in remote-version connection housing (b).

- ❑ 5. Position the remote-version connection housing (b) on housing neck (e).
- ❑ 6. Tighten the screw (f) securing the remote-version connection housing.
- ❑ 7. Open the threaded element of the strain relief device (g).
- ❑ 8. Open the threaded element of the cable entry (h).
- ❑ 9. Guide the connecting cable (connection between connection housing and transmitter) through the cable entry (h) and into the connection housing.
- ❑ 10. Tighten the threaded element of the cable entry (h).
- ❑ 11. Connect the connecting cable.



### Note!

See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN) for a detailed description of the wiring.

- ❑ 12. Install cable grip (g), making sure that the cable shield is underneath the grip.
- ❑ 13. Screw the cover (a) onto the connection housing (b).

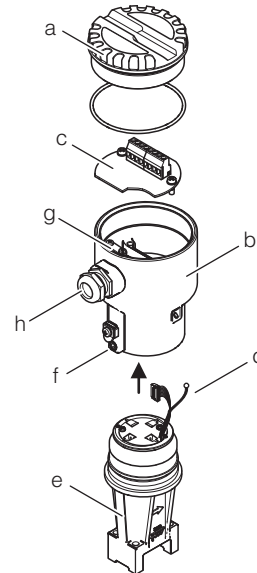


Fig. 6: Installing the remote connection housing

- a = Housing cover
- b = Remote connection housing
- c = Connection board
- d = Preamplifier cable
- e = Housing neck
- f = Securing screw
- g = Cable grip
- h = Cable entry

UA017\_012

## 7. Installing the transmitter

- ❑ 1. Install the transmitter.



### Note!

See the section entitled "Installation" → "Installing the transmitter (remote version)" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN) for a detailed description of the installation procedure.



## 8. Connecting the connecting cable

- ❑ 1. Connect the cable between the remote connection housing and the transmitter (remote version) to the transmitter.

 Note!

See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN) for a detailed description of the wiring.

## 9. Wiring the transmitter

**Non-Ex, Ex-i (IS) version (Fig. 8 and Fig. 7)**

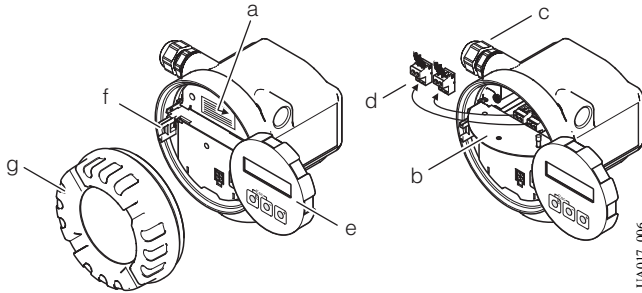


Fig. 7: Non-Ex / Ex-d (XP) version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- ❑ 1. Screw the cover of the electronics compartment (g) off the transmitter housing.
- ❑ 2. Pull the local display module (e) off the retaining rails (f).
- ❑ 3. Clip the left side of the local display module (e) into the right-hand retaining rail (to hold the local display module temporarily in position).
- ❑ 4. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- ❑ 5. Open the threaded element of the cable entry (c).
- ❑ 6. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 7. Tighten the threaded element of the cable entry (c).
- ❑ 8. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 9. Connect the connecting cable to the connection terminal plugs (d).

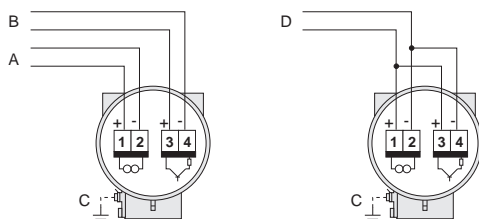


Fig. 8: Electrical connections, transmitter

- A = Power supply, current output
- B = Optional pulse input, also usable as status output
- C = Earthing clamp (relevant for remote version)
- D = PFM wiring (Pulse/Frequency Modulation)

- ❑ 10. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

 Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
  - Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.
- ❑ 11. Close the cover of the connection compartment (b) and tighten the screw (a).
  - ❑ 12. Affix the new nameplate (Page 31) to the outside of the cover of the connection compartment (b).
  - ❑ 13. Clip the local display module (e) into the retaining rails (f).
  - ❑ 14. Screw the cover of the electronics compartment (g) onto the transmitter housing.

**Ex-d (XP) version (Fig. 8 and Fig. 9)**

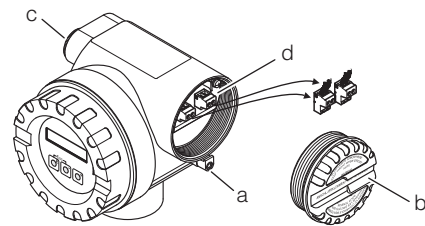


Fig. 9: Ex-d version

- a = Clamp securing the cover of the connection compartment
- b = Cover of connection compartment
- c = Terminals
- d = Cable entry

- ❑ 1. Open the clamp (a) securing the cover of the connection compartment.
- ❑ 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- ❑ 3. Open the threaded element of the cable entry (c).
- ❑ 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 5. Tighten the threaded element of the cable entry (c).
- ❑ 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 8).
- ❑ 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

 Note!

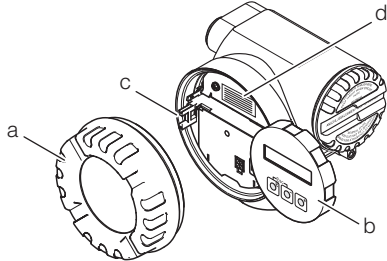
- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
  - Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.
- ❑ 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
  - ❑ 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

## 10. Marking the converted device (Ex-d (XP) version)



### Note

The procedure for rewiring the transmitter for the non-Ex and Ex-i versions includes marking of the measuring device as converted. Consequently, the steps described below apply only to Ex-d (XP) transmitters:



UA017\_011

Fig. 10: Marking the converted device

- a = Cover of electronics compartment*
- b = Local display module*
- c = Retaining rails*
- d = New nameplate on cover of connection compartment*

1. Screw the cover of the electronics compartment (a) off the transmitter housing.
2. Pull the local display module (b) off the retaining rails (c).
3. Affix the new nameplate (Page 31 ) to the outside of the cover of the connection compartment (d).
4. Clip the local display module (b) into the retaining rails (c).
5. Screw the cover of the electronics compartment (a) onto the transmitter housing.

## 11. Commissioning the device

1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).



### Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

2. Key the parameters you read out beforehand Page 5 into the device from the table (see also the section entitled "Commissioning", "→Quick Setup" in the Operating Instructions of the Prowirl 72 (BA00084D/06/EN).

Parameterization completes conversion; the device is now ready for operation.

3. Complete the form for the archives and send the information to the address printed on the form.

## Instructions for Conversion: Prowirl 77W, 77F, 77H compact version (high/low temperature and high pressure) to Proline Prowirl 72 remote version

### Prowirl 77F, 77H compact version to Proline Prowirl 73 remote version

### Prowirl 70F compact version to Proline Prowirl 72 remote version



#### Note!

See Page 3 (Prowirl 72) or Page 12 (Prowirl 73) for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 72 or Prowirl 73 transmitter, as applicable	1	DSC sensor
1	Connection housing, remote version	4	Screws for DSC sensor
1	Connecting cable (10 m or 30 m)	1	DSC sensor seal (flat gasket-type seal)
1	Preamplifier	1	Nameplate for transmitter
1	Housing neck including O-rings	1	Form for archives
4	Screws for housing neck	1	Instructions for Conversion

#### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for Proline Prowirl 72 or, as applicable, Proline Prowirl 73, is valid for the converted device.



#### Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

## 1. Making a backup of the device data



### Caution!

Once you have completed conversion, you need the device parameters of the Prowirl 77 transmitter for commissioning. Without these values you would not be able to have the Prowirl 72 or Prowirl 73 device in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 77. See Page 5 ff. (for Prowirl 72) or Page 14 ff. (for Prowirl 73).

## 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 77.

Sensorrelevante Daten: Sensor relevant data:				
TM:	-40...+260°C	<input type="checkbox"/>	-200...+400°C	<input type="checkbox"/>
	other:			<input type="checkbox"/>
Materials:	CF3M (1.4404) / 316L (1.4435)			<input type="checkbox"/>
	other:			<input type="checkbox"/>
Gasket:	Graphite	<input type="checkbox"/>	Gylon	<input type="checkbox"/>
	Viton	<input type="checkbox"/>	Kalrez	<input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

## 3. Removing the connecting cable

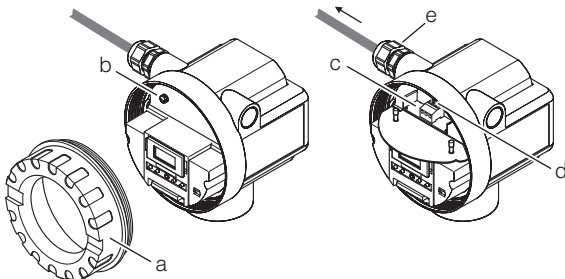


### Caution!

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

### Non-Ex / Ex-i (IS) version (Fig. 2)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Slacken the two screws of the cover (b) of the connection compartment and open the bottom-hinged cover.
- 3. Disconnect the connections from the terminal block (c) and the earthing terminal (d) for the earthing cable (if installed).
- 4. Open the threaded element of the cable entry (e).
- 5. Carefully pull the connecting cable out of the transmitter housing.

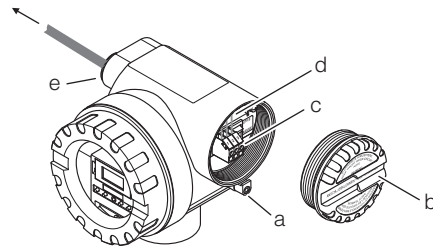


UA017\_001

Fig. 2: Removing the connecting cable, non-Ex / Ex-i (IS) version  
 a = Cover of electronics compartment  
 b = Threaded fastener of cover for connection compartment  
 c = Terminal block  
 d = Terminal for earthing cable  
 e = Cable entry

### Ex-d (XP) version (Fig. 3)

- 1. Switch off the power supply to the device.
- 2. Warning!  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Disconnect the connections from the terminal block (c) and the earthing terminal (d) for the earthing cable (if installed).
- 6. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 7. Carefully pull the connecting cable out of the transmitter housing.

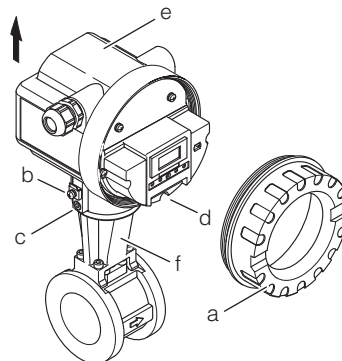


UA017\_002

Fig. 3: Removing the connecting cable, Ex-d version  
 a = Clamp securing the cover of the connection compartment  
 b = Cover of connection compartment  
 c = Terminals  
 d = Terminal for earthing cable  
 e = Cable entry

## 4. Removing the transmitter housing (Fig. 4)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Remove the earthing cable (b), if installed.
- 3. Remove the outer screw (c) securing the transmitter housing.
- 4. Remove the inner screw (d) securing the transmitter housing.
- 5. Pull the transmitter housing (e) off the housing neck (f).



UA017\_003

Fig. 4: Removing the transmitter housing  
 a = Cover of electronics compartment  
 b = Threaded fastener of earthing cable  
 c = Outer securing screw for transmitter housing  
 d = Inner securing screw for transmitter housing  
 e = Transmitter housing  
 f = Housing neck

**5. Replacing housing neck and sensor (Fig. 5)**



**Warning!**

Risk of fatal injury:

- The piping system must be completely free of pressure in order for the sensor to be replaced. Residual pressure acting on the piping run can cause the sensor to jump out as soon as the retaining screws are slackened.
- If the medium is toxic, explosive or flammable, the piping run in which the measuring device is installed must be flushed or purged before the sensor can be replaced.



**Caution!**

When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

- 1. Remove the four screws (a) securing the housing neck (b).
- 2. Carefully disengage the housing neck (b) from the sensor (c).
- 3. Remove the four screws (d) securing the sensor.
- 4. Carefully remove the sensor (c) from the basic unit (e).
- 5. Using a suitable implement, remove the sensor seal (f) without scratching the sealing face.
- 6. Use as suitable solvent to clean the sealing face (g) of the basic unit.



**Caution!**

- Take great care not to scratch the sealing face (g).
- The adapter bore must be perfectly clean.

- 7. Place the new sensor seal (f) on the sealing face (g).
- 8. Slip the new sensor (c) into the sensor bore of the basic unit (e).



**Caution!**

The mark (h, small recess) on the sensor (h) must point in the flow direction (arrow on the basic unit).

- 9. Apply a drop of a grease appropriate to the temperature range of the application to the threads and seatings of each screw. The high temperature paste HTP (50048898) is recommended.
- 10. Secure the sensor (c) to the basic unit (e).  
Conversion of Prowirl 77F, 77W:  
tightening torque = 5.8Nm (4.3lbf ft), cross wise  
Conversion of Prowirl 77H:  
1st step tightening torque = 10Nm (7.4lbf ft), cross wise;  
2nd step tightening torque = 15Nm (11.0lbf ft), cross wise

Temperature [°C (°F)]	Torques [Nm (lbf ft)]			
	Pos. 11 Steps; tighten in a diagonally opposite sequence 1.	Pos. 14 Steps and sequence		
		1. A, B, A, B, D, C	2. B, A, C, D	3. A, B, C, D
-200 (-328)	not permitted	not permitted		
-50 (-58)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
-40 (-40)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
+20 (+68)	14.0 (10.3)	10.0 (7.4)	20.0 (14.8)	26.0 (19.2)
+100 (+212)	11.8 (8.7)	8.5 (6.3)	17.0 (12.5)	22.0 (16.2)
+200 (+392)	11.1 (8.2)	7.9 (5.8)	15.8 (11.7)	20.6 (15.2)
+260 (+500)	10.9 (8.0)	7.8 (5.7)	15.6 (11.5)	20.2 (14.9)
+300 (+572)	10.6 (7.8)	7.6 (5.6)	15.2 (11.2)	19.7 (14.5)
+400 (+752)	10.1 (7.5)	7.0 (5.2)	14.0 (10.3)	18.2 (13.4)

Apply one drop of grease to each screw. The grease used must be suited to the application temperature range.  
The high-temperature paste HTP (50048898) is recommended.

- 11. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.
- 12. Tighten the four screws (a) securing the housing neck (b).  
Conversion of Prowirl 77F/W/H:  
tightening torque = 5.8Nm (4.3lbf ft), cross wise.  
Conversion of Prowirl 70H:  
tightening torque = 16Nm (11.8lbf ft), cross wise.



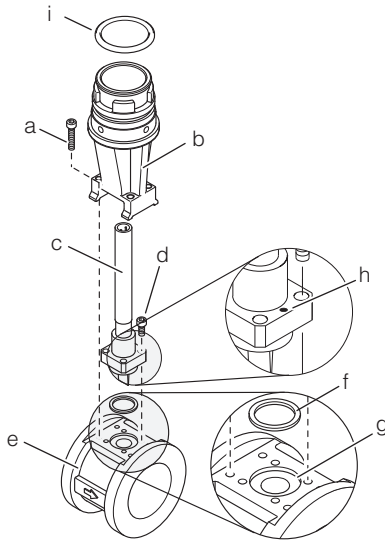
**Note!**

- For DSC sensor replacement, the line needs to be completely depressurized.
- DSC Sensor replacement can only be performed by technically trained staff..
- The operator has to take appropriate precautions against injury when handling cot or hot objects. These precautionary actions have to comply with site safety and work instructions.
- The new gasket included in the conversion kit has to used for the replacement. The old gasket has to be disposed off.
- If conversion is done at other temperatures of the piping than ambient temperature, the torques should be adjusted according to the table below.
- Sensor, bolts and meter body need to be at the same temperature for conversion. Therefore first mount DSC sensor with bolts tightened slightly by hand. Then allow the DSC sensor to reach the meter body temperature prior to tightening the retaining bolts with the given torques.
- For devices according to ATEX II 1/2GD and ATEX II 1/2G, the devices have to be pressure tested after DSC sensor replacement. The pressure test has to be done at a test pressure of 1.5 times design pressure.

	Conversion of 77W, 77F standard sensor	Conversion of 77W, 77F high/low temperature sensor
Temp. [°C]/[F]	Torque [Nm]/[lbf ft]	Torque [Nm]/[lbf ft]
-200/-328	not allowed	5.8/4.3
-50/-58	not allowed	5.8/4.3
-40/-40	5.8/4.3	5.8/4.3
20/68	5.8/4.3	5.8/4.3
100/212	4.9/3.6	4.9/3.6
200/392	4.6/3.4	4.6/3.4
260/500	4.5/3.3	4.5/3.3
300/572	not allowed	4.4/3.2
400/752	not allowed	not recommended

	Conversion of 77H		Conversion of 70H	
Temp. [°C]/[F]	Torque [Nm]/[lbf ft]		Torque [Nm]/[lbf ft]	
	Step 1	Step 2	Step 1	Step 2
-200/-328	10.0/7.4	15.0/11.0	not recommended	
-50/-58	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
-40/-40	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
20/68	10.0/7.4	15.0/11.0	10.0/7.4	26.0/19.2
100/212	8.5/6.3	12.7/9.4	8.5/6.3	22.0/16.2
200/392	7.9/5.8	11.9/8.8	7.9/5.8	20.6/15.2
260/500	7.8/5.7	11.6/8.6	7.8/5.7	20.2/14.9
300/572	7.6/5.6	11.4/8.4	7.6/5.6	19.7/14.5
400/752	7.0/5.2	10.5/7.7	7.0/5.2	18.2/13.4

13. Coat the O-ring (i) with silicone grease (the O-ring is fitted to the housing neck).



UA017\_009

**Fig. 5:** Replacing housing neck and sensor  
 a = Threaded fastener of housing neck  
 b = Housing neck  
 c = Sensor  
 d = Threaded fastener of sensor  
 e = Basic unit  
 f = Sensor seal  
 g = Sealing face of basic unit  
 h = Mark on sensor (must point in direction of flow)  
 i = O-ring of housing neck (fitted)

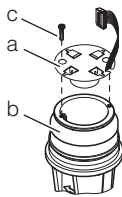
### 6. Installing the new preamplifier (Fig. 6)

- 14. Slip the preamplifier (a) into the housing neck (b).



**Note!**  
 The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.

- 15. Tighten the two securing screws (c) to secure the preamplifier (a).

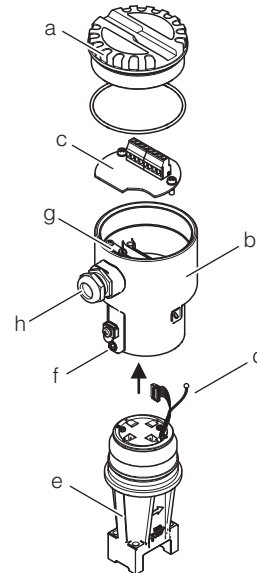


UA017\_010

**Fig. 6:** Replacing the housing neck / installing the preamplifier  
 a = Preamplifier  
 b = Housing neck  
 c = Threaded fastener of preamplifier

### 7. Installing the remote connection housing (Fig. 7)

- 1. Unscrew the cover (a) from the connection housing (b).
  - 2. Slacken the screws securing the connection board (c) and remove the connection board from the connection housing.
  - 3. Route preamplifier cable (d) from below through the remote-version connection housing (b) and connect the plug of preamplifier cable (d) on connection board (c) (on the underside of the connection board).
  - 4. Install the connection board (c) in remote-version connection housing (b).
  - 5. Position the remote-version connection housing (b) on housing neck (e).
  - 6. Tighten the screw (f) securing the remote-version connection housing.
  - 7. Open the threaded element of the strain relief device (g).
  - 8. Open the threaded element of the cable entry (h).
  - 9. Guide the connecting cable (connection between connection housing and transmitter) through the cable entry (h) and into the connection housing.
  - 10. Tighten the threaded element of the cable entry (h).
  - 11. Connect the connecting cable.
- Note!**  
 See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.
- 12. Install cable grip (g), making sure that the cable shield is underneath the grip.
  - 13. Screw the cover (a) onto the connection housing (b).



UA017\_012

**Fig. 7:** Installing the remote connection housing  
 a = Housing cover  
 b = Remote connection housing  
 c = Connection board  
 d = Preamplifier cable  
 e = Housing neck  
 f = Securing screw  
 g = Cable grip  
 h = Cable entry

## 8. Installing the transmitter (remote version)

- 1. Install the transmitter.

 Note!

See the section entitled "Installation" → "Installing the transmitter remote version" in the Operating Instructions of the Prowirl 72, or Prowirl 73, as applicable, for a detailed description of the installation procedure.

## 9. Connecting the connecting cable

- 1. Connect the cable between the remote connection housing and the transmitter (remote version) to the transmitter.

 Note!

See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.

## 10. Wiring the transmitter

**Non-Ex, Ex-i (IS) version (Fig. 8 and Fig. 9)**

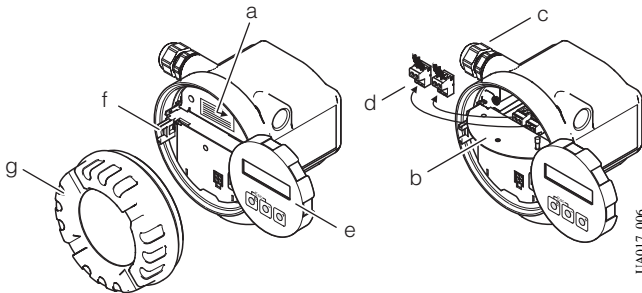


Fig. 8: Non-Ex / Ex-i (IS) version  
 a = Threaded fastener of cover for connection compartment  
 b = Cover for connection compartment  
 c = Cable entry  
 d = Connecting terminal plug  
 e = Local display module  
 f = Retaining rails  
 g = Cover of electronics compartment

- 1. Screw the cover of the electronics compartment (g) off the transmitter housing.
- 2. Pull the local display module (e) off the retaining rails (f).
- 3. Clip the left side of the local display module (e) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- 5. Open the threaded element of the cable entry (c).
- 6. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- 7. Tighten the threaded element of the cable entry (c).
- 8. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).

- 9. Connect the connecting cable to the connection terminal plugs (d).

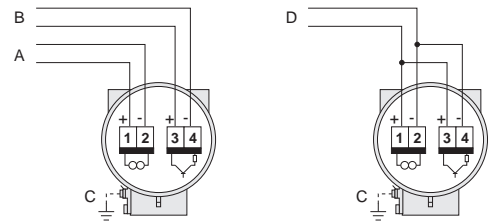


Fig. 9: Electrical connections, transmitter  
 A = Power supply, current output  
 B = Optional pulse input, also usable as status output  
 C = Earthing clamp (relevant for remote version)  
 D = PFM wiring (Pulse/Frequency Modulation)

- 10. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

 Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- 11. Close the cover of the connection compartment (b) and tighten the screw (a).
- 12. Affix the new nameplate (Page 36) to the outside of the cover of the connection compartment (b).
- 13. Clip the local display module (e) into the retaining rails (f).
- 14. Screw the cover of the electronics compartment (g) onto the transmitter housing.

**Ex-d (XP) version (Fig. 9 and Fig. 10)**

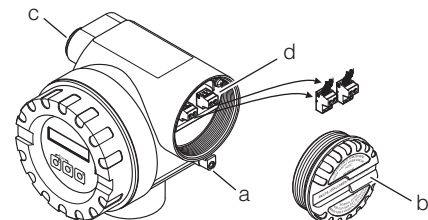


Fig. 10: Ex-d version  
 a = Clamp securing the cover of the connection compartment  
 b = Cover of connection compartment  
 c = Terminals  
 d = Cable entry

- 1. Open the clamp (a) securing the cover of the connection compartment.
- 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- 3. Open the threaded element of the cable entry (c).
- 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- 5. Tighten the threaded element of the cable entry (c).
- 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 9).

- 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

 Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
- 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

### 11. Marking the converted device (Ex-d (XP) version)

 Note

The procedure for rewiring the transmitter for the non-Ex and Ex-i versions includes marking of the measuring device as converted. Consequently, the steps described below apply only to Ex-d (XP) transmitters:

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Affix the new nameplate (Page 36 ) to the outside of the cover of the connection compartment (d).
- 4. Clip the local display module (b) into the retaining rails (c).
- 5. Screw the cover of the electronics compartment (a) onto the transmitter housing.

### 12. Commissioning the device

- 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 or the Prowirl 73, as applicable.

 Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- 2. Key the parameters you read out beforehand into the device from the table on Page 5 (Prowirl 72) or Page 14 (Prowirl 73) (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable).

Parameterization completes conversion; the device is now ready for operation.

- 3. Complete the form for the archives and send the information to the address printed on the form.



## Instructions for Conversion: Proline Prowirl 72 compact version to Proline Prowirl 72 remote version (non-Ex)

## Proline Prowirl 73 compact version to Proline Prowirl 73 remote version (non-Ex)

 Note!

See Page 3 (Prowirl 72) or Page 12 (Prowirl 73) for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Connection housing, transmitter (remote version)	1	Form for archives
1	Remote connection housing	1	Instructions for Conversion
1	Connecting cable (10 m or 30 m)		

### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for Proline Prowirl 72 or, as applicable, Proline Prowirl 73, is valid for the converted device.

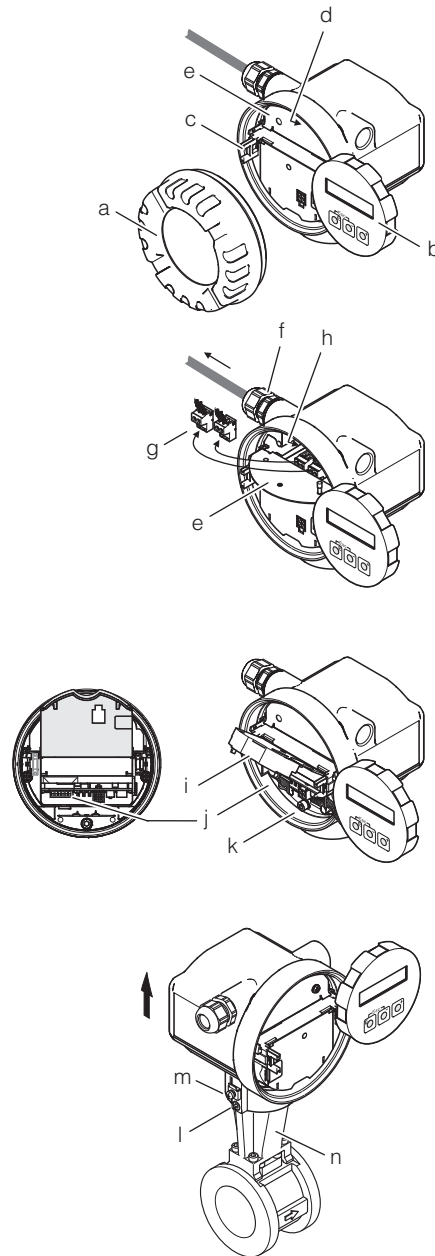
### 1. Removing the transmitter housing (Fig. 1)

- ❑ 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- ❑ 2. Pull the local display module (b) off the retaining rails (c).
- ❑ 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- ❑ 4. Slacken the screw (d) of the cover of the connection compartment (e) and open the bottom-hinged cover.
- ❑ 5. Open the threaded element of the cable entry (f).
- ❑ 6. Disconnect the connections of the connection terminal plugs (g). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- ❑ 7. Disconnect the connection to terminal (h) of the earthing cable (if fitted).
- ❑ 8. Carefully pull the connecting cable out of the transmitter housing.
- ❑ 9. Open the top-hinged plastic cover (i).
- ❑ 10. Unplug the preamplifier cable (j) from the amplifier board.
- ❑ 11. Remove the inner screw (k) securing the transmitter housing.
- ❑ 12. Remove the outer screw (l) securing the transmitter housing.
- ❑ 13. Remove the connection from the earthing terminal (m)
- ❑ 14. Carefully pull the transmitter housing off the housing neck (n).



**Caution!**


When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.



**Fig. 1:** Removing the transmitter housing  
*a = Cover of electronics compartment*  
*b = Local display module*  
*c = Retaining rails*  
*d = Threaded fastener of cover for connection compartment*  
*e = Cover for connection compartment*  
*f = Cable entry*  
*g = Connecting terminal plug*  
*h = Terminal for earthing cable*  
*i = Plastic cover*  
*j = Preamplifier-cable plug*  
*k = Inner securing screw for transmitter housing*  
*l = Earthing terminal*  
*m = Outer securing screw for transmitter housing*  
*n = Housing neck*

UA017\_013

## 2. Installing the remote connection housing (Fig. 2)

- ❑ 1. Unscrew the cover (a) from the remote-version connection housing (b).
  - ❑ 2. Slacken the screws securing the connection board (c) and remove the connection board from the remote-version connection housing.
  - ❑ 3. Route preamplifier cable (d) from below through the remote-version connection housing (b) and connect the plug of preamplifier cable (d) on connection board (c) (on the underside of the connection board).
  - ❑ 4. Install the connection board (c) in remote-version connection housing (b).
  - ❑ 5. Position the remote-version connection housing (b) on housing neck (e).
  - ❑ 6. Tighten the screw (f) securing the remote-version connection housing.
  - ❑ 7. Open the threaded element of the strain relief device (g).
  - ❑ 8. Open the threaded element of the cable entry (h).
  - ❑ 9. Guide the connecting cable (connection between connection housing and transmitter) through the cable entry (h) and into the connection housing.
  - ❑ 10. Connect the connecting cable.
-  **Note!**  
See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.
- ❑ 11. Install cable grip (g), making sure that the cable shield is underneath the grip.
  - ❑ 12. Tighten the threaded element of the cable entry (h).
  - ❑ 13. Screw the cover (a) onto the remote-version connection housing (b).

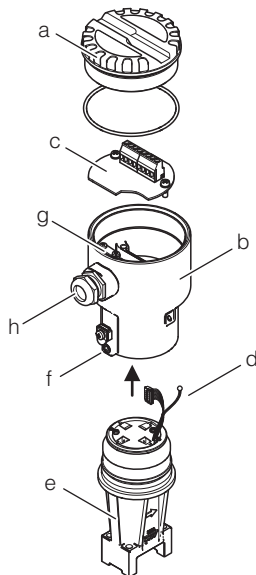


Fig. 2: Installing the remote connection housing  
 a = Housing cover  
 b = Remote connection housing  
 c = Connection board  
 d = Preamplifier cable  
 e = Housing neck  
 f = Securing screw  
 g = Cable grip  
 h = Cable entry

UA017\_012

## 3. Installing the transmitter (Fig. 3)

- ❑ 1. Install the connection housing of the transmitter.

 **Note!**

See the section entitled "Installation" → "Installing the transmitter remote version" in the Operating Instructions of the Prowirl 72, or Prowirl 73, as applicable, for a detailed description of the installation procedure.

- ❑ 2. Open the top-hinged plastic cover (a).
- ❑ 3. From below, guide the connecting cable including earthing cable (d) through the transmitter housing and set the transmitter housing on the connection housing (e).

 **Note!**

The end of the connecting cable including grounding cable (b) emerges from the transmitter housing underneath the holder for the electronics.

- ❑ 4. Connect the connecting cable (d) to the plug (b) of the amplifier board.
- ❑ 5. Remove the inner securing screw (c).
- ❑ 6. Connect the earthing cable (d) to the inner securing screw (c) and tighten the screw.
- ❑ 7. Close the top-hinged plastic cover (a).
- ❑ 8. Tighten the outer screw (f) securing the transmitter housing.

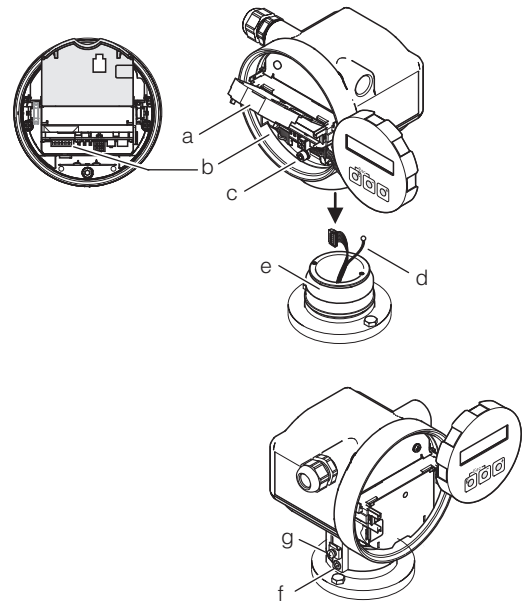


Fig. 3: Installing the connection housing

- a = Plastic cover
- b = Plug for connecting cable on measuring-amplifier board
- c = Inner securing screw for transmitter housing
- d = Connecting cable, preamplifier/measuring-amplifier board, including earthing cable
- e = Connection housing
- f = Outer securing screw for transmitter housing
- g = Earthing terminal

UA017\_014

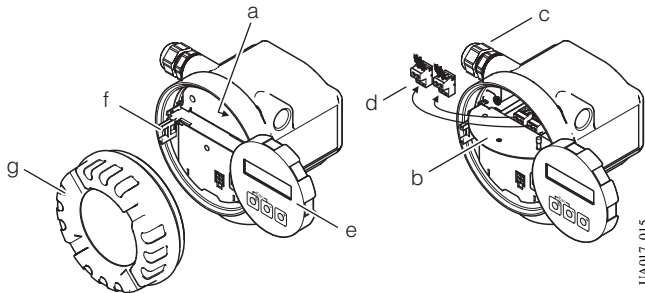
#### 4. Connecting the connecting cable

- 1. Connect the cable between the remote connection housing and the transmitter (remote version) to the transmitter.

 **Note!**

See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.

#### 5. Wiring the transmitter (Fig. 4, Fig. 5)

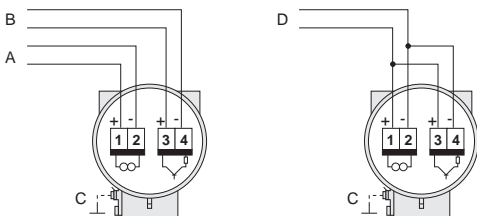


UA017\_015

Fig. 4: Wiring the transmitter

- a = Threaded fastener of cover for connection compartment*
- b = Cover for connection compartment*
- c = Cable entry*
- d = Connecting terminal plug*
- e = Local display module*
- f = Retaining rails*
- g = Cover of electronics compartment*

- 1. Screw the cover of the electronics compartment (g) off the transmitter housing.
- 2. Pull the local display module (e) off the retaining rails (f).
- 3. Clip the left side of the local display module (e) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Slacken the two screws (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- 5. Open the threaded element of the cable entry (c).
- 6. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- 7. Tighten the threaded element of the cable entry (c).
- 8. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- 9. Connect the connecting cable to the connection terminal plugs (d).




UA017\_907

Fig. 5: Electrical connections, transmitter

- A = Power supply, current output**
- B = Optional pulse input, also usable as status output**
- C = Earthing clamp (relevant for remote version)**
- D = PFM wiring (Pulse/Frequency Modulation)**

- 10. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

 **Note!**

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- 11. Close the cover of the connection compartment (b) and tighten the two screws (a).
- 12. Clip the local display module (e) into the retaining rails (f).
- 13. Screw the cover of the electronics compartment (g) onto the transmitter housing.

#### 6. Commissioning the device

- 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 or the Prowirl 73, as applicable.

This completes conversion; the device is now ready for operation.

- 2. Complete the form for the archives and send the information to the address printed on the form.

## Instructions for Conversion: Proline Prowirl 72 compact version to Proline Prowirl 72 remote version (Ex-d (XP), Ex-i (IS))

## Proline Prowirl 73 compact version to Proline Prowirl 73 remote version (Ex-d (XP), Ex-i (IS))


 Note!

See Page 3 (Prowirl 72) or Page 12 (Prowirl 73) for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 72 transmitter including connection housing (remote version)	1	Nameplate for transmitter
1	Remote connection housing	1	Form for archives
1	Connecting cable (10 m or 30 m)	1	Instructions for Conversion

### Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
-  Caution!  
A compact version in Zone II 1 G can only be converted to a remote version for Zone II 1/2 G.
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for Proline Prowirl 72 or, as applicable, Proline Prowirl 73, is valid for the converted device.

 Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

## 1. Making a backup of the device data



### Caution!

Once you have completed conversion, you need the device parameters of the Prowirl 72 or, as applicable, Prowirl 73 transmitter for commissioning. Without these values you would not be able to have the new transmitter in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 72. Use the table on Page 5 (Prowirl 72) or Page 14 (Prowirl 73), as applicable, and enter the values in the column on the right, "Parameters Prowirl 72 or 73" → "Value to be entered".

## 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 72.

Sensorrelevante Daten: Sensor relevant data:	
TM:	-40...+260°C <input type="checkbox"/> -200...+400°C <input type="checkbox"/>
other:	<input type="checkbox"/>
Materials:	CF3M (1.4404) / 316L (1.4435) <input type="checkbox"/>
other:	<input type="checkbox"/>
Gasket:	Graphite <input type="checkbox"/> Gylon <input type="checkbox"/>
	Viton <input type="checkbox"/> Kalrez <input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

## 3. Removing the transmitter housing



### Caution!

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

### Ex-i (IS) version (Fig. 2)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Slacken the screw (d) of the cover of the connection compartment (e) and open the bottom-hinged cover.
- 5. Open the threaded element of the cable entry (f).
- 6. Disconnect the connections of the connection terminal plugs (g). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (h) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Open the top-hinged plastic cover (i).
- 10. Unplug the preamplifier cable (j) from the amplifier board.
- 11. Remove the inner screw (k) securing the transmitter housing.
- 12. Remove the outer screw (l) securing the transmitter housing.
- 13. Remove the connection from the earthing terminal (m)

- 14. Carefully pull the transmitter housing off the housing neck (n).



### Caution!

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.

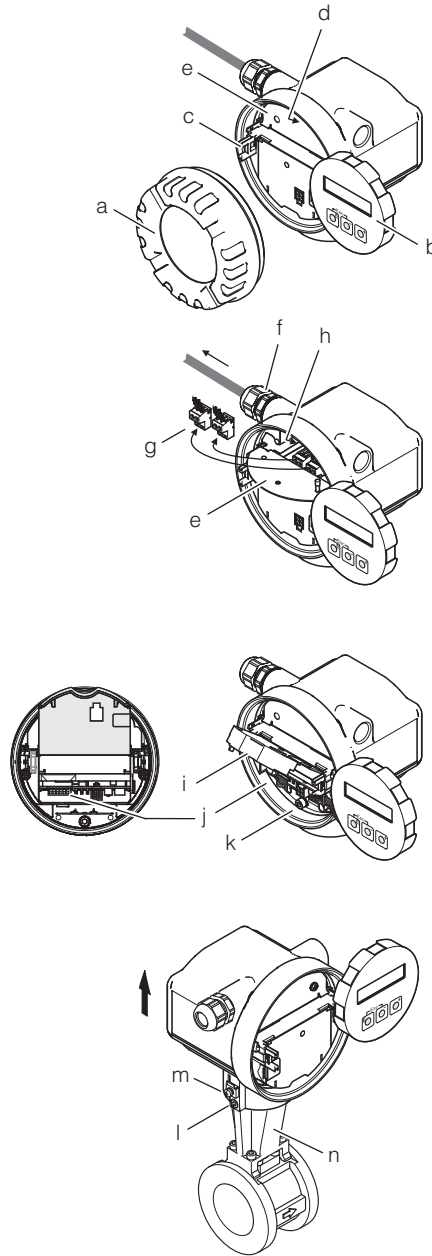



Fig. 2: Removing the transmitter housing, Ex-i (IS) version


- a = Cover of electronics compartment
- b = Local display module
- c = Retaining rails
- d = Threaded fastener of cover for connection compartment
- e = Cover for connection compartment
- f = Cable entry
- g = Connecting terminal plug
- h = Terminal for earthing cable
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Earthing terminal
- m = Outer securing screw for transmitter housing
- n = Housing neck

UA017\_013

**Ex-d (XP) version (Fig. 3)**

- 1. Switch off the power supply to the device.
- 2.  **Warning!**  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 6. Disconnect the connections of the connection terminal plugs (c). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (d) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Screw the cover of the electronics compartment (f) off the transmitter housing and pull the local display module (g) off the retaining rails (h).
- 10. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 11. Open the bottom-hinged plastic cover (d) and disconnect the plug of the preamplifier cable (i) from the measuring amplifier board.
- 12. Remove the inner screw (k) securing the transmitter housing.
- 13. Remove the outer screw (l) securing the transmitter housing.
- 14. Remove the connection from the earthing terminal (m)

- 15. Carefully pull the transmitter housing off the housing neck.

 **Caution!**

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.

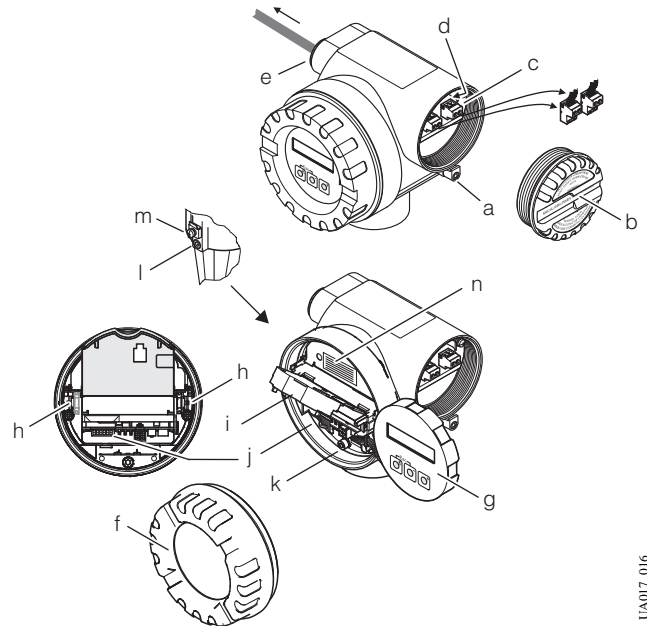
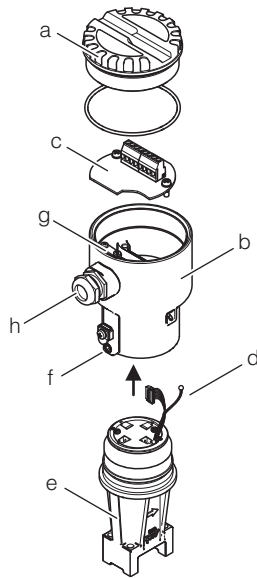


Fig. 3: Removing the transmitter housing, Ex-d (XP) version

- a = Clamp for cover of connection compartment
- b = Cover of connection compartment
- c = Connecting terminal plug
- d = Terminal for earthing cable
- e = Cable entry
- f = Cover of electronics compartment
- g = Local display module
- h = Retaining rails
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Outer securing screw for transmitter housing
- m = Earthing terminal
- n = Cover for connection compartment

UA017\_016

#### 4. Installing the connection housing (Fig. 4)



UA017\_012

Fig. 4: Installing the connection housing

- a = Housing cover
- b = Connection housing
- c = Connection board
- d = Preamplifier cable
- e = Housing neck
- f = Securing screw
- g = Cable grip
- h = Cable entry

- ❑ 1. Unscrew the cover (a) from the connection housing (b).
- ❑ 2. Slacken the screws securing the connection board (c) and remove the connection board from the connection housing.
- ❑ 3. Route preamplifier cable (d) from below through the remote-version connection housing (b) and connect the plug of preamplifier cable (d) on connection board (c) (on the underside of the connection board).
- ❑ 4. Install the connection board (c) in remote-version connection housing (b).
- ❑ 5. Position the remote-version connection housing (b) on housing neck (e).
- ❑ 6. Tighten the screw (f) securing the remote-version connection housing.
- ❑ 7. Open the threaded element of the strain relief device (g).
- ❑ 8. Open the threaded element of the cable entry (h).
- ❑ 9. Guide the connecting cable (connection between connection housing and transmitter) through the cable entry (h) and into the connection housing.
- ❑ 10. Connect the connecting cable.
  - Note!  
See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.
- ❑ 11. Install cable grip (g), making sure that the cable shield is underneath the grip.
- ❑ 12. Tighten the threaded element of the cable entry (h).
- ❑ 13. Screw the cover (a) onto the connection housing (b).

#### 5. Installing the transmitter (remote version)

- ❑ 1. Install the connection housing of the transmitter.



Note!

See the section entitled "Installation" → "Installing the transmitter remote version" in the Operating Instructions of the Prowirl 72, or Prowirl 73, as applicable, for a detailed description of the installation procedure.

#### 6. Connecting the connecting cable

- ❑ 1. Connect the cable between the connection housing and the transmitter (remote version) to the transmitter.

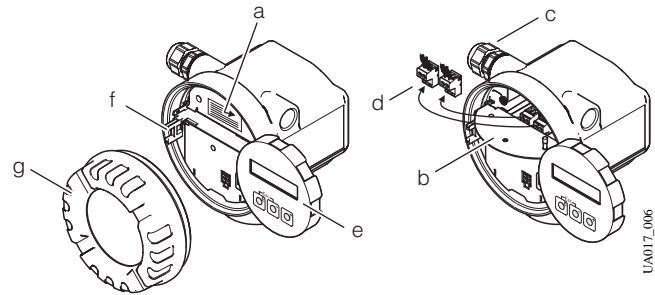


Note!

See the section entitled "Wiring" → "Connecting the remote version" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable, for a detailed description of the wiring.

#### 7. Wiring the transmitter

##### Ex-i (IS) version (Fig. 5 and Fig. 6)



UA017\_006

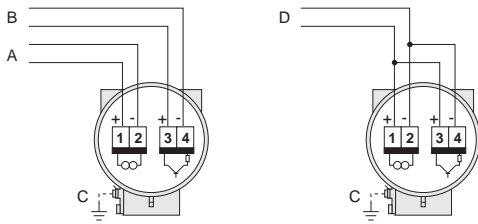
Fig. 5: Ex-i version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- ❑ 1. Screw the cover of the electronics compartment (g) off the transmitter housing.
- ❑ 2. Pull the local display module (e) off the retaining rails (f).
- ❑ 3. Clip the left side of the local display module (e) into the right-hand retaining rail (to hold the local display module temporarily in position).
- ❑ 4. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- ❑ 5. Open the threaded element of the cable entry (c).
- ❑ 6. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 7. Tighten the threaded element of the cable entry (c).
- ❑ 8. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).



- 9. Connect the connecting cable to the connection terminal plugs (d).



UA017\_007

Fig. 6: Electrical connections, transmitter

- A** = Power supply, current output
- B** = Optional pulse input, also usable as status output
- C** = Earthing clamp (relevant for remote version)
- D** = PFM wiring (Pulse/Frequency Modulation)

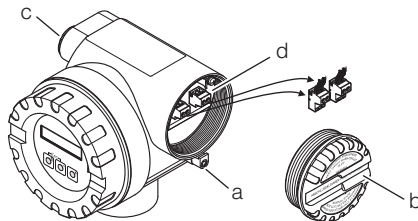
- 10. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- 11. Close the cover of the connection compartment (b) and tighten the screw (a).
- 12. Affix the new nameplate (Page 46 ) to the outside of the cover of the connection compartment (b).
- 13. Clip the local display module (e) into the retaining rails (f).
- 14. Screw the cover of the electronics compartment (g) onto the transmitter housing.

**Ex-d (XP) version (Fig. 6 and Fig. 7)**



UA017\_006

Fig. 7: Ex-d version

- a** = Clamp securing the cover of the connection compartment
- b** = Cover of connection compartment
- c** = Terminals
- d** = Cable entry

- 1. Open the clamp (a) securing the cover of the connection compartment.
- 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- 3. Open the threaded element of the cable entry (c).
- 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- 5. Tighten the threaded element of the cable entry (c).
- 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 6).

- 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
- 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

**8. Identifying the meter as "converted" (Fig. 3)**

- 1. Screw the cover of the electronics compartment (f) off the transmitter housing.
- 2. Pull the local display module (g) off the retaining rails (h).
- 3. Affix the new nameplate (Page 46 ) to the outside of the cover of the connection compartment (n).
- 4. Clip the local display module (g) into the retaining rails (h).
- 5. Screw the cover of the electronics compartment (f) onto the transmitter housing.

**9. Commissioning the device**

- 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 72 or the Prowirl 73, as applicable.

Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- 2. Key the parameters you read out beforehand into the device from the table on Page 5 (Prowirl 72) or Page 14 (Prowirl 73) (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 72 or Prowirl 73, as applicable).

This completes conversion; the device is now ready for operation.

- 3. Complete the form for the archives and send the information to the address printed on the form.

# Instructions for Conversion: Proline 72 compact version to Proline Prowirl 73 compact version



**Note!**

See Page 12 for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 73 transmitter	4	Screws for DSC sensor
1	Preamplifier	1	DSC sensor seal (flat gasket-type seal)
1	Housing neck including O-rings	1	Form for archives
4	Screws for housing neck	1	Nameplate for transmitter
1	DSC sensor	1	Instructions for Conversion

**Note the following points:**

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for the Proline Prowirl 73 is valid for the converted device.



**Caution!**

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

**1. Making a backup of the device data**



**Caution!**

Once you have completed conversion, you need the device parameters of the Prowirl 72 transmitter for commissioning. Without these values you would not be able to have the new transmitter in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 72. Use the table on Page 19 and enter the values in the column on the right, "Parameters Prowirl 72" → "Value to be entered". You can read the value for the basic unit MB from the flange of the Prowirl 72.

**2. Entering the data on the nameplate (Figure 1)**

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 72.

Sensorrelevante Daten: Sensor relevant data:	
TM: -40...+260°C	<input type="checkbox"/> -200...+400°C <input type="checkbox"/>
other:	<input type="checkbox"/>
Materials: CF3M (1.4404) / 316L (1.4435)	<input type="checkbox"/>
other:	<input type="checkbox"/>
Gasket: Graphite	<input type="checkbox"/> Gylon <input type="checkbox"/>
Viton	<input type="checkbox"/> Kalrez <input type="checkbox"/>

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

**3. Removing the transmitter housing**



**Caution!**

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

**Ex-i (IS) version (Fig. 2)**

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Slacken the screw (d) of the cover of the connection compartment (e) and open the bottom-hinged cover.
- 5. Open the threaded element of the cable entry (f).
- 6. Disconnect the connections of the connection terminal plugs (g). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (h) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Open the top-hinged plastic cover (i).
- 10. Unplug the preamplifier cable (j) from the amplifier board.
- 11. Remove the inner screw (k) securing the transmitter housing.
- 12. Remove the outer screw (l) securing the transmitter housing.
- 13. Remove the connection from the earthing terminal (m)
- 14. Carefully pull the transmitter housing off the housing neck (n).



**Caution!**

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.

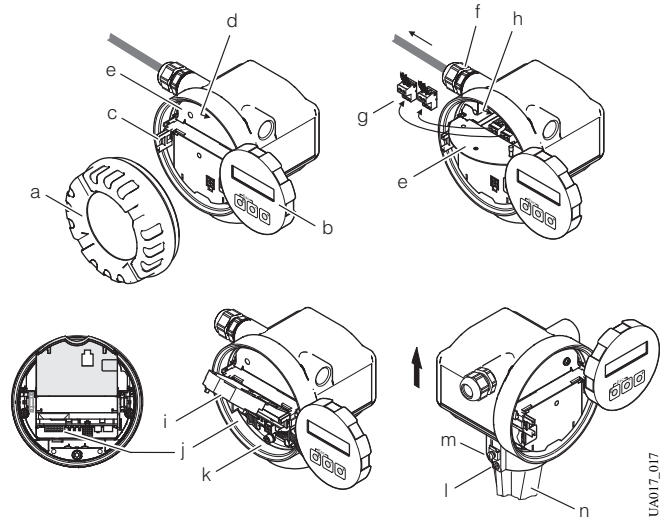



Fig. 2: Removing the transmitter housing, Ex-i (IS) version

- a = Cover of electronics compartment
- b = Local display module
- c = Retaining rails
- d = Threaded fastener of cover for connection compartment
- e = Cover for connection compartment
- f = Cable entry
- g = Connecting terminal plug
- h = Terminal for earthing cable
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Earthing terminal
- m = Outer securing screw for transmitter housing
- n = Housing neck

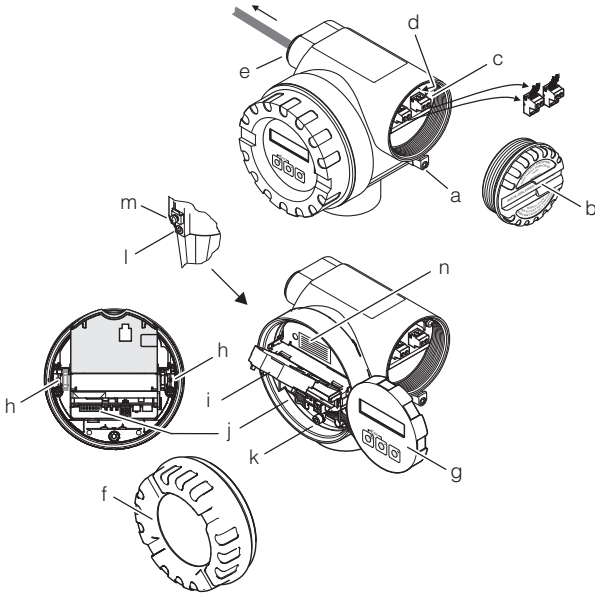
**Ex-d (XP) version (Fig. 3)**

- 1. Switch off the power supply to the device.
- 2. **Warning!**  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 6. Disconnect the connections of the connection terminal plugs (c). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (d) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Screw the cover of the electronics compartment (f) off the transmitter housing and pull the local display module (g) off the retaining rails (h).
- 10. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 11. Open the bottom-hinged plastic cover (d) and disconnect the plug of the preamplifier cable (i) from the measuring amplifier board.
- 12. Remove the inner screw (k) securing the transmitter housing.
- 13. Remove the outer screw (l) securing the transmitter housing.
- 14. Remove the connection from the earthing terminal (m)

- 15. Carefully pull the transmitter housing off the housing neck.

 **Caution!**

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.




UA017\_016

Fig. 3: Removing the transmitter housing, Ex-d (XP) version


- a = Clamp for cover of connection compartment
- b = Cover of connection compartment
- c = Connecting terminal plug
- d = Terminal for earthing cable
- e = Cable entry
- f = Cover of electronics compartment
- g = Local display module
- h = Retaining rails
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Outer securing screw for transmitter housing
- m = Earthing terminal
- n = Cover for connection compartment

#### 4. Replacing housing neck and sensor (Fig. 4)

 **Warning!**

Risk of fatal injury:


- The piping system must be completely free of pressure in order for the sensor to be replaced. Residual pressure acting on the piping run can cause the sensor to jump out as soon as the retaining screws are slackened.
- If the medium is toxic, explosive or flammable, the piping run in which the measuring device is installed must be flushed or purged before the sensor can be replaced.

 **Caution!**

When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

- 1. Remove the four screws (a) securing the housing neck (b).
- 2. Carefully disengage the housing neck (b) from the sensor (c).
- 3. Remove the four screws (d) securing the sensor.
- 4. Carefully remove the sensor (c) from the basic unit (e).
- 5. Using a suitable implement, remove the sensor seal (f) without scratching the sealing face.


- 6. Use as suitable solvent to clean the sealing face (g) of the basic unit.

 **Caution!**

- Take great care not to scratch the sealing face (g).
- The adapter bore must be perfectly clean.

- 7. Place the new sensor seal (f) on the sealing face (g).

- 8. Slip the new sensor (c) into the sensor bore of the basic unit (e).

 **Caution!**

The mark (h, small recess) on the sensor (h) must point in the flow direction (arrow on the basic unit).

- 9. Apply a drop of a grease appropriate to the temperature range of the application to the threads and seatings of each screw. The high temperature paste HTP (50048898) is recommended.

- 10. Secure the sensor (c) to the basic unit (e).  
Conversion of Prowirl 72\*\*\*\_\*\*0\*\*\*\*\* and 72\*\*\*\_\*\*1\*\*\*\*\*: tightening torque = 5.8Nm (4.3lbf ft), cross wise.  
Conversion of Prowirl 72\*\*\*\_\*\*2\*\*\*\*\*:  
1st step tightening torque = 10Nm (7.4lbf ft), cross wise;  
2nd step tightening torque = 15Nm (11.0lbf ft), cross wise

 **Note!**

- For DSC sensor replacement, the line needs to be completely depressurized.
- DSC Sensor replacement can only be performed by technically trained staff.
- The operator has to take appropriate precautions against injury when handling cot or hot objects. These precautionary actions have to comply with site safety and work instructions.
- The new gasket included in the conversion kit has to be used for the replacement. The old gasket has to be disposed off.
- If conversion is done at other temperatures of the piping than ambient temperature, the torques should be adjusted according to the table below.
- Sensor, bolts and meter body need to be at the same temperature for conversion. Therefore first mount DSC sensor with bolts tightened slightly by hand. Then allow the DSC sensor to reach the meter body temperature prior to tightening the retaining bolts with the given torques.
- For devices according to ATEX II 1/2GD and ATEX II 1/2G, the devices have to be pressure tested after DSC sensor replacement. The pressure test has to be done at a test pressure of 1.5 times design pressure.

Temp. [°C]/[F]	Conversion of 72***_**0***** and 72***_**1***** Torque [Nm]/[lbf ft]	Conversion of 72***_**2***** Torque [Nm]/[lbf ft]	
		Step 1	Step 2
		-200/-328	5.8/4.3
-50/-58	5.8/4.3	10.0/7.4	15.0/11.0
-40/-40	5.8/4.3	10.0/7.4	15.0/11.0
20/68	5.8/4.3	10.0/7.4	15.0/11.0
100/212	4.9/3.6	8.5/6.3	12.7/9.4
200/392	4.6/3.4	7.9/5.8	11.9/8.8
260/500	4.5/3.3	7.8/5.7	11.6/8.6
300/572	4.4/3.2	7.6/5.6	11.4/8.4
400/752	not recommended	7.0/5.2	10.5/7.7

- 11. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.

- 12. Tighten the four screws (a) securing the housing neck (b).  
Tightening torque = 5.8Nm (4.3lbf ft); tighten in diagonally opposite sequence in three uniform steps
- 13. Coat the O-ring (i) with silicone grease (the O-ring is fitted to the housing neck).

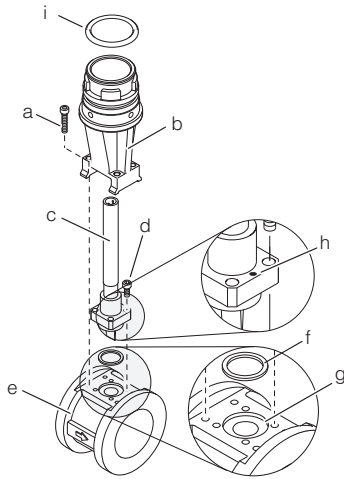


Fig. 4: Replacing housing neck and sensor  
 a = Threaded fastener of housing neck  
 b = Housing neck  
 c = Sensor  
 d = Threaded fastener of sensor  
 e = Basic unit  
 f = Sensor seal  
 g = Sealing face of basic unit  
 h = Mark on sensor (must point in direction of flow)  
 i = O-ring of housing neck (fitted)

**5. Installing the new preamplifier (Fig. 5)**

- 14. Slip the preamplifier (a) into the housing neck (b).
- Note!  
 The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.
- 15. Tighten the two securing screws (c) to secure the preamplifier (a).

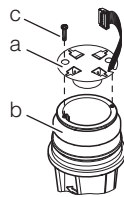


Fig. 5: Replacing the housing neck / installing the preamplifier  
 a = Preamplifier  
 b = Housing neck  
 c = Threaded fastener of preamplifier

**6. Installing the new transmitter (Fig. 6)**

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Open the top-hinged plastic cover (d).

- 5. Remove the inner screw (h) securing the transmitter.
  - 6. From below, guide the connecting cable (e) through the transmitter housing and set the transmitter housing on the housing neck (f).
- Note!  
 The end of the connecting cable emerges from the transmitter housing underneath the holder for the electronics.
- 7. Tighten the inner screw (h) securing the transmitter housing.
  - 8. Tighten the outer screw securing the transmitter housing (see Fig.3, c).
  - 9. Connect the connecting cable (e) to the plug (g) of the amplifier board.
  - 10. Secure the connecting cable to the retainer below the connecting-cable plug (g).
  - 11. Close the top-hinged plastic cover (d).
  - 12. Affix the new nameplate (Page 51 ) to the outside of the cover of the connection compartment (i).

**Steps 13 and 14 are required only in the case of the Ex-d (XP) versions:**

- 13. Clip the local display module (b) into the retaining rails (c).
- 14. Screw the cover of the electronics compartment (a) onto the amplifier housing.

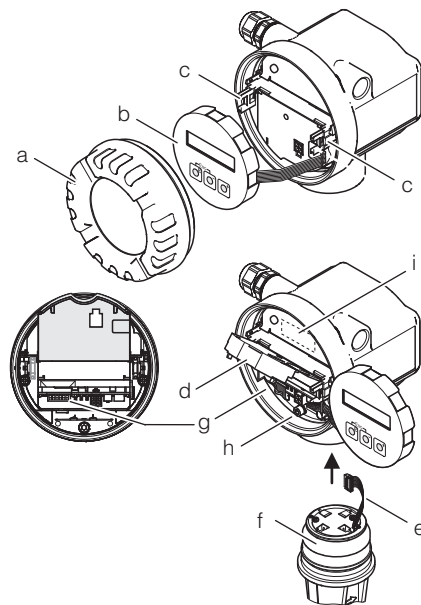
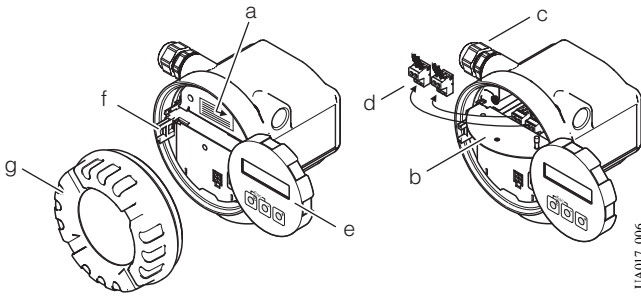


Fig. 6: Installing the transmitter  
 a = Cover of electronics compartment  
 b = Local display module  
 c = Retaining rails  
 d = Plastic cover  
 e = Connecting cable, preamplifier/measuring-amplifier board  
 f = Housing neck  
 g = Plug for connecting cable on measuring-amplifier board  
 h = Inner securing screw  
 i = New nameplate on cover of connection compartment

## 7. Wiring the transmitter

### Non-Ex, Ex-i (IS) version (Fig. 8 and Fig. 7)

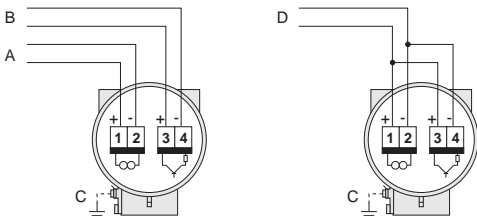


UA017\_006

Fig. 7: Non-Ex / Ex-i (IS) version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- 1. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- 2. Open the threaded element of the cable entry (c).
- 3. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- 4. Tighten the threaded element of the cable entry (c).
- 5. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- 6. Connect the connecting cable to the connection terminal plugs (d).



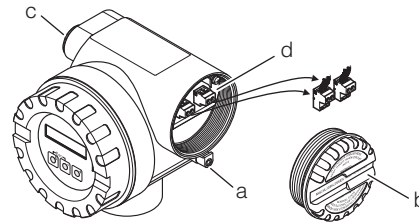
UA017\_007

Fig. 8: Electrical connections, transmitter

- A = Power supply, current output
- B = Pulse, status output (optional)
- C = Earthing terminal
- D = PFM wiring (Pulse/Frequency Modulation)

- 7. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).
- Note!**
- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
  - Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.
- 8. Close the cover of the connection compartment (b) and tighten the screw (a).
  - 9. Clip the local display module (e) into the retaining rails (f).
  - 10. Screw the cover of the electronics compartment (g) onto the transmitter housing.

### Ex-d (XP) version (Fig. 8 and Fig. 9)



UA017\_008

Fig. 9: Ex-d version

- a = Clamp securing the cover of the connection compartment
- b = Cover of connection compartment
- c = Terminals
- d = Cable entry

- 1. Open the clamp (a) securing the cover of the connection compartment.
  - 2. Screw the cover of the connection compartment (b) off the transmitter housing.
  - 3. Open the threaded element of the cable entry (c).
  - 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
  - 5. Tighten the threaded element of the cable entry (c).
  - 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
  - 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 8).
  - 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).
- Note!**
- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
  - Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.
- 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
  - 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

## 8. Commissioning the device

- 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 73.



### Caution!

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- 2. Key the parameters you read out beforehand Page 19 into the device from the table (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 73.

Parameterization completes conversion; the device is now ready for operation.

- 3. Complete the form for the archives and send the information to the address printed on the form.

# Instructions for Conversion: Proline Prowirl 72 remote version to Proline Prowirl 73 remote version

## Note!

See Page 12 for an overview of all possible conversions. When converting, use only the Instructions for Conversion listed in the overview for the conversion job in question.

The components required for conversion are as follows:

Units	Designation	Units	Designation
1	Prowirl 73 transmitter	4	Screws for DSC sensor
1	Preamplifier	1	DSC sensor seal (flat gasket-type seal)
1	Housing neck including O-rings	1	Form for archives
4	Screws for housing neck	1	Nameplate for transmitter
1	DSC sensor	1	Instructions for Conversion

## Note the following points:

- It is important to comply with the documentation specific to the meters in question in addition to these Instructions for Conversion, see Page 20:
- Installation, repair, commissioning and maintenance of the measuring equipment must be carried out by qualified, trained specialists. Conversions in Ex-rated zones, moreover, must be carried out by qualified specialists trained to work on Ex-rated devices.
- Always comply with national regulations concerning the overhaul and modification of officially approved or certified electrical devices.
- Risk of damaging electronic components (ESD protection).  
Static electricity can damage electronic components or impair their operability. Use an ESD-compatible workbench with a grounded worktop or make sure that you are connected to ground by means of a grounding cable (anti-static wrist strap with 1 MΩ protective resistance), as applicable.
- Ensure compliance with all safety instructions (introduced by "Warning!", "Caution!", "Note") before you commence the individual steps of the installation procedure. Document completion of each step by marking the accompanying checkbox (☐).
- Once you have completed conversion, complete the form for the archives and send the information to the address printed on the form.
- Once conversion has been completed, the documentation for the Proline Prowirl 73 is valid for the converted device.

## Caution!

- Conversion of meters compliant with the pressure equipment directive (PED 97/23/EC) is **not** permissible. Invariably, these meters have to be converted by Endress+Hauser Flowtec.
- Conversion work on meters with PROFIBUS or FOUNDATION Fieldbus communication should be performed by Endress+Hauser Service.
- Devices with FM or CSA approval must be converted by Endress+Hauser Flowtec or Endress+Hauser Service only.

## 1. Making a backup of the device data



### Caution!

Once you have completed conversion, you need the device parameters of the Prowirl 72 transmitter for commissioning. Without these values you would not be able to have the new transmitter in operation within a short space of time.

- 1. Read out the device parameters of the Prowirl 72. Use the table on Page 19 and enter the values in the column on the right, "Parameters Prowirl 72" → "Value to be entered". You can read the value for the basic unit MB from the flange of the Prowirl 72.

## 2. Entering the data on the nameplate (Figure 1)

- 1. Enter the data on the new nameplate. You will find the data you need on the nameplate of the Prowirl 72.

Sensorrelevante Daten: Sensor relevant data:	
TM:	-40...+260°C <input type="checkbox"/> -200...+400°C <input type="checkbox"/>
other:	<input type="checkbox"/>
Materials:	CF3M (1.4404) / 316L (1.4435) <input type="checkbox"/>
other:	<input type="checkbox"/>
Gasket:	Graphite <input type="checkbox"/> Gylon <input type="checkbox"/>
	Viton <input type="checkbox"/> Kalrez <input type="checkbox"/>

UA017\_000

Fig. 1: Example of a nameplate; the nameplate is subsequently affixed to the cover of the connection compartment.

## 3. Removing the transmitter housing



### Caution!

When converting measuring devices used in explosive atmospheres, always comply with the local regulations and safety precautions required by the owner-operator.

### Ex-i (IS) version (Fig. 2)

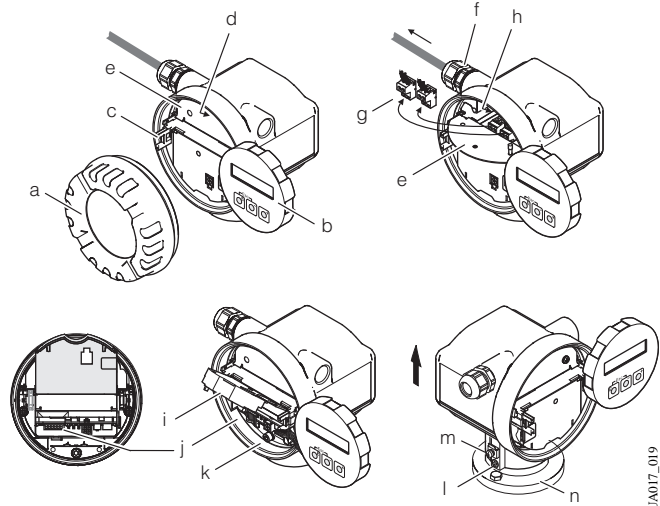
- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
- 4. Slacken the screw (d) of the cover of the connection compartment (e) and open the bottom-hinged cover.
- 5. Open the threaded element of the cable entry (f).
- 6. Disconnect the connections of the connection terminal plugs (g). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (h) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Open the top-hinged plastic cover (i).
- 10. Unplug the preamplifier cable (j) from the amplifier board.
- 11. Remove the inner screw (k) securing the transmitter housing.
- 12. Remove the outer screw (l) securing the transmitter housing.
- 13. Remove the connection from the earthing terminal (m)

- 14. Carefully pull the transmitter housing off the holder of the remote version (n).



### Caution!

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.



UA017\_019

Fig. 2: Removing the transmitter housing, Ex-i (IS) version

- a = Cover of electronics compartment
- b = Local display module
- c = Retaining rails
- d = Threaded fastener of cover for connection compartment
- e = Cover for connection compartment
- f = Cable entry
- g = Connecting terminal plug
- h = Terminal for earthing cable
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Earthing terminal
- m = Outer securing screw for transmitter housing
- n = Holder of the transmitter, remote version

### Ex-d (XP) version (Fig. 3)

- 1. Switch off the power supply to the device.
- 2. Warning!  
For safety's sake, wait at least 10 minutes before proceeding with the next step.
- 3. Open the clamp (a) securing the cover of the connection compartment.
- 4. Screw the cover of the connection compartment (b) off the transmitter housing.
- 5. Slacken the threaded fastener of the cable duct (if installed) and of the cable entry (e).
- 6. Disconnect the connections of the connection terminal plugs (c). You must pull the connection terminal plugs off the I/O board (COM module) for this process.
- 7. Disconnect the connection to terminal (d) of the earthing cable (if fitted).
- 8. Carefully pull the connecting cable out of the transmitter housing.
- 9. Screw the cover of the electronics compartment (f) off the transmitter housing and pull the local display module (g) off the retaining rails (h).
- 10. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).



- 11. Open the bottom-hinged plastic cover (d) and disconnect the plug of the preamplifier cable (i) from the measuring amplifier board.
- 12. Remove the inner screw (k) securing the transmitter housing.
- 13. Remove the outer screw (l) securing the transmitter housing.
- 14. Remove the connection from the earthing terminal (m)
- 15. Carefully pull the transmitter housing off the holder of the remote version.



**Caution!**

When separating the transmitter housing from the neck, take care not to damage the preamplifier cable.

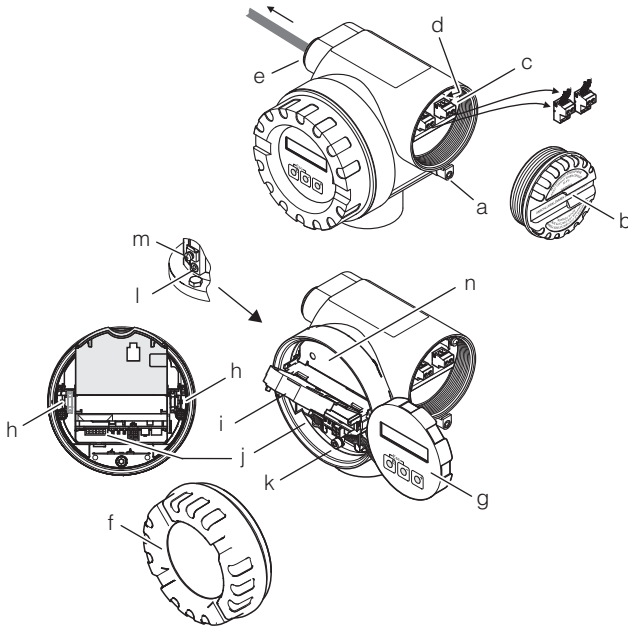


Fig. 3: Removing the transmitter housing, Ex-d (XP) version

- a = Clamp for cover of connection compartment
- b = Cover of connection compartment
- c = Connecting terminal plug
- d = Terminal for earthing cable
- e = Cable entry
- f = Cover of electronics compartment
- g = Local display module
- h = Retaining rails
- i = Plastic cover
- j = Preamplifier-cable plug
- k = Inner securing screw for transmitter housing
- l = Outer securing screw for transmitter housing
- m = Earthing terminal
- n = Cover for connection compartment

#### 4. Installing the new transmitter (Fig. 4)

- 1. Screw the cover of the electronics compartment (a) off the transmitter housing.
- 2. Pull the local display module (b) off the retaining rails (c).
- 3. Clip the left side of the local display module (b) into the right-hand retaining rail (to hold the local display module temporarily in position).
  - 4. Open the top-hinged plastic cover (d).
- 5. Remove the inner screw (h) securing the transmitter.

- 6. From below, guide the connecting cable (e) through the transmitter housing and set the transmitter housing on the holder, remote version (f).

**Note!**

The end of the connecting cable emerges from the transmitter housing underneath the holder for the electronics.

- 7. Tighten the inner screw (h) securing the transmitter housing.
- 8. Tighten the outer screw securing the transmitter housing (see Fig. 3, c).
- 9. Connect the connecting cable (e) to the plug (g) of the amplifier board.
- 10. Secure the connecting cable to the retainer below the connecting-cable plug (g).
- 11. Close the top-hinged plastic cover (d).
- 12. Affix the new nameplate (Page 56 ) to the outside of the cover of the connection compartment (i).

**Steps 13 and 14 are required only in the case of the Ex-d (XP) versions:**

- 13. Clip the local display module (b) into the retaining rails (c).
- 14. Screw the cover of the electronics compartment (a) onto the amplifier housing.

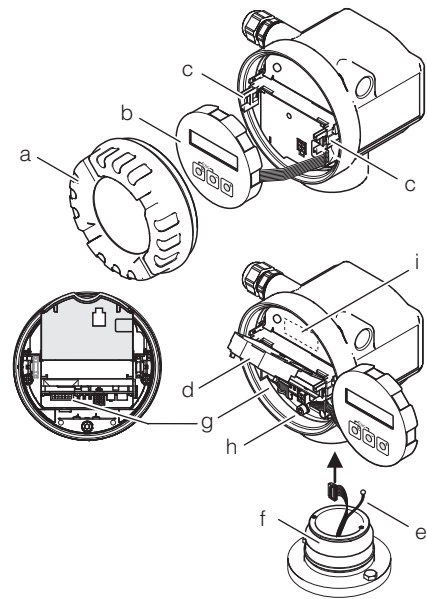
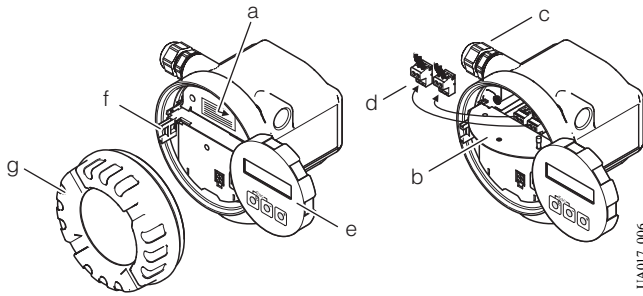


Fig. 4: Installing the transmitter

- a = Cover of electronics compartment
- b = Local display module
- c = Retaining rails
- d = Plastic cover
- e = Connecting cable, preamplifier/measuring-amplifier board
- f = Holder of the transmitter, remote version
- g = Plug for connecting cable on measuring-amplifier board
- h = Inner securing screw
- i = New nameplate on cover of connection compartment

## 5. Wiring the transmitter

### Non-Ex, Ex-i (IS) version (Fig. 5 and Fig. 6)

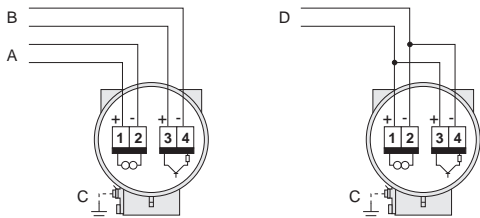


UA017\_006

Fig. 5: Non-Ex / Ex-i (IS) version

- a = Threaded fastener of cover for connection compartment
- b = Cover for connection compartment
- c = Cable entry
- d = Connecting terminal plug
- e = Local display module
- f = Retaining rails
- g = Cover of electronics compartment

- ❑ 1. Slacken the screw (a) of the cover of the connection compartment (b) and open the bottom-hinged cover.
- ❑ 2. Open the threaded element of the cable entry (c).
- ❑ 3. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 4. Tighten the threaded element of the cable entry (c).
- ❑ 5. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 6. Connect the connecting cable to the connection terminal plugs (d).



UA017\_007

Fig. 6: Electrical connections, transmitter

- A = Power supply, current output
- B = Pulse, status output (optional)
- C = Earthing terminal
- D = PFM wiring (Pulse/Frequency Modulation)

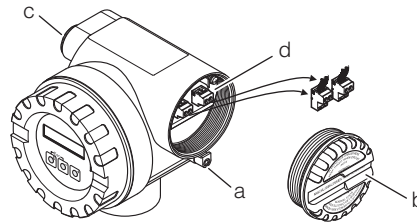
- ❑ 7. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

#### Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- ❑ 8. Close the cover of the connection compartment (b) and tighten the screw (a).
- ❑ 9. Clip the local display module (e) into the retaining rails (f).
- ❑ 10. Screw the cover of the electronics compartment (g) onto the transmitter housing.

### Ex-d (XP) version (Fig. 6 and Fig. 7)



UA017\_008

Fig. 7: Ex-d version

- a = Clamp securing the cover of the connection compartment
- b = Cover of connection compartment
- c = Terminals
- d = Cable entry

- ❑ 1. Open the clamp (a) securing the cover of the connection compartment.
- ❑ 2. Screw the cover of the connection compartment (b) off the transmitter housing.
- ❑ 3. Open the threaded element of the cable entry (c).
- ❑ 4. Guide the connecting cable through the cable entry (c) and into the connection compartment.
- ❑ 5. Tighten the threaded element of the cable entry (c).
- ❑ 6. Pull the connection terminal plug (d) or plugs, depending on the design, off the I/O board (COM module).
- ❑ 7. Connect the connecting cable to the connection terminal plugs (d) (wiring diagram, see Fig. 6).
- ❑ 8. Reconnect the connection terminal plug or plugs (d) to the I/O board (COM module).

#### Note!

- The connection terminal plugs are coded, which means that they cannot be connected wrong way round.
- Check that the connecting cable is correctly routed in the transmitter housing and that there is no strain on the connections to the plugs.

- ❑ 9. Screw the cover of the connection compartment (b) onto the transmitter housing.
- ❑ 10. Engage the clamp (c) to hold the cover of the connection compartment (b) in position and tighten the threaded fastener of the clamp.

## 6. Installing the remote connection housing (Fig. 4)

- ❑ 1. Unscrew the cover (a) from the remote-version connection housing (b).
- ❑ 2. Slacken cable grip (g).
- ❑ 3. Slacken cable entry (h).
- ❑ 4. Remove the screws of the connection board (c).
- ❑ 5. Raise the connection board slightly (the plug of the preamplifier cable on the underside of the connection board must be visible). Guide the connecting cable through the cable entry (h) to obtain enough play.
- ❑ 6. Disconnect the plug of the preamplifier cable (d) from the connection board (c) (on the underside of the connection board).
- ❑ 7. Remove the screw (f) securing the remote-version connection housing.

- 8. Pull the remote-version transmitter housing (b) off the housing neck (e).

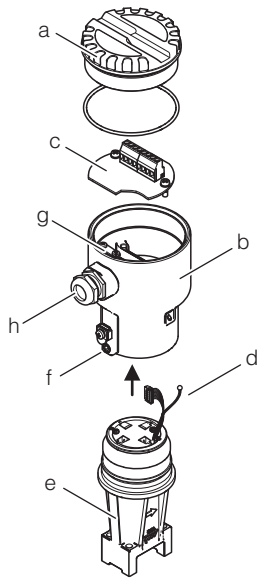


Fig. 8: Installing the remote connection housing  
 a = Housing cover  
 b = Remote connection housing  
 c = Connection board  
 d = Preamplifier cable  
 e = Housing neck  
 f = Securing screw  
 g = Cable grip  
 h = Cable entry

**7. Replacing housing neck and sensor (Fig. 9)**



- Warning!**  
 Risk of fatal injury:
- The piping system must be completely free of pressure in order for the sensor to be replaced. Residual pressure acting on the piping run can cause the sensor to jump out as soon as the retaining screws are slackened.
  - If the medium is toxic, explosive or flammable, the piping run in which the measuring device is installed must be flushed or purged before the sensor can be replaced.



**Caution!**  
 When converting the measuring device, replace all small items (screws, etc.) with the material supplied as part of the conversion kit.

- 1. Remove the four screws (a) securing the housing neck (b).
- 2. Carefully disengage the housing neck (b) from the sensor (c).
- 3. Remove the four screws (d) securing the sensor.
- 4. Carefully remove the sensor (c) from the basic unit (e).
- 5. Using a suitable implement, remove the sensor seal (f) without scratching the sealing face.
- 6. Use as suitable solvent to clean the sealing face (g) of the basic unit.



- Caution!**
- Take great care not to scratch the sealing face (g).
  - The adapter bore must be perfectly clean.

- 7. Place the new sensor seal (f) on the sealing face (g).

- 8. Slip the new sensor (c) into the sensor bore of the basic unit (e).



**Caution!**  
 The mark (h, small recess) on the sensor (h) must point in the flow direction (arrow on the basic unit).

- 9. Apply a drop of a grease appropriate to the temperature range of the application to the threads and seatings of each screw. The high temperature paste HTP (50048898) is recommended.
- 10. Secure the sensor (c) to the basic unit (e).  
 Conversion of Prowirl 72\*\*\*\_\*\*0\*\*\*\*\* and 72\*\*\*\_\*\*1\*\*\*\*\*: tightening torque = 5.8Nm (4.3lbf ft), cross wise.  
 Conversion of Prowirl 72\*\*\*\_\*\*2\*\*\*\*\*:  
 1st step tightening torque = 10Nm (7.4lbf ft), cross wise;  
 2nd step tightening torque = 15Nm (11.0lbf ft), cross wise

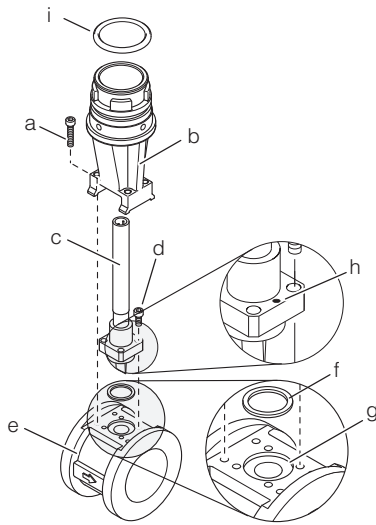


- Note!**
- For DSC sensor replacement, the line needs to be completely depressurized.
  - DSC sensor replacement can only be performed by technically trained staff.
  - The operator has to take appropriate precautions against injury when handling cot or hot objects. These precautionary actions have to comply with site safety and work instructions.
  - The new gasket included in the conversion kit has to be used for the replacement. The old gasket has to be disposed off.
  - If conversion is done at other temperatures of the piping than ambient temperature, the torques should be adjusted according to the table below.
  - Sensor, bolts and meter body need to be at the same temperature for conversion. Therefore first mount DSC sensor with bolts tightened slightly by hand. Then allow the DSC sensor to reach the meter body temperature prior to tightening the retaining bolts with the given torques.
  - For devices according to ATEX II 1/2GD and ATEX II 1/2G, the devices have to be pressure tested after DSC sensor replacement. The pressure test has to be done at a test pressure of 1.5 times design pressure.

Temp. [°C]/[F]	Conversion of 72***_**0***** and 72***_**1***** Torque [Nm]/[lbf ft]	Conversion of 72***_**2***** Torque [Nm]/[lbf ft]	
		Step 1	Step 2
		-200/-328	5.8/4.3
-50/-58	5.8/4.3	10.0/7.4	15.0/11.0
-40/-40	5.8/4.3	10.0/7.4	15.0/11.0
20/68	5.8/4.3	10.0/7.4	15.0/11.0
100/212	4.9/3.6	8.5/6.3	12.7/9.4
200/392	4.6/3.4	7.9/5.8	11.9/8.8
260/500	4.5/3.3	7.8/5.7	11.6/8.6
300/572	4.4/3.2	7.6/5.6	11.4/8.4
400/752	not recommended	7.0/5.2	10.5/7.7

- 11. Carefully slip the new housing neck (b) over the sensor (c). Make sure that the arrow on the housing neck is pointing in the direction of flow.
- 12. Tighten the four screws (a) securing the housing neck (b). Tightening torque = 5.8Nm (4.3lbf ft); tighten in diagonally opposite sequence in three uniform steps

13. Coat the O-ring (i) with silicone grease (the O-ring is fitted to the housing neck).



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**Fig. 9:** Replacing housing neck and sensor  
*a = Threaded fastener of housing neck*  
*b = Housing neck*  
*c = Sensor*  
*d = Threaded fastener of sensor*  
*e = Basic unit*  
*f = Sensor seal*  
*g = Sealing face of basic unit*  
*h = Mark on sensor (must point in direction of flow)*  
*i = O-ring of housing neck (fitted)*

- 6. Tighten the threaded element of the cable entry (h).
- 7. Screw the cover (a) onto the connection housing (b).

## 10. Commissioning the device

- 1. Switch on the power supply to the device:  
See the section entitled "Commissioning", "Switching on the device" in the Operating Instructions of the Prowirl 73.



**Caution!**

If the device is in an Ex-rated zone, the appropriate Ex documentation and the Control Drawings also apply.

- 2. Key the parameters you read out beforehand Page 19 into the device from the table (see also the section entitled "Commissioning", "Quick Setup" in the Operating Instructions of the Prowirl 73.

Parameterization completes conversion; the device is now ready for operation.

- 3. Complete the form for the archives and send the information to the address printed on the form.

## 8. Installing the new preamplifier (Fig. 10)

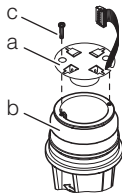
- 1. Slip the preamplifier (a) into the housing neck (b).



**Note!**

The housing neck has a guide to ensure that the preamplifier can be installed only in the correct position.

- 2. Tighten the two securing screws (c) to secure the preamplifier (a).



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**Fig. 10:** Replacing the housing neck / installing the preamplifier  
*a = Preamplifier*  
*b = Housing neck*  
*c = Threaded fastener of preamplifier*

## 9. Installing the remote connection housing (Fig. 8)

- 1. Route preamplifier cable (d) from below through the remote-version connection housing (b) and connect the plug of preamplifier cable (d) on connection board (c) (on the underside of the connection board).
- 2. Install the connection board (c) in remote-version connection housing (b).
- 3. Position the remote-version connection housing (b) on housing neck (e).
- 4. Tighten the screw (f) securing the remote-version connection housing.
- 5. Tighten the threaded element of the cable grip (g).



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