GSM Modem pro*COM*©

Slide-board to extend the proControl© 2 control unit for the transmission of error messages via SMS.

Installation- and Operating Manual

CONTENT

Dear Customer,

At this point we would like to thank you for the trust, which you have shown in us, through the purchase of this product.

Please take a few minutes and read these operating instructions closely and carefully. Only in this way is a safe and fault-free operation guaranteed!

1. General and safety information

With the GSM Modem pro*COM*© error messages and events occured on the pro*Control*© 2 control can be transmitted via SMS and can be acknowledged by a return SMS to the modem. Furthermore, a call-up of data via SMS to the modem is possible. With this function error logbook entries, commissioning data and running times can be transmitted to the subscriber.

With employment in accordance with the intended use there are no hazards emanating from the equipment. National applicable regulations as well as technical data are to be observed.

Should the pro*COM*© be used for other purposes without the express agreement of the firm of ATB Umwelttechnologien GmbH and/or if the following safety information is disregarded, then this can lead to malfunctions of or defects in the plant. In this case any liability is excluded. Modifications to the equipment are not permitted and lead to the loss of warranty claims.

Do not operate any equipment which shows malfunctions, has been dropped or has been damaged in any way.

Explanation of the warning notices used:

⚠️ Attention!   ⚡ Danger due to electrical voltage!

Equipment characteristics

- Controlled by microprocessor.
- Protection marking for electrical enclosures IP54 (mounted in pro*Control*© 2)
- Ready-to-connect slot board
- Error signalling by power failure
- Error and event transmission via SMS to 3 subscriber
- Error acknowledgement by return SMS
- Re-call of run-time, error logbook entries and info data
- Configuration by 4 softkey operation via pro*Control*© 2
- Selection of 6 menu languages (German, English, French, Spanish, Rumanian and Polish).
- Can be used for all AQUA*max*® plants with pro*Control*© 2
- Power supply 24VDC via pro*Control*© 2
- Antenna FME socket
- Antenna with glued surface and 2,5m cable
- Connection +24V, Ground, FME socket and RS-232 plug

⚠️ The SIM-Card is not included and must be provided by the customer. Required type Mini-SIM card 25 x 15mm

Installation

All tasks, which nevertheless require the opening of the control unit as well as the electrical connection, are to be carried out by a qualified electrician!

⚠ **ATTENTION! Before opening the pro*Control*© 2 and/or the connection box these MUST be disconnected from the mains supply. Work on open equipment may be carried out exclusively by qualified electricians! Pay attention to appropriate-phase connection (even with ready-to-connect models!**

⚠ **ATTENTION! Screw covers and screws of the display cover can get lost easily!**

After opening the case of the pro*Control*© 2, the GSM modem board is inserted on the right in the housing as shown in fig. 1. For this purpose the cable with the antenna socket is to be pulled into the terminal box of the control housing. Other cables and connectors are to be connected according to the following pictures.

Fig. 1: pro*Control*© 2 housing with GSM modem board on the right

Fig. 2: +24VDC red cable and Ground black cable
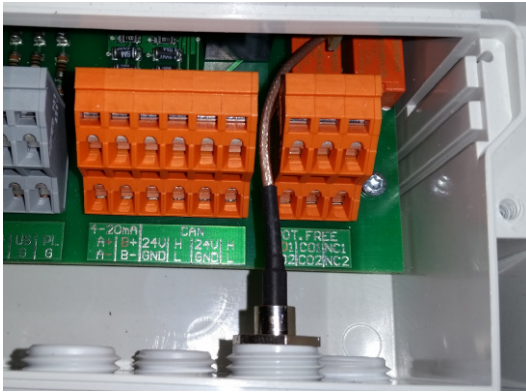
Fig. 3: Installation of the antenna cable
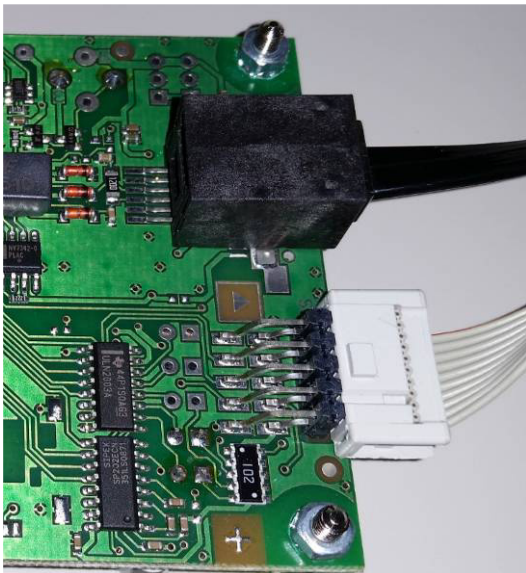

Fig. 4: FME-connector in cable gland

Fig. 5: RS-232 connector on control board

Fig. 6: pro*Control*© 2 fully assembled with GSM modem board

Make sure that the housing cover can be closed properly when the installation is completed.

2. Functional description

General Features
The configuration of the modem is carried out via the soft keys of the pro*Control*© 2 unit.
From software version V1.00.10 you will find a menu item „communication" in the service mode. The configuration of the modem is described in chapter 3, and may only be carried out by qualified persons.

After completion of configuration, the communication between the modem and the registered destination numbers works via SMS transmission. Error messages and events are transmitted immediately after the occurrence as a text message to all enabled destination numbers. Further explanations can be found in the chapters "transmission of error messages" and "transmission of events".
Retrieving data is available for all registered target numbers. The transmission of the retrieved data is only to the respective retrieving destination number. Further explanations can be found in the chapter "Retrieving Data".

Key functions
↑↓   Scroll upwards and downwards / to increase or decrease a value.
OK   Select a menu item / accept and save the input.
ESC   Jump one level back within the menu structure or jump one number back within the number input.

3. Configuration and commissioning

For the configuration and commissioning of the modem you need the service code of the control unit**.**

Basic information such as phone number and PIN number of the SIM card, the phone number of the SMS center of the provider and the telephone number of the recipient (target 1-3) is required.

ATTENTION! All telephone numbers must begin with + and the appropriate country code and are entered without space.

Here are examples of the SMS central numbers of some providers:
t-mobile   → +491710760000
Vodafone   → +491722270333
eplus   → +491770602300
O2   → +491760000443

The service code ensures that the commissioning is carried out by an expert.
Enter the 6-digit code number using ↑↓ and *OK*.

Pressing the ↑-button will bring you directly to the menu „Communication". Open it by pressing the OK button.
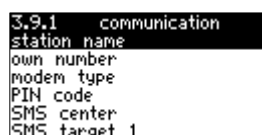
In the menu "communication" you enter into the following sub-items by using the ↓ button: station name, own number, modem type, PIN, SMS center, SMS target 1 …

3.9.10 communication SMS center SMS target 1 SMS target 2 SMS target 3 SMS status SMS enable ✓ON	… SMS-target 2, SMS-target 3, SMS status and SMS enable ON/OFF.

⚠️ The item SMS enable ON/OFF must changed as the last item to ON only after complete input of data. Thus the communication is not enabled with incorrect or incomplete data

3.9.2 station name ((·))PROCONTROL 16:09:07	The station name is prefixed to each SMS message and may consist of a maximum of 10 numbers or letters. The station name is intended to send with each SMS message, for example, the serial number of the system or the customer name.

3.9.3 own number +4915114533965	As own number you have to insert the telephone nummer of the modem SIM-card (starting with + and the country code).

3.9.4 modem type GSM modem Schar ((·)) 16:09:25	The menu „modem type" has no function because only one type of modem can be selected.

3.9.5 PIN code ((·)) 0000 16:09:33	Enter the 4 - digit PIN code for the SIM card in the modem. With OK start entering and press OK to confirm the PIN code. After confirmation with OK button, 4 zero numbers appear again, to prevent reading of the PIN code by unauthorized people.

3.9.6 SMS center +491710760000	Enter the SMS center number of the provider of your SIM card in the modem. Example left SMS center number of the provider t-mobile.

3.9.7 SMS target 1 ((·)) error ON events OFF +4915114533964	In SMS target 1 - 3 you can select whether errors and/or events are transmitted. (Events are all manual interventions in the control). Access to the other input fields by using the ↑↓-key. After entering the target number, the transmission for errors and/or events is enabled.

3.9.10 SMS status CT NT DEM DEL CS ERR 0E 19 014 000 00 0000 T-Mobile D 063% <11> …Idle ZNR ST STA DAY SMS MEM 000IDL 1 3 0 20	The menu item SMS status contains information may be of interest in the event of failure analysis. No input of data is possible. For further information please call service.

3.9.10 communication SMS center SMS target 1 SMS target 2 SMS target 3 SMS status SMS enable ✓ON	In the menu item SMS enable ON/OFF you can activate by changing from OFF to ON by pressing OK and the ↑↓-button. "communication" the SMS status can be changed from OFF to ON by pressing OK and the ↑↓-button.

4. Transmission of error messages

The error texts that are transmitted via SMS, had to be changed compared to the error texts on the display of the proControl© 2 because no special characters can be transmitted and on the other hand the maximum number of characters for the SMS transmission had to be limited to 11.

SMS error textmessage	Error description
high water	high water alarm, all 4 float switches UP
A1 Imax	overcurrent A1 (aerator 1)
A2 Imax	overcurrent A2 (aerator 2 or mixer)
C1 Imax	overcurrent C1 (clearwater pump 1)
C2 Imax	overcurrent C2 (clearwater pump 2)
F1 Imax	overcurrent F1 (feedpump 1)
F2 Imax	overcurrent F2 (feedpump 2)
P Imax	overcurrent P (dosing pump)
SL Imax	overcurrent SL (sludge pump)
UV Imax	overcurrent UV (UV-hygienisation)
A1 Imin	undercurrent A1 (aerator 1)
A2 Imin	undercurrent A2 (aerator 2 or mixer)
C1 Imin	undercurrent C1 (clearwater pump 1)
C2 Imin	undercurrent C2 (clearwater pump 2)
F1 Imin	undercurrent F1 (feedpump 1)
F2 Imin	undercurrent F2 (feedpump 2)
P Imin	undercurrent P (dosing pump)
SL Imin	undercurrent SL (sludge pump)
UV Imin	undercurrent UV (UV-hygienisation)
P fluid	refill P fluid
switch err.	float switch error
logic SW	logic error float switch (Classic or Basic)
SW buffer	error buffer float switch
SW SBR	error SBR float switch
UV low int.	UV low intensity
CW timeout	Clearwater pump timeout
SMS enable	activate SMS
CRC error	memory failure on motherboard
MEM CRC	MEM CRC Error, memory failure
FRAM commu.	FRAM comunication failed
CRC-FRAM	CRC error FRAM, data error in FRAM memory
GSM error	GSM transmission problems

Any error can be acknowledged via SMS reply (no text required) to the modem.

5. Transmission of events

Any manual changes and interventions in the control operation such as manual operation of units or changing of operating parameters and more we call events. The transmission of events can be activated or deactivated for each target 1 - 3. Enclosed you will find a list of text messages via SMS and the explanation of this messages.

SMS event textmessage	Changed paramteters/events
sedimenation	sedimenation
ac-alarm	acoustic alarm
ac-al. res.	reset acoustic alarm
ac-al. 72h	acoustic alarm after 72h error reset
plant type	plant type changed
Aer-cont-ON	aerator non-stop run
nitri aerOF	nitri aerator OFF
nitri aerON	nitri aerator ON
eco aer OFF	eco aerator OFF
eco aer. ON	eco aerator ON
feeding	feeding duration
feed bat.	feed batches
feed/cylce	feedings per cylce
code ent.	access code entered
supercode	supercode entered
no. of deni	number of deni phases
deni aerOFF	deni aerator OFF
deni aerON	deni aerator ON
deni mixOFF	deni mixer ON
deni mixON	deni mixer OFF
deni time	deni mixer continuos running
run in time	run in time
inhabitants	number of inhabitants
factory mod	factory mode entered
initialized	control initialized
man AL-OFF	manual Alarm OFF
man AL-ON	manual Alarm ON
man F1 OFF	manual Feed 1 OFF
man F1 ON	manual Feed 1 ON
man F2 OFF	manual Feed 2 OFF
man F2 ON	manual Feed 2 ON
man P OFF	manual Dosing OFF
man P ON	manual Dosing ON
man A1 OFF	manual Aerator 1 OFF
man A1 ON	manual Aerator 1 ON
man A2 OFF	manual Aerator 2 OFF
man A2 ON	manual Aerator 2 ON

man C1 OFF	manual CW-pu. 1 OFF
man C1 ON	manual CW-pu. 1 ON
man C2 OFF	manual CW-pu. 2 OFF
man C2 ON	manual CW-pu. 2 ON
man SL OFF	manual SL-pu. OFF
man SL ON	manual Sl-pu. ON
man SW1 OFF	manual SW1 OFF
man SW1 ON	manual SW1 ON
man SW2 OFF	manual SW2 OFF
man SW2 ON	manual SW2 ON
man SW3 OFF	manual SW3 OFF
man SW3 ON	manual SW3 ON
man SW4 OFF	manual SW4 OFF
man SW4 ON	manual SW4 ON
man UV OFF	manual UV OFF
man UV ON	manual UV ON
man mode	manual mode
man mode qu	quit manual mode
disinfection	disinfection
I max aer.	I max aerator
I max CWP	I max CW pump
I max SLP	I max SL pump
I min aer.	I min aerator
I min CWP	I min CW pump
I min SLP	I min SL pump
CW followup	CW-pump followup
CW evacuat.	Clearwater evacuation time
mix. cont.	mixer Non-stop running
nitri mixOF	nitri mixer OFF
nitri mixON	nitri mixer ON
eco mix OFF	eco mixer OFF
eco mix ON	eco mixer ON
power fail.	power failure
p-fail. qu.	power failure quit
power ret.	power returned
add. nitri	additional nitri
Buffer Over	Buffer Overflow
P-precip.	P-precipitation
P-phase	P-phase
error reset	error reset
SID	Serial number
service mod	Service Mode entered
SL back	Sludge return puls (Basic)
SL back	Sludge return duration

language	language changed
flush pulse	flush pulse duration
control typ	control type
SW-Update	Software-Update
synchr. XLt	Synchronization XLt
unkn. Event	unknown Event
UV warm-up	UV warm-up time
factory set	factory settings
cycles	number of cycles

6. Retrieving Data

By sending SMS texts to the modem some information can be retrieved from the controller. The retrieval is done with the following English words.

Info   Error   Time   Week

These words are always the same independent of the selected menu language. Data is retrieved, by sending a single word to the modem. The response with the corresponding data is retrieved from the modem in the menu language selected on the control unit.

By sending „*Info*" to the modem the following data will be recalled.

Info →   Station name
                Time Date
                Plant type
                PT number
                Serial number
                Operating software version (V)
                Motherboard software version (G)

By sending „*Error*" to the modem the following data will be recalled.

Error →   Station name
                Time Date
                Error number_1 Error text_1
                Error time_1 Error date_1
                Error number_2 Error text_2
                Error time_2 Error date_2
                Error number_3 Error text_3
                Error time_3 Error date_3

If the total number of the signs in one SMS message does not exceed 160 signs, a fourth error message can also be transmitted.

By sending „*Time*" to the modem the following data will be recalled. Power connected to the control (NT), run time in eco mode (EC) and run time of the aggregates.

Time →   Station name
   Time Date
               NT: power supply
               EC: eco mode
               A1: aerator 1
               A2: aerator 2 (mixer)
               F: feeding
               C: clearwater evacuation
               SL: sludge return
               UV: hygienisation
               P4: dosing pump for P-precipitation

By sending „*Week*" to the modem the following data will be recalled. Power connected to the control (NT), run time in eco mode (EC) and the running time week by week of the aggregates.

Week →   Station name
               Time Date
               NT: power supply
               EC: eco mode
               A1: aerator 1
               A2: aerator 2 (mixer)
               F: feeding
               C: clearwater evacuation
               SL: sludge return
               UV: hygienisation
               P4: dosing pump for P-precipitation

7. SIM-Card

Used is a mini - SIM card in format ID-000 (25mm x 15mm). By a changeable PIN number the card can be protected against unauthorized use. The slot for the card is located under the display cover of the proControl© 2 at the top of the modem board. The SIM card can be inserted and removed with mounted modem board.
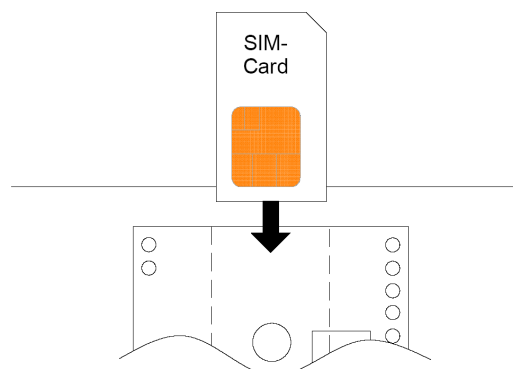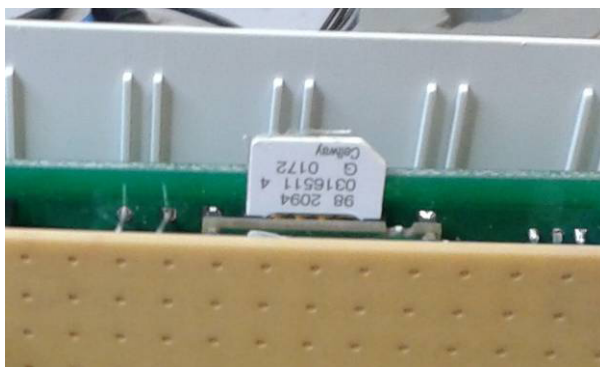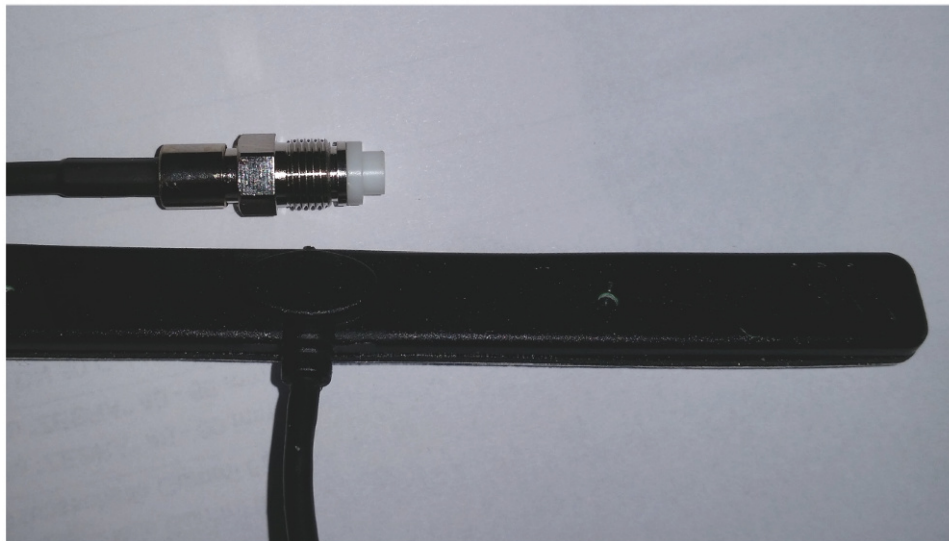
8. Accessorys

Multiband antenna for different mobile network communications i. a. GSM 900 and GSM1800.

The installation of the antenna is done for example by sticking on top of the control housing or on the mounting plate inside the control cabinet.

Very good transmission and reception with high-quality cable (2.5m length) with FME-connector.

Mount antenna with FME-connector and 2,5m cable length

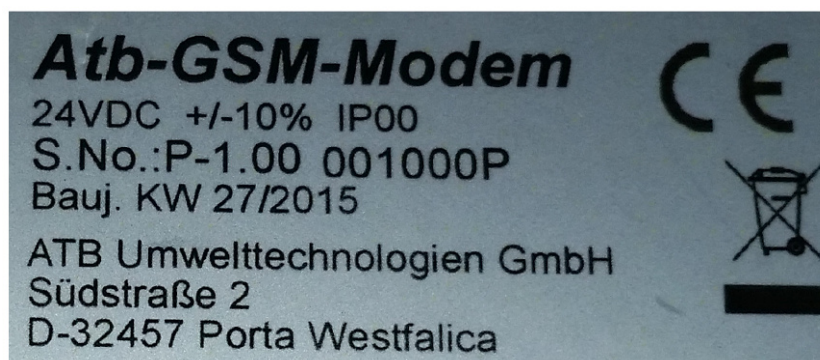## 9. Technical Data

Dimension: (L x W x TH) 90x150x25 mm
Temperature range: 0°C ... +70°C (excluding batteries)
Power supply: 24VDC
Connections: +24VDC, Ground, FME-Antenna socket, RS-232 connector
Batteries: 2 x AA Mignon NiMH, 1.2 V, 2100 mAh, charging time approx. 20h
Transmission range: Quad band 850/900/1800/1900Mhz

EC Declaration of Conformity

$C\epsilon$

The manufacturer:	**ATB Umwelttechnologien GmbH** **Südstr. 2** **D-32457 Porta Westfalica**
Hereby declares, that the product described below:	**GSM modem pro*COM*©**
Fulfils the requirements of the following EC Directives:	2004/108/EG Electromagnetic Compatibility 2006/95/EG Low Voltage Directive

Applied Harmonised Standards:

DIN EN 61000-6-1 and -6-3	Electromagnetic Compatibility - Generic Standards
DIN EN 61000-3-2	Electromagnetic Compatibility - Limits

Design changes, which have effects on the technical data given in the Operator´s Handbook and on the use in accordance with the regulations, make this Declaration of Conformity invalid!

Porta Westfalica, 20.04.2015

Markus Baumann (Managing Director)

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