

Communication Protocol of AT 3000 RS485 Bus

Parameters of Communication

Baud rate : 9600
No. of data bits : 8
Parity : none
No. of Stop bit : 2
Handshake : Xon / Xoff

Data Traffic

Pos.	Start	LE	DA	SA	Message	Chk	End
1	68	03	02	01	85	68	16
2	68	0D	01	02	02 00 00 00 4F 3E 00 00 00 00 00	92	16
3	68	07	03	02	00 03 F5 FF FF	FB	16
4	68	07	02	03	00 03 FF FF FF	05	16
5	68	03	02	01	38	3B	16
6	68	0D	04	02	00 00 00 00 00 00 00 00 00 00 00	06	16
7	68	03	03	01	38	3C	16
8	68	0D	04	03	00 00 00 00 00 00 00 00 00 00 00	07	16
9	68	03	02	01	39	3C	16
10	68	0D	05	02	0E D4 00 08 25 FD 46 04 00 00 00	5D	16
11	68	03	03	01	39	3D	16
12	68	0D	05	03	00 00 00 00 00 00 00 00 00 00 00	08	16

After Pos. 12 restart at Pos.1, Pos.2 etc., etc...

Description of the Protocol

Start : Start bit
LE : Length of Message including DA + SA (number of bytes)
DA : Destination Address
SA : Source Address
Message : Diverse
Chk : Checksum of Message + DA + SA
End : Stop bit

Listing of Source and Destination Address (DA, SA)

Keypad panel : 01
Cylinder left : 02
Cylinder right : 03 (only applicable for double units with two steam cylinders)
RTC-Option : 04
Monitor (PC) : 05

Description of Messages

Pos.1 :	Panel	to	Cylinder left	Request for Display-Info (7-segment-code)
Pos.2 :	Cylinder left	to	Panel	Display-Info (7-segment-code)
Pos.3 :	Cylinder left	to	Cylinder right	Adapter-Info
Pos.4 :	Cylinder right	to	Cylinder left	Adapter-Info
Pos.5 :	Panel	to	Cylinder left	Request to Cylinder left for Info to RTC
Pos.6 :	Cylinder left	to	RTC-Option	Info to RTC
Pos.7 :	Panel	to	Cylinder right	Request to Cylinder right for Info to RTC
Pos.8 :	Cylinder right	to	RTC-Option	Info to RTC
Pos.9 :	Panel	to	Cylinder left	Request to Cylinder left for Info to Monitor
Pos.10 :	Cylinder left	to	Monitor	Info to Monitor
Pos.11 :	Panel	to	Cylinder right	Request to Cylinder right for Info to Monitor
Pos.12 :	Cylinder right	to	Monitor	Info to Monitor

Description of Monitor Messages (Pos. 10 and Pos. 12)

1. Byte :	Program version	
2. Byte :	Status switch	SW8,SW7,SW6,SW5,SW4,SW3,SW2,SW1
3. Byte :	Status switch	0, 0, 0, hygostat,SW12,SW11,SW10,SW9
4. Byte :	Status	Sensor,SC,R3,R2,R1,Drainage,Intake,Contactor
5. Byte :	Current	for 2 or 3 electrodes : $I = \text{Byte} * 2 / 11$ for 6 electrodes : $I = \text{Byte} * 4 / 11$ } calculation
6. Byte :	Adapter	FF = 100 %
7. Byte :	Limitation	20 - 100 % (decimal)
8. Byte :	Error	0, 0, 0, U5, U4, U3, U2, U1
9. Byte :	Capacity	0-100 % actual capacity in % of nominal capacity
10. Byte :	Reserve	0
11. Byte :	Reserve	0

All values are hexadecimal if not otherwise specified.