

OUTPUT HOLDING

REGISTER:

40001	Register 0
40002	Register 1
a.s.o.	

INPUT

REGISTER:

30001	Register 0
30002	Register 1
a.s.o.	

1.4.2 Modbus cross-reference list:

Cross-reference list is valid for reading data with message function 3 (holding registers).

Function 4 (input registers) ignores the cross-reference list (data is always according to the register manual).

For data writes, the cross-reference list is valid for message function 6 and 16.

Function 70 ignores the cross-reference list.

1.4.3 Analogue logger read out

Compressed log data is read out with message function 3 or 4 from address 8000H.

Expanded log data is read out with message function 3 or 4, address 4000H-7FFFH.

1.4.4 Max no of data in one message.

Max no of data that can be transferred in one Modbus message differs between manufactures and types.

PCx have following limits.

Function:	Description:	Max no of data in one message:
01	Read coil status	2000 Coils
02	Read input status	2000 Inputs
03	Read holding register	125 Registers
04	Read input register	125 Registers
05	Force single coil	1 Coil
06	Preset single register	1 Registers
15	Force multiple coils	1024 Coils
16	Preset multiple registers	100 Registers
70	Preset multiple registers	100 Registers

If address range exceeds limits, PCx will return Error Response "illegal data address", code 2.

For not supported message functions, PCx will return Error Response "illegal function", code 1.

1.4.5 User message functions

In Modbus, message type 65 – 72 is reserved for user functions.

For AquaProg support, the following message functions are added.

65 'A' = Request of text

66 'B' = Transfer of text

67 'C' = Request of date and time

68 'D' = Transfer of date and time

69 'E' = Request of time stamped events

70 'F' = Preset multiple registers ignoring cross reference list (otherwise same as message function 16)

1.4.6 Function 65

Request of text. Max string length = 64 characters

Slav		Adr.	Adr.	Qty.	Qty.	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Hi	Lo
1	65	0	0	0	0	x	x

Response from slave

Slav		Byte	Text	Text	Text	CRC	CRC
adr.	Func	Cnt	Data	Data	Data	Hi	Lo
1	65	3	'A'	'B'	'C'	x	x

If requested Qty = 0, the full string will be returned with Byte Cnt set to actual no of characters.

If Qty = 1-64, requested no of bytes will be returned.

Longer strings will be truncated to requested no of bytes.

Short strings will be padded with trailing spaces up to requested no of bytes.

If requested no of bytes > 64, error code 2 (Illegal data address) will be returned.

1.4.7 Function 66

Transfer of text. Max string length = 64 characters

Slav		Adr.	Adr.	Qty.	Qty.	Byte	Text	Text	Text	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Cnt	Data	Data	Data	Hi	Lo
1	66	0	0	0	3	3	'A'	'B'	'C'	x	x

Response from slave

Slav		Adr.	Adr.	Qty.	Qty.	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Hi	Lo
1	66	0	0	0	3	x	x

If requested no of bytes > 64, error code 2 (Illegal data address) will be returned.

1.4.8 Function 67

Request of date and time. Fix string length = 12 characters

Slav		Adr.	Adr.	Qty.	Qty.	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Hi	Lo
1	67	0	0	0	0	x	x

Address is always 0

Qty. is normally 0 or 12

Response from slave

Slav		Byte	Text	Text	Text	Text	Text	Text	Text	Text	Text	Text	Text	CRC	CRC
adr.	Func	Cnt	Data	Data	Data	Data	Data	Data	Data	Data	Data	Data	Data	Hi	Lo
1	65	12	'0'	'0'	'0'	'6'	'3'	'0'	'2'	'3'	'5'	'8'	'5'	'9'	x

| | | | | | | | | | | | | | | |

Time is returned as a text string "YYMMDDHHMMSS"

If requested Qty = 0, Byte Cnt is set to 12 characters.

If Qty = 1-64, requested no of bytes will be returned.

Longer strings will be truncated to requested no of bytes.

Short strings will be padded with trailing spaces up to requested no of bytes.

If requested no of bytes > 64, error code 2 (Illegal data address) will be returned.

1.4.9 Function 68

Transfer of date and time. Fix string length = 12 characters

Slav		Adr.	Adr.	Qty.	Qty.	Byte	Text	Text	Text	Text	Text	Text	Text	Text	Text	Text	Text	CRC	CRC	
adr.	Func	Hi	Lo	Hi	Lo	Cnt	Data	Data	Data	Data	Data	Data	Data	Data	Data	Data	Data	Hi	Lo	
1	68	0	0	0	12	12	'0'	'0'	'0'	'6'	'3'	'0'	'2'	'3'	'5'	'8'	'5'	'9'	x	x

Address is always 0

Qty. and Byte Cnt is always 12

Response from slave

Slav		Adr.	Adr.	Qty.	Qty.	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Hi	Lo
1	68	0	0	0	12	x	x

Qty. or Byte Cnt differs from 12, error code 2 (Illegal data address) will be returned.

1.4.10 Function 69

Request of time stamped events. Fix string length = 60 characters (6 events)

Slav		Adr.	Adr.	Qty.	Qty.	CRC	CRC
adr.	Func	Hi	Lo	Hi	Lo	Hi	Lo
1	69	0	0	0	6	x	x

Address is always 0 for a new request.

In case of com. error, retransmit of previous data is done if address = 1.

Qty is always 6 events (* 10 bytes/event = 60 bytes)

Response from slave

Slav		Byte	Ev.1	Ev.6	CRC	CRC
adr.	Func	Cnt	Data	Data	Hi	Lo
1	69	60	0	9	x	x

60 bytes
event data

If Qty. Differs from 6, error code 2 (Illegal data address) will be returned.

Byte Cnt is always 60 bytes.

Event data have the same layout as in Comli message Å-Ä.