

Quick start guide | Arenal | QA03-SDA

KWR-7QA03-931E

	Weldolet	Spoolpiece	Wafer
1	<p>Preferred mounting position is in turbulent flow. In case of horizontal pipeline see above.</p>		
2	<p>weld weldolet to pipe</p>	<p>install spoolpiece</p>	<p>install wafer</p>
3	<p>insert drill piece and drill hole</p>	<p>insert bolts (and gaskets)</p>	<p>insert bolts</p>
4	<p>insert probe assembly and tighten bolts</p>	<p>tighten bolts</p>	<p>tighten bolts</p>
5	<p>connect Modbus cable to UDT according to scheme</p> <ul style="list-style-type: none"> A+ = Yellow B- = Green GND = White 24V = Brown 		
6	<p>connect Modbus and power cable cable to Analyser according to scheme</p> <ul style="list-style-type: none"> Power Earth 24V = Brown GND = White B- = Green A+ = Yellow 		
	<p>STOP IMPORTANT: Before You Continue...</p> <ul style="list-style-type: none"> -Always unplug power when working on a system! -In case of weldolet drill hole 36mm. See installation guide for info. -Make sure probe is mounded flush with pipe ID. -In case probe does not come pre-connector do UDT. Connect coax and PT1000 cable. -Make sure all cable glands, lids and screws are tightened to prevent moisture damage. 		

For more settings, information and FAQ please see User Manual

Quick start guide | Arenal | QA03-SDA

KWR-7QA03-931E

1. Unpacking

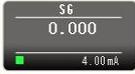
- Check if shipment does not have visual damage and check for completeness with packing list.
- In case of more than 1 system make sure all components (Analyser, USB, Transmitter and Probe) are kept with same system number! The separate parts are labeled with system number sticker.

2. Install the wafer, weldolet(s) or spoolpiece in the system. Before installation measure internal diameter (ID) of existing pipe. See graphical guide on front page of this quick start guide, or use the installation manual.

3. Start up.

- If desired; connect 4-20mA signal out to the IO module in the analyser. Standard setting: A1out = SG+, A1out GND= SG GND, A2out = TEMP+, A2out GND= TEMP GND.
- Turn on the analyser (Only after approval of Arenal or Arenal appointed service provider)
- Press  -> system settings -> user settings. Set your personal settings and time. (In case of password prompt use ID: "service" with password: "26")

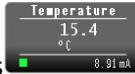
4. Water calibration

- In  (main screen) press  -> Water calibration. (In case of password prompt use ID: "service" with password: "26")
- Water calibration: Run clear process water until reference temperature is stable. Wait for at least 15 minutes after start-up if you wish to perform calibration.
- Press  (calibrate) . Press confirm. Check if SG moves to 1.000 in home screen.
- In case of a thermal massflow probe, the water calibration for flow can also be performed now. Continue to steps 8, 9 and 10 of this guide to do this. Then continue with step 5.

5. Field calibration

- Start pumping the process slurry until a stable measurement of SG is given.
- In  (main screen) press  -> slurry calibration (In case of password prompt use ID: "service" with password: "26")
- Calibrate by setting the high Online and high Lab value. Use the slurry measurement at time of sample for online and the Lab value for the lab result of the taken sample. 
- The last action to complete the calibration (Important) is to save  all new settings.
- In case of a thermal massflow probe, the slurry calibration for flow can also be performed now. Make sure step 8, 9 and 10 have already been performed and continue to step 11 to do this. Then continue with step 7.

6. Configure the digital and analog outputs

- Standard settings for 4-20mA SG output are 4mA = SG 1 and 20mA = SG 2. To set own values in  (main screen) press  -> slurry calibration -> click  (next page). Here settings may be changed.
- Standard settings for 4-20mA Temperature output are 4mA = 0°C and 20mA = 50°C. To set own values in main screen press  -> click  (next page). Here settings may be changed.
- The ultrasonic density analyser is now calibrated!

7. For full installation guide and manual please see <https://www.arenal-pcs.com/downloads>

In case of any questions please contact Arenal <https://www.arenal-pcs.com/support> Thank you for using Arenal PCS for your process control!

For more settings, information and FAQ please see User Manual

Quick start guide | Arenal | QA03-SDA

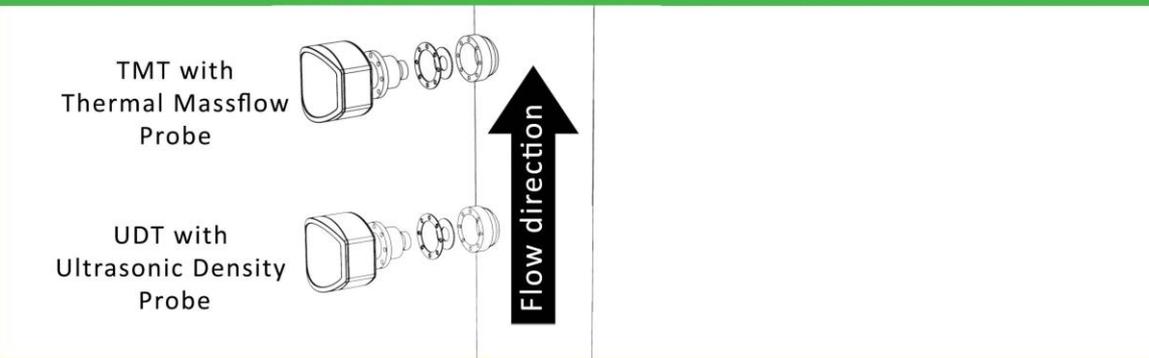
KWR-7QA03-931E

Additional steps in case of Thermal Massflow Probe:

8. Power off system and install Massflow probe:

Thermal Massflow Probe

1



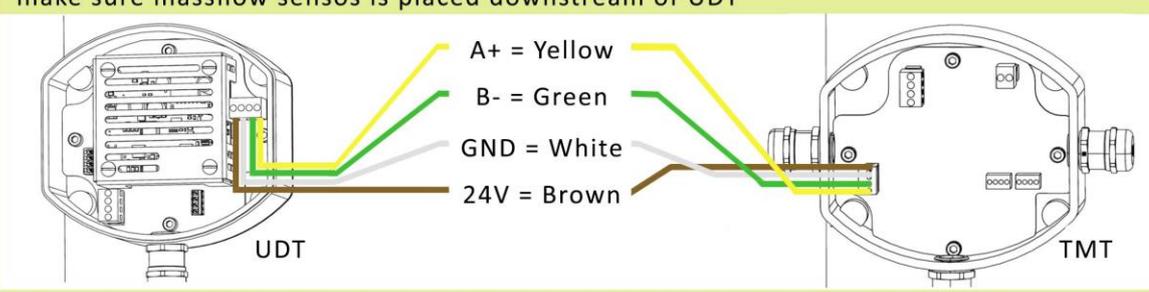
TMT with Thermal Massflow Probe

UDT with Ultrasonic Density Probe

Flow direction

make sure massflow sensos is placed downstream of UDT

2



A+ = Yellow

B- = Green

GND = White

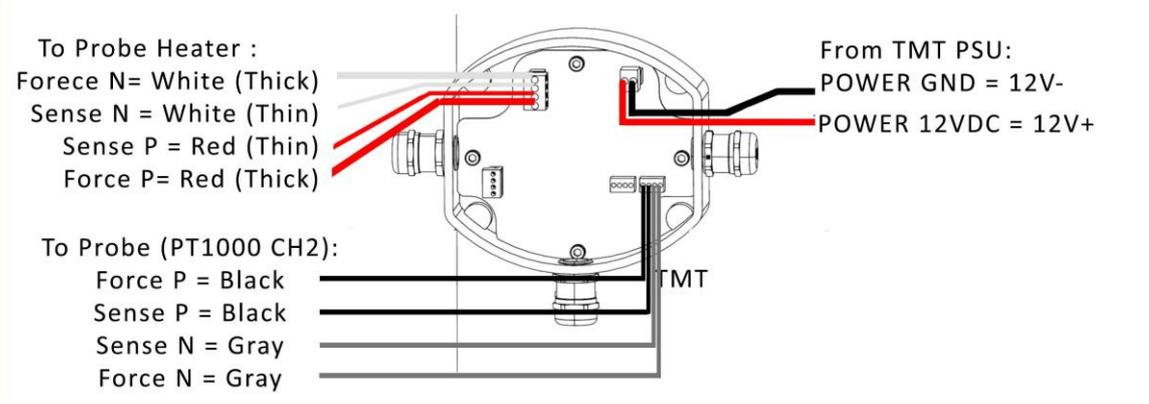
24V = Brown

UDT

TMT

remove covers of transmitters and connect 2nd Modbus cable according to above scheme

3



To Probe Heater :

Force N= White (Thick)

Sense N = White (Thin)

Sense P = Red (Thin)

Force P= Red (Thick)

To Probe (PT1000 CH2):

Force P = Black

Sense P = Black

Sense N = Gray

Force N = Gray

From TMT PSU:

POWER GND = 12V-

POWER 12VDC = 12V+

TMT

in case TMP probe is not connected: connect according to above scheme



IMPORTANT:
Before You Continue...

- Always unplug power when working on a system!
- In case of weldolet drill hole 36mm. See installation guide for info.
- Make sure probe is mounded flush with pipe ID.
- Thermal Massflow Probe requires its own additional 12VDC 60W PSU.
- Use 12VDC:DC converter when not using Arenal PSU.
- Thermal Massflow Transmitter PCB uses 24VDC from Modbus cable.
- Make sure all cable glands, lids and screws are tightened to prevent moisture damage.

For more settings, information and FAQ please see User Manual

Quick start guide | Arenal | QA03-SDA

KWR-7QA03-931E

9. Setup of the Thermal Massflow Analyser (Make sure that steps 3 to 8 are completed first) :

a. Turn on the analyser (Only after approval of Arenal or Arenal appointed service provider)

b. In  (main screen) press . From the pulldown menu select Flow source: TMT -> Close. Set ID of the pipe. Click  and set desired output unit and mA range. Standard settings for 4-20mA Flow output range are 4mA = 0 m/s and 20mA = 10m/s. (In case of password prompt use ID: "service" with password: "26")

c. Click the save  button.

d. Make sure TMT communication is set on (Green color). Press  -> Thermal Massflow Transmitter -> Modbus RTU communication. In case TMT is OFF -> click Switch ON. Green color will confirm on.

10. Temperature calibration with UDT

a. To temperature calibrate the sensors together: Press  -> Thermal Massflow Transmitter -> Temperature Calibration. PWM needs to be turned off for the calibration. Controller of the probe must be off to calibrate. If Regulator is ON press the button to turn it OFF. Red color will confirm off. (In case of password prompt use ID: "service" with password: "26")

b. Wait for at least 15 minutes to let temperature stabilize while pumping water.

c. Press Calibrate PT1000. ΔT should move to 0°C.

d. Turn regulator on by pressing the Regulator button. Green color will confirm on. Click the save  button.

11. Field calibration.

a. Note that water calibration of density (steps 5) must be correct before starting this procedure. Both water and field calibration must be performed before system works properly.

b. Start pumping clear process water until a stable measurement of SG/density is given .

c. Press  -> Thermal Massflow Transmitter -> Field Calibration, in this screen the field calibration can be set.

d. Manually copy the the SG model value shown at top left in the in 1st Water field (SG column). This value should be approximately 0,997 to 1.

e. Enter the result from model value in field Water - Online Value column. For Water - Lab Value column enter the value provided by reference meter.

f. Start pumping high density slurry until a stable measurement of SG/density is given.

g. Fill in the SG model value shown at top left under in 1st Slurry field (SG column).

h. Enter the result from model value in field Slurry - Online Value column. For Slurry - Lab Value column enter the value provided by reference meter.

i. The last action to complete the calibration procedure is to save  all the new settings.

12. Re-configure the digital and analog outputs.

a. Step 9b already set correct range for mA. To put a flow measurement to a mA output for IO module press  -> IO module -> mA out settings. Set parameter 2 to desired output.

b. Click the save  button.

c. The Thermal Massflow Analyser is now calibrated!

13. For full installation guide and manual please see <https://www.arenal-pcs.com/downloads>

In case of any questions please contact Arenal <https://www.arenal-pcs.com/support>

Thank you for using Arenal PCS for your process control!

For more settings, information and FAQ please see User Manual