Raytech GmbH

MC2 Communication Port

1 Hardware Protocol

9 pole D-Sub
Pin 2 TXD Data µΩJunior Computer
Pin 3 RXD Data Computer to µΩJunior
Pin 7 GND
+/- 12 V Signals
Protocol: 19200 Baud, 8 Bit, 1 Stopbit, no parity

2 Software- Protocol

Required firmware version u200 1.00 and later.

2.1 Printer Output Port

2.2 Syntax of Commands

„cc [Data1[;Data]..]Term"
cc = 2 ASCII Character for the Command
‘**,**’ (semicolon or white space) Separator for multiple Data fields
Numeric Format of Numbers: float (C - Language), "." as decimal point
Format of Strings: all ASCII Characters from 0x20 to 0x7f]
Terminator: „CR" (= 0x0D) or "LF" (=0x0A)

Answers without data

"*0 ok";	Commando ok
"*1 unkn";	unknown Command
"*3 Emerg"	Emergency Button pressed
"*4 Range"	Parameter out of Range
"*7 Protocol"	Protocol violation (Framing Error, Overrun, Parity, Input Buffer Full)
"*8 Stop"	Stop Button pressed
"*9 Ovld"	Rx too high, Measuring Cable not connected

General Format of Answer Message
xx,Message1[,Message2;[Message3]..]",CR
xx Type of answer (the command itself)

2.3 MC2 Commands

gv	Get Version	Get Version of uOhmJunior, Release of the Firmware, Date of Firmware e.g. gv "uOhm-200 by Raytech u200 1.04 22.10.03"
gv 1	Get Firmware Relase	Release of the Firmware e.g. gv 1 „u200 1.04“
gv f	Get FBL Version	Release of the Firmware of the FBL e.g. gv f „FBL 2.03 30.1.03“
gs	Get Serial Number	Asks the internal serial number The Serialnumber is unique for each MC2 e.g. gs „GS 203-401“
mr	Measure Resistor	Measure Resistor Result at the end
mr,1	- with Results / single Measurement	with intermediate results
mr,2	- with Results / continuous Measurement	Format of Answer MR,rrrr.rrr,iii.iii,tt.t,x.xx rrr.rrr Resistance of Test object iii.iii Value of actual Current tt.t Temperature of Probe x.xx Value of Quality
si,n	Set I Range	Set the Measuring Mode 1 = 200A, 2 = 100A, 3 = 50A, 4 = 20A, 5 = 10A Result: "*0 ok", "*4 Range"
gi	Get Range	Ask the actual Measuring Mode Result: „GI n“ n = 1..7 see above (si,n)
gm,n	Get Memory location n	Reads the stored Values from Archive 0 -> last measured value (t = 0) 1 -> previous Value (t= -1) Answer: GM n, ddmmyy,hhmm,range n: Number of measurement ddmmyy: date of start of measurement hhmm: time of start of measurement range: Current Range e.g "100A" GM –n,time,r,temp -n: Number of Sample time: time in s since start of measurement

r:	Resistance of testobject
temp:	Temp of testobject (valid only with ext tempprobe)

gma Get Memory All

```
GM 3, 311203,2359,100A          // Start of Measurement
GM -1, +23, 21.46e-3,23.4       //  1 Sample
GM 4, 010104,0000,100A          // Start of next Measurement
GM -1, 10,0.123,25.1            // 1. Sample after 10'
GM -2, 20,0.124,26.1            // 2. Sample after 20'
*0 ok                           // End of list
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cm Clear Memory

?1 Get Size of Archive

Answer is as follows: „?1,a,b,c,d“
a = size of Chip A (IC8) in kBytes
b = size of Chip B (IC7) in kBytes
c = Number of Entries in the Archive
d = Total Number of Entries used in the Archive
Example
„?1,4,32,2296,8“
Chip A 4kB (M24C32)
Chip B 32kByte (M24C256)
2296 Entries in the Archive
8 Entries are used

XD Stores a String in the Archive

SO xyz Set Options

SO F..	Full ArchiveSize (max entries)
SO 0..	Standard ArchiveSize (100 entries)
SO .0.	Display with Rangewarning
SO .1.	Display without Rangewarning (powerup default)
SO ..C	Display Temp in degree Celsius
SO ..F	Display Temp in degree Fahrenheit