Instrumentation as already delivered with B07-1004 ...
(probe for Di 900 mm)

VA40/21,3-500GE 40 m/s 100 / p3 ZG7 + LCD
with S/N: va40 1796 E 100 °C
with settings: 4 … 20 mA = 0 … 26.20 m/s = 0 … 60000 Nm³/h in Di 900 mm

Originally Measuring Function

Measurement of flow in clean, moist air which is not liable to condensation.
- max. flow: 60000 Nm3/h
  Measurement of the actual volume flow sufficient*
- scaling must be: 4 … 20 mA = 0 … 26,20 m/s = 0 … 60000 Nm3/h
- Inside diameter of measuring tube Di 900 mm
- Temperature approx. +40 °C
- Pressure approx. 120 mbar rel.
- Explosion protection is not required!

*** Note regarding the actual and the standard volume flow:**

Pos. Description Quantity

the integrated transducer UVA allows to switch from actual/standard flow with setting parameters 'working pressure' and 'working temperature'.

Measuring Range Calculations:

Measuring range v / V/t at 40 m/s (actual volume flow)
With steady turbulent flow profile and irrotational flow, sensor positioning at any point with the relevant profile factor PF = 1.000 in a tube of Di 900 mm, a measurable actual flow rate up to 91608 m³/h follows.

By a local actual flow velocity at the sensor in Di 900 mm:

1 m/s $_{local}$ = 1 m/s $_{average}$= 2290 m³/h

Measuring range v / NV/t at 40 m/s (standard volume flow)
With steady turbulent flow profile and irrotational flow, sensor positioning at any point with the relevant profile factor PF = 1.000 in a tube of Di 900 mm, a measurable standard flow rate up to 89136 m³/h* follows.

By a local actual flow velocity at the sensor in Di 900 mm:

1 m/s $_{local}$ = 1 m/s $_{average}$= 2228 Standard-m³/h

* Values apply exact only for a working pressure of 1.133 bar abs. and a working temperature of +40 °C.

Standard basis : Standard temperature t_n =0 °C,
standard pressure p_n = 1013 mbar absolute

Vortex Flow Sensor VA:

1 B009/710 1

VA40/21,3-500GE 40 m/s 100 / p3 ZG7
Vortex flow sensor VA as in Drawing 7, rectangular sensor piece, width across corners 40 mm

Measuring range air/gases : 0.5 ... 40 m/s, actual flow velocity **v**
Working temperature range : -20 ... +100 °C
Maximum working pressure : up to 3 bar/300 kPa overpressure
Materials : stainless steel, ceramics,
sensor housing 1.4581,
probe tube 1.4404,
VITON, sensor silicone-free

Pos.	Description	Quantity

Installation length : 500 mm fixed length
Connection housing : AS80, L·W·H = 80 x 80 x 60 mm
Protective system : sensor IP68
connection housing IP65

with integrated probe guide piece
SFB 21,3 E-53 / G 1½" ZG5

Probe guide piece SF for connection to pipe sleeves or ball valve with inside thread G 1½". Probe attachment by clamping bush. Ball valves can only be closed after removing the probe.

Installation length : approx. 53 mm
Through hole : 21.3 mm
Material : stainless steel
Seal : VITON, PTFE clamping bush
Connection thread : outside thread G 1½"
thread length 22 mm

Calibration values v/t : 6 values
Calibration medium : air

with integrated transducer
UVA

Output flow : 4 ... 20 mA, burden max. 400 Ohm
Output : open collector, max. 50 mA, limit value v or quantity pulse, max. 27 V DC
Interface RS232 : for setting the parameters with UCOM software
Power supply : 24 V DC (20 ... 27 V DC)
Connection : surface mounted connector GO 070, for cable with outside diameter 4 ... 10 mm

Parameter set no. : **00000**
for transducers UVA

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LCD display with quantity counter
illuminated, inbuilt

Pos.	Description	Quantity

LCD display	: 2 x 16 digit, 3mm high
Working temperature range	: -5 ... +50 °C
Display units:	
Row 1: instantaneous value	: **‘(N)m/s <1> or (N)m³/h <2>‘,** <1> - <2> selectable with internal jumper 'm/s - m³/h'
Row 2: quantity counter	**(N)m³** with reset button

Remark

Compatibility material / medium
Please check the compatibility of the given materials with your medium.

Cleaning VA sensors
Notes on cleaning the sensors can be found in the manual.

Solid matter laden gases
When measuring in solid matter laden gases the sensor VA ought to be cleaned from time to time as necessary. The time interval depends on the type and content of the solid matter.
The particles must not be abrasive.

Moisture or condensate in gases
Moisture in gases is of no disadvantage as long as condensate does not set in. Should condensate arise then it can influence the measurement. The limitations between 100% saturated flow of gas, partial condensate attack on the sensor, severe or slight continuous condensate attack are flowing.The probability of condensate influencing measurement can be kept to a minimum by ensuring that the probe is horizontally positioned in the case of partial or slight condense making drainage at the strut and ultrasonic sender and receiver easier.

Pos.	Description	Quantity

Input and output sections
When measuring in a measurement section of inside diameter Di it must be observed that optimal measurement accuracy when converting the local velocity v_p to the average velocity $v_m = v_p \cdot PF$ (PF = profile factor) is only guaranteed for when input/ouptut sided irrotational flow prevails and in addition the condition

- 20 Di straight, undisturbed input section
- 10 Di straight, undisturbed output section

is met with.

Should a suitably long, straight section line not be available then the measurement cross section is to be placed so that 2/3 of the straight pipe section are in front of the measurement cross section and 1/3 behind the measurement cross section.

Assembly instruction probe guide piece with thread connection
The connection thread of probe guide piece is not greased. Use temperature and media compatible lubricant for assembly.

Accessories: ***if necessary ...***

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UCOM Version 1.15
PC software for configuring transducers UFA, UVA, UTA, U10M, U10a, U10, U12-Ex and U15-Ex; on CD-ROM; follower of software FCOM and UTACOM.

4	A010/004	1

Programming adapter GO 070 / RS232
for configuring transducers with RS232 interface and cable socket GO 070, plug to mains supply 230VAC/24VDC

PC connection	: Sub-D 9-pin
system requirements	: PC with Höntzsch configuration software

Pos.	Description	Quantity
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Interface converter USB / RS232
PC connection : USB plug type A
programming adapter : Sub-D 9-pin

Manual / Documentation
1x per instrumentation free of charge, in German or English, as paper document or CD-ROM. CD-ROM with WORD and PDF documents.

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Handbuch HB_UVA03_e

- Technical Data Sheet : t___
- Data Sheet VA ... ZG7 with UVA : U307
- User's Information Probes VA : U206
- Operating Instructions UVA in AS80 : U329
- **Factory setting**
- Data Sheet Calibration : U325

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