


Name: TR 800 Web	Type: Universal Relais	
Edited: (date / name) 29.04.2009 Fu	UDP protocol description	Drawing no.: 12280-1603-00
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UDP protocol TR 800 - master requests data

Mode *)	0 .. 9	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Reference of request	Any data of the master. Those are sent back in the answer (e.g. number of sequence, time-stamp).	16 Byte	

Data: 18 Byte


*)

0 = protocol compatible with TR 600 WebControl	-> ASCII-data
1 = TR 800 (data and alarm)	-> ASCII-data
2 = TR 800 (data and alarm)	-> binary data
3 = TR 800 (configuration)	-> binary data

UDP protocol TR 800 – answer mode 0 (compatible with TR 600 WebControl)

Name of unit	TR600	5 Byte	ASCII (+ 1 Byte Delimiter ";")
Mode	0	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Reference of request	A copy from the received telegram	16 Byte	ASCII
Device-ID	ASCII-string for definite marking of the device. 3 leading „0“ + MAC-address e.g. „0000012E4000014“. MAC 00-12-E4-00-00-14	15 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 1	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 2	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 3	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 4	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 5	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Current value sensor 6	*)	4 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 1	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 2	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 3	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 4	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 5 no function	0	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 6 no function	0	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 7 = Alarm 4	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Error code	00 .. 99	2 Byte	ASCII


= 86 Byte

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*)	
Sensor nc:	+980
Sensor short-circuit:	-999
Sensor break:	+999
<u>temperature sensor*2)</u>	
range (thermocouple):	-199 .. +950
<u>Current input *3)</u>	
range:	+000 .. +240
<u>Voltage input *3)</u>	
range:	+000 .. +120
<u>Resistor input *3)</u>	
range:	+000 .. +500 +000 .. +300
<u>Sensor scaling *3)</u>	
range:	-998 .. +950
<u>difference sensor *3)</u>	
range:	-998 .. +950
*2) depending on sensor type	
*3) output without decimal point	

UDP protocol TR 800 – answer mode 1


Type of device	TR800	5 Byte ASCII (+ 1 Byte Delimiter ";")
Mode	1	1 Byte ASCII (+ 1 Byte Delimiter ";")
Reference of request	A copy from the received telegram	16 Byte ASCII
Device-ID	ASCII-string for definite marking of the device. 3 leading „0“ + MAC-address e.g. „0000012E4000014“. MAC 00-12-E4-00-00-14	15 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 1	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 2	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 3	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 4	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 5	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 6	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 7	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Current value sensor 8	*)	7 Byte ASCII (+ 1 Byte Delimiter ";")
Alarm 1	0 .. 1	1 Byte ASCII (+ 1 Byte Delimiter ";")
Alarm 2	0 .. 1	1 Byte ASCII (+ 1 Byte Delimiter ";")

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Alarm 3	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Alarm 4	0 .. 1	1 Byte	ASCII (+ 1 Byte Delimiter ";")
Error code	00 .. 99	2 Byte	ASCII

= 114 Byte

<u>Current value sensor *)</u>	
Sensor short-circuit:	+32767
Sensor break:	+32766
Thermocouple poled wrong:	+32765
Overflow:	+32750
Underflow:	+32749
Sensor nc:	+32748
<u>temperature sensor</u>	
range (°C):	-0270.0 .. +1800.0
range (°F):	-000454 .. +003272
<u>Current input</u>	
range:	+000.00 .. +024.00
<u>Voltage input</u>	
range:	+000.00 .. +012.00
<u>Resistor input</u>	
range:	+0000.0 .. +0500.0
	+00.000 .. +30.000
<u>Sensor scaling</u>	
range:	-01.999 .. +09.999
	-019.99 .. +099.99
	-0199.9 .. +0999.9
	-001999 .. +009999

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UDP protocol TR 800 – answer mode 2

Type of device	TR800	5 Byte	ASCII (+ 1 Byte Delimiter ";")	
Mode	2	1 Byte	ASCII (+ 1 Byte Delimiter ";")	
Reference of request	A copy from the received telegram	16 Byte		
Device-ID	ASCII-string for definite marking of the device. 3 leading „0“ + MAC-address e.g. „0000012E4000014“. MAC 00-12-E4-00-00-14	15 Byte	ASCII (+ 1 Byte Delimiter ";")	
Current value sensor 1		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 1		1 Byte	Unsigned Char	
Current value sensor 2		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 2		1 Byte	Unsigned Char	
Current value sensor 3		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 3		1 Byte	Unsigned Char	
Current value sensor 4		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 4		1 Byte	Unsigned Char	
Current value sensor 5		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 5		1 Byte	Unsigned Char	
Current value sensor 6		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 6		1 Byte	Unsigned Char	
Current value sensor 7		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 7		1 Byte	Unsigned Char	
Current value sensor 8		2 Byte	Signed Int16	low / high Byte
Decimal point Sensor 8		1 Byte	Unsigned Char	
Alarm status		1 Byte	Unsigned Char	
Alarm from sensor		2 Byte	Unsigned Char	low / high Byte
Error code		1 Byte	Unsigned Char	

= 68 Byte

Current value sensor:

Sensor short-circuit:	32767 (0x7FFF Hex)
Sensor break:	32766 (0x7FFE Hex)
Thermocouple poled wrong:	32765 (0x7FFD Hex)
Overflow:	32750 (0x7FEE Hex)
Underflow:	32749 (0x7FED Hex)
Sensor nc:	32748 (0x7FEC Hex)

temperature sensor


range (°C):	-2700 .. 18000	0xF574 .. 0x4560
range (°F):	-454 .. 3272	0xFE3A .. 0x0CC8

Current input

range:	0 .. 2400	0x000 .. 0x0960
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Voltage input

range:	0 .. 1200	0x000 .. 0x04B0
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Resistor input

range:	0 .. 5000	0x000 .. 0x1388
	0 .. 30000	0x000 .. 0x7530

Sensor scaling

range:	-1999 .. 9999	0xF831 .. 0x270F
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Decimal point:


xxxx	0
xxx.x	1
xx.xx	2
x.xxx	3

Alarm status:

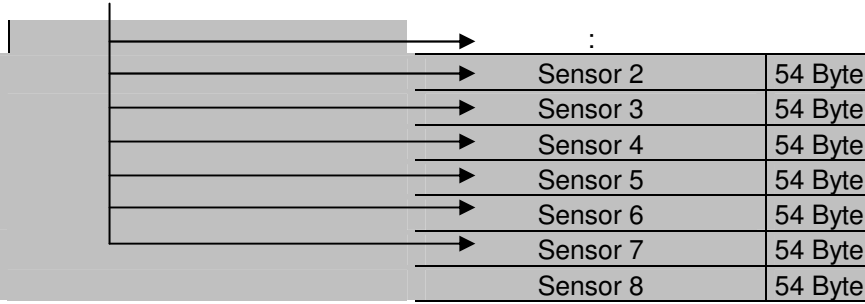
Alarm 1	bit 0	= 1 if Alarm
Alarm 2	bit 1	= 1 if Alarm
Alarm 3	bit 2	= 1 if Alarm
Alarm 4	bit 3	= 1 if Alarm


Alarm from sensor:

Sensor 1	bit 0	= 1 if the sensor triggers an alarm
Sensor 2	bit 1	
Sensor 3	bit 2	
Sensor 4	bit 3	
Sensor 5	bit 4	
Sensor 6	bit 5	
Sensor 7	bit 6	
Sensor 8	bit 7	

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UDP Protocol TR 800 - Answer Mode 3


Type of device	TR800	5 Byte	ASCII (+ 1 Byte Delimiter ";")	
Mode	3	1 Byte	ASCII (+ 1 Byte Delimiter ";")	
Reference of request	A copy from the received telegram	16 Byte		
Device-ID	ASCII-string for definite marking of the device. 3 leading „0“ + MAC-address e.g. „0000012E4000014“. MAC 00-12-E4-00-00-14	15 Byte	ASCII (+ 1 Byte Delimiter ";")	
Sensor Type	Sensor 1	2 Byte	Unsigned Int16	low / high Byte
Wire compensation	Sensor 1	2 Byte	Signed Int16	low / high Byte
Unit	Sensor 1	2 Byte	Signed Int16	low / high Byte
Scaling active	Sensor 1	2 Byte	Unsigned Int16	low / high Byte
Scaling zero point	Sensor 1	2 Byte	Signed Int16	low / high Byte
Scaling full-scale	Sensor 1	2 Byte	Signed Int16	low / high Byte
Scaling decimal point	Sensor 1	2 Byte	Unsigned Int16	low / high Byte
Alarm 1 active	Sensor 1 - Alarm1	2 Byte	Unsigned Int16	low / high Byte
Value - Alarm 1 ON	Sensor 1 - Alarm1	2 Byte	Signed Int16	low / high Byte
Value - Alarm 1 OFF	Sensor 1 - Alarm1	2 Byte	Signed Int16	low / high Byte
Value - Alarm 1 ON (Night)	Sensor 1 - Alarm1	2 Byte	Signed Int16	low / high Byte
Value - Alarm 1 OFF (Night)	Sensor 1 - Alarm1	2 Byte	Signed Int16	low / high Byte
Alarm 2 active	Sensor 1 - Alarm2	2 Byte	Unsigned Int16	low / high Byte
Value - Alarm 2 ON	Sensor 1 - Alarm2	2 Byte	Signed Int16	low / high Byte
Value - Alarm 2 OFF	Sensor 1 - Alarm2	2 Byte	Signed Int16	low / high Byte
Value - Alarm 2 ON (Night)	Sensor 1 - Alarm2	2 Byte	Signed Int16	low / high Byte
Value - Alarm 2 OFF (Night)	Sensor 1 - Alarm2	2 Byte	Signed Int16	low / high Byte
Alarm 3 active	Sensor 1 - Alarm3	2 Byte	Unsigned Int16	low / high Byte
Value - Alarm 3 ON	Sensor 1 - Alarm3	2 Byte	Signed Int16	low / high Byte
Value - Alarm 3 OFF	Sensor 1 - Alarm3	2 Byte	Signed Int16	low / high Byte
Value - Alarm 3 ON (Night)	Sensor 1 - Alarm3	2 Byte	Signed Int16	low / high Byte
Value - Alarm 3 OFF (Night)	Sensor 1 - Alarm3	2 Byte	Signed Int16	low / high Byte
Alarm 4 active	Sensor 1 - Alarm4	2 Byte	Unsigned Int16	low / high Byte
Value - Alarm 4 ON	Sensor 1 - Alarm4	2 Byte	Signed Int16	low / high Byte
Value - Alarm 4 OFF	Sensor 1 - Alarm4	2 Byte	Signed Int16	low / high Byte
Value - Alarm 4 ON (Night)	Sensor 1 - Alarm4	2 Byte	Signed Int16	low / high Byte
Value - Alarm 4 OFF (Night)	Sensor 1 - Alarm4	2 Byte	Signed Int16	low / high Byte
				
delay Alarm on	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
delay Alarm off	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
alarm on error	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
alarm locked	Alarm 1	2 Byte	Unsigned Int16	low / high Byte

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relay on alarm	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
	:			
	Alarm 2	10 Byte		
	Alarm 3	10 Byte		
	Alarm 4	10 Byte		
Data (scaled value)	Sensor 1	2 Byte	Signed Int16	low / high Byte
Data (not scaled value)	Sensor 1	2 Byte	Signed Int16	low / high Byte
Sensor error	Sensor 1	2 Byte	Unsigned Int16	low / high Byte
	:			
	Sensor 2	6 Byte		
	Sensor 3	6 Byte		
	Sensor 4	6 Byte		
	Sensor 5	6 Byte		
	Sensor 6	6 Byte		
	Sensor 7	6 Byte		
	Sensor 8	6 Byte		
simulated sensor		2 Byte	Unsigned Int16	low / high Byte
Status alarm	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
Status delay alarm on	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
Status delay alarm off	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
Status locked alarm	Alarm 1	2 Byte	Unsigned Int16	low / high Byte
	:			
	Alarm 2	8 Byte		
	Alarm 3	8 Byte		
	Alarm 4	8 Byte		
Status relays		2 Byte	Unsigned Int16	low / high Byte
Error code		2 Byte	Unsigned Int16	low / high Byte
Data- counter		2 Byte	Unsigned Int16	low / high Byte

597 Byte
+ 3 Byte (Delimiter)

600 Byte

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Values of the register

Sensor Type	
Value	meaning
0	nc
1	Pt 100
2	Pt 1000
3	KTY 83
4	KTY 84
5	Thermocouple B
6	Thermocouple E
7	Thermocouple J
8	Thermocouple K
9	Thermocouple L
10	Thermocouple N
11	Thermocouple R
12	Thermocouple S
13	Thermocouple T
14	Voltage 0 .. 10V
15	Current 0 .. 20mA
16	Current 4 .. 20mA
17	Resistor 500 Ohm
18	Resistor 30 kOhm
19	Difference of two inputs

Wire compensation	
Value	meaning
-1	3-wire
0	0 Ohm
1	0,1 Ohm
:	:
1000	100,0 Ohm

Unit	
Value	meaning
0	°C
1	°F
2	V
3	mA
4	Ohm
5	kOhm
6	%
7	User

Scaling on	
Value	meaning
0	inactive
1	active

Scaling zero point	
Scaling full-scale	
Value	meaning
-1999	
:	
9999	

Scaling Decimal point	
Value	meaning
0	xxxx
1	xxx.x
2	xx.xx
3	x.xxx

Alarm active	
Value	meaning
0	off
1	on


Alarm value -	
Value	meaning
-9999	Alarm x on
:	Alarm x off
:	Alarm x on (night)
30000	Alarm x off (night)

delay alarm on	
delay alarm off	
Value	meaning
0	[s]
:	:
9999	[s]

Alarm on error	
Value	meaning
0	off
1	on

Alarm locked	
Value	meaning
0	off
1	on

Relay on alarm	
Value	meaning
0	de-energized
1	energized

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Data- Sensor 1 .. 8

Data (scaled value)	
Data (not scaled value)	
Value	meaning
-9999	
:	
30000	
32767	Sensor short-circuit:
32766	Sensor break:
32765	Thermocouple poled wrong:
32750	Overflow:
32749	Underflow:
32748	Sensor nc:


Sensor error	
Value	meaning
0	OK
1	Sensor short-circuit
2	Sensor break:
3	
4	Thermocouple connected wrong:

Sensor Simulation

Simulated sensor	
Value	meaning
bit 0	Sensor 1
:	:
bit 7	Sensor 8

Status

Status alarm on	
Status delay alarm on	
Status delay alarm off	
Status locked alarm	
Value	meaning
0	off
bit0	Alarm Sensor 1
bit1	Alarm Sensor 2
bit2	Alarm Sensor 3
bit3	Alarm Sensor 4
bit4	Alarm Sensor 5
bit5	Alarm Sensor 6
bit6	Alarm Sensor 7
bit7	Alarm Sensor 8
bit8	Device error

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Other

Status relays	
Value	meaning
bit 0	Relays K1
:	
bit 3	Relays K4

Data- counter	
Value	meaning
0	is incremented at each measurement
:	
65535	

Error code	
Value	meaning
0	No error
bit 0	AD-error (Er 8)
	Internal communication error
bit 1	(Er 5)
	Internal communication error
bit 2	(Er 6)
bit 3	EEPROM error (Er 9)