






Meter counter
Model 30.351 – 30.353

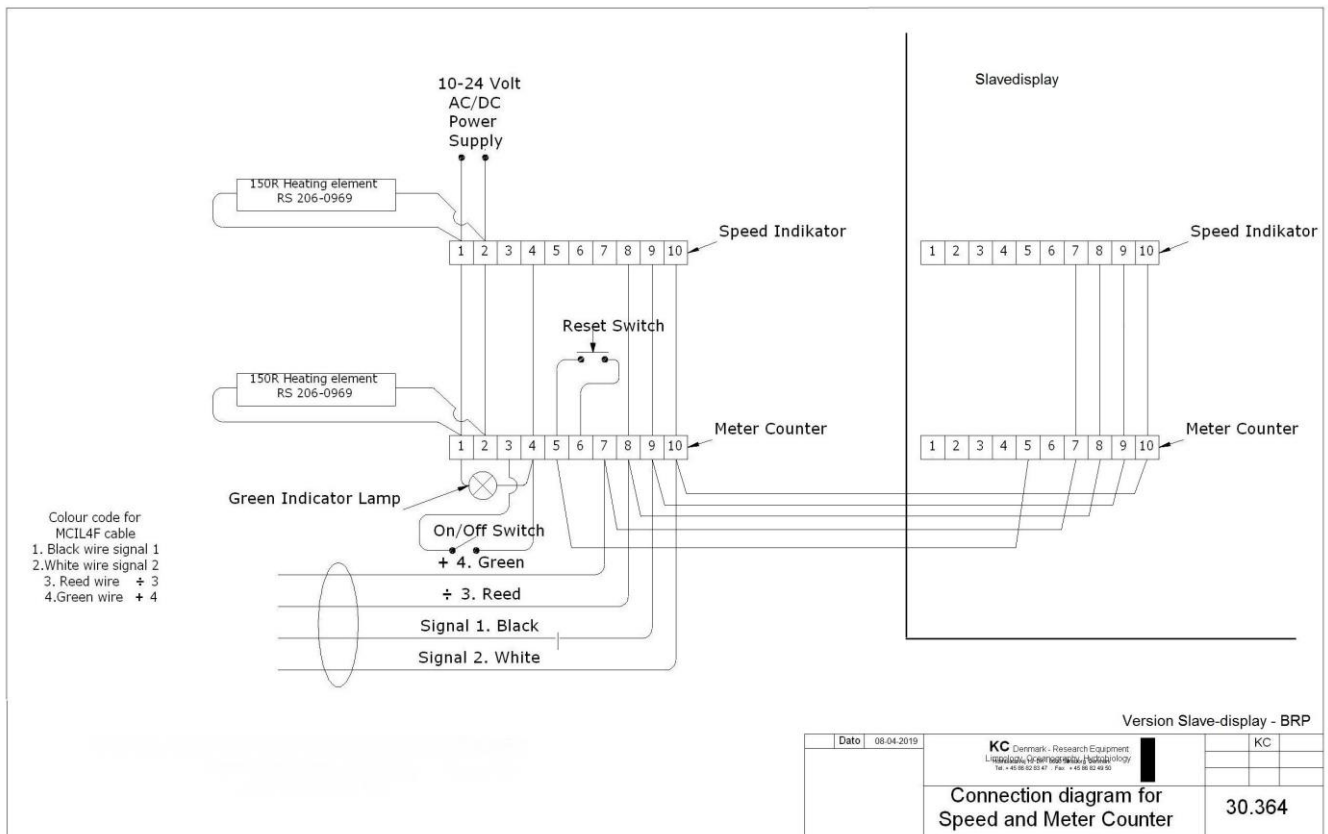
Manual

KC Denmark A/S

Research Equipment
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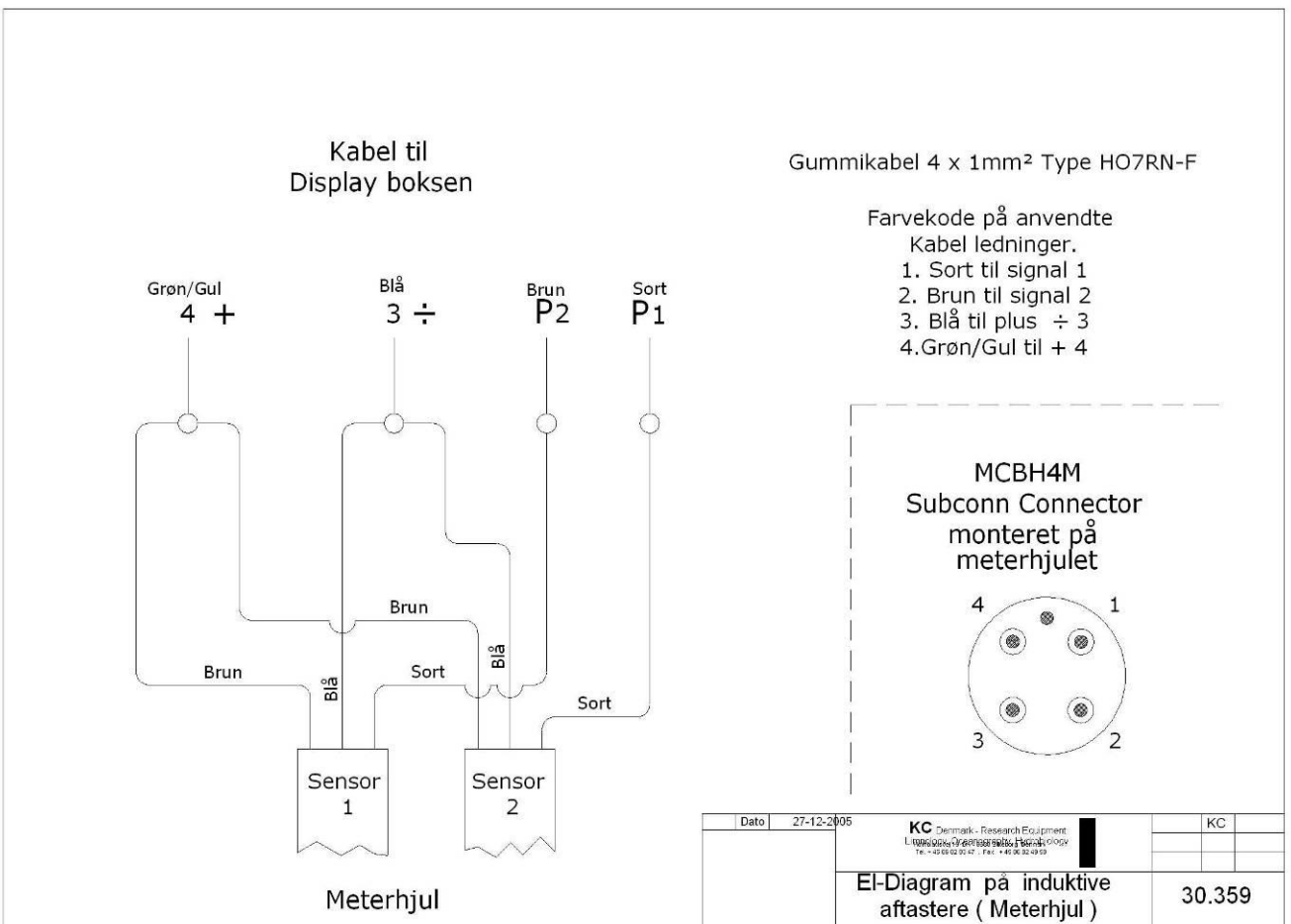
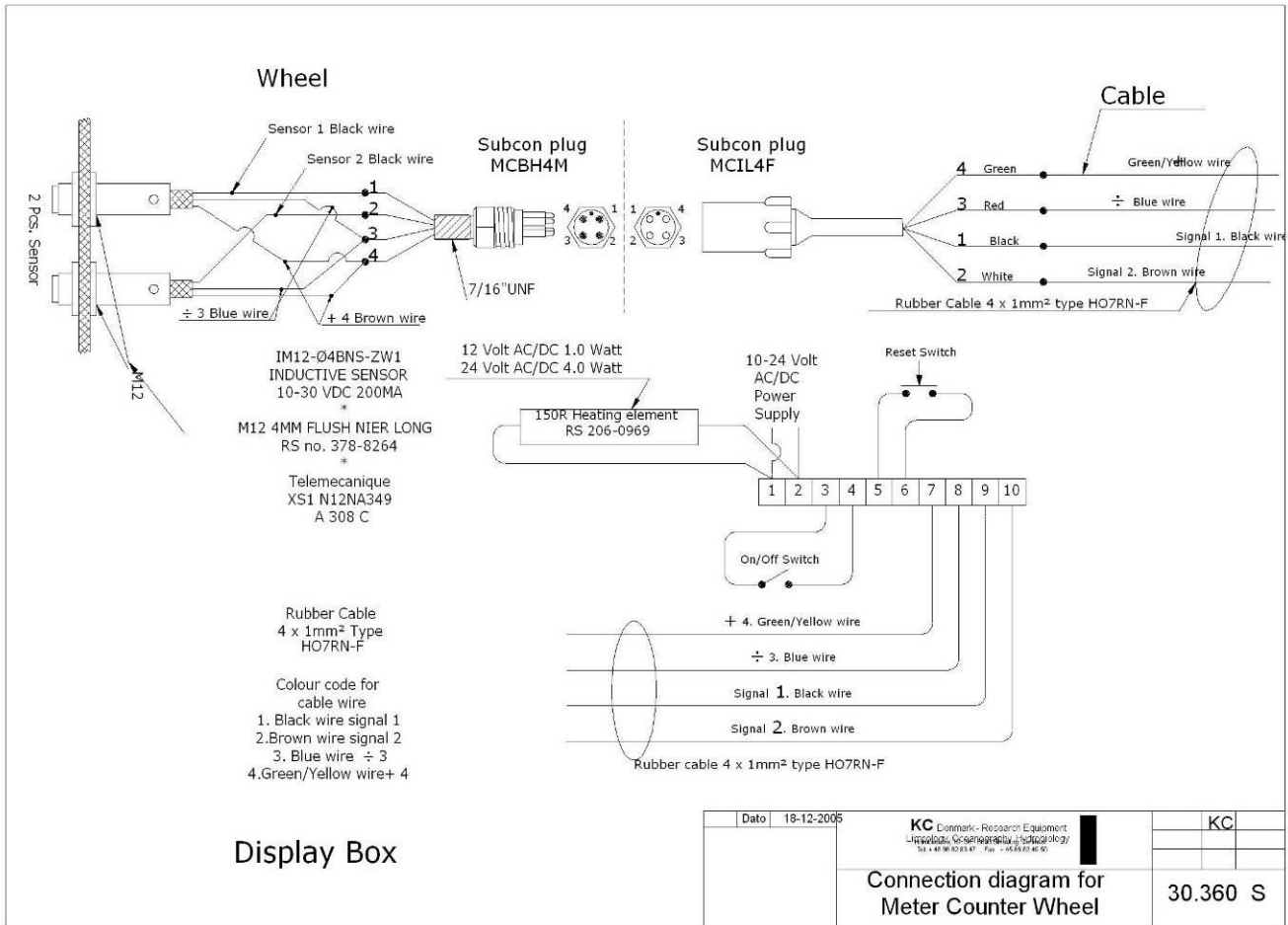
	<p align="center">Manual for meter and speed counter</p>	<p align="center">Model no. 30.351 – 30.353</p>
<p align="center">1</p>	<ul style="list-style-type: none"> • Capacity: Max. 99.999,9 m • Resolution: 10 cm • Power supply: 10 – 24 V AC or DC (230 V AC on request) • Power consumption: Max. 8 W for a counter with 2 displays • Night visibility • An internal heating element prevents condensate water • Two or more displays can be linked together for a simultaneously read-out 	
<p align="center">2</p>	<p>Power supply:</p>	
	<p>The counter requires an external power supply of 10 – 24 V AC or DC. Power consumption: Max. 200 mA. Model 30.353 (2 displays) requires 400 mA.</p> <p>Standard delivery comes with a 3-conductor cable, length 5 m, for the power supply.</p> <p>Connection: Brown and blue wire: 10 – 24 V AC or DC. No need for polarity (built-in rectifier). Yellow/green wire: Earth. No needs for connecting to ground.</p> <div style="text-align: center;">  <p>Caution Voltages exceeding 30 V AC/V DC will cause immediate damages to the counter.</p> <p>On request, the counter can be provided with an internal power supply for 230 V AC or built-in rechargeable batteries.</p> </div>	
<p align="center">3</p>	<p>Preparation:</p>	
	<p>Before inserting the cable on the meter wheel check out the counting direction of the wheel by manually turning of wheel.</p>	

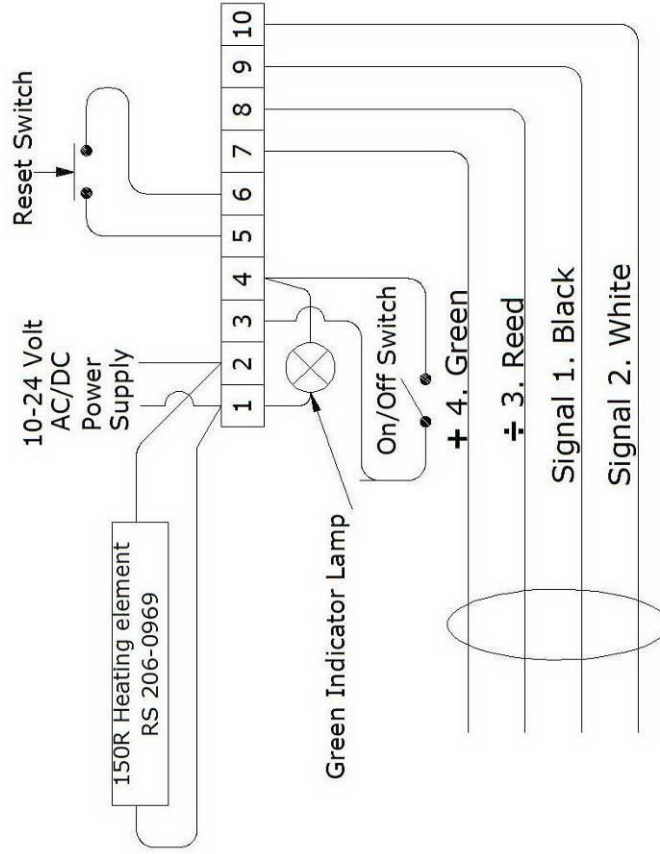
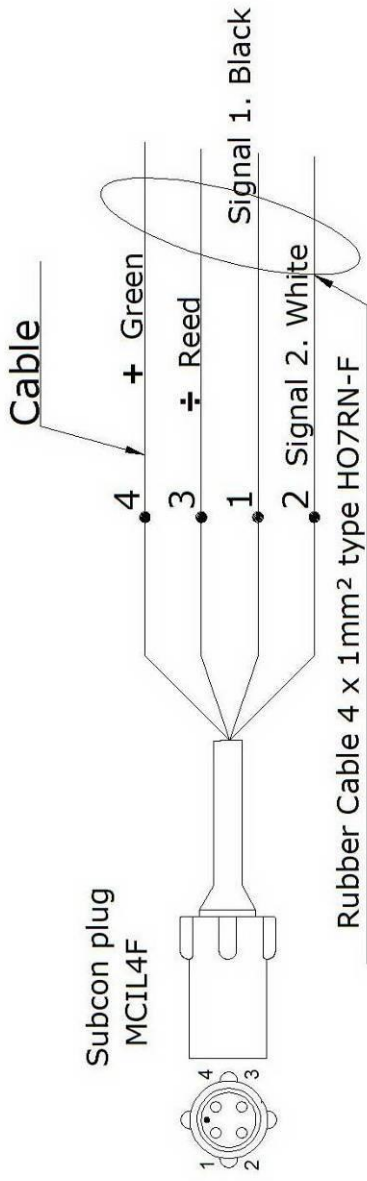
4	Operation:	
	<p>Push the green button to start the counter and the night visibility.</p> <p>When lowering the equipment and it hits the sea level, you can reset the counter to zero by pushing the red button.</p>	
5	Display:	
	<p>The display will show the cable length with a resolution of 10 cm.</p> <p>For a count of max. 9.999,9 m, the very first digit will show a maximum of 3 horizontal bars. The upper and lower bar indicates the counting impulses (and direction of the wire); the bar at the middle lights up when the reset button is activated.</p> <p>If the wire length exceeds 9.999,9 m, the first digit shows ten thousand of m, allowing a max. read-out of 99.999,9 m.</p>	
6	Heating element:	
	<p>The counter has an internal heating element to prevent condensate water, (always connected, regardless of the green button is on or off).</p>	
	Slave display	
7	<p>It is possible adding one or more slave displays for a simultaneously read-out on deck and in the wheelhouse.</p> <p>To prevent accidental resetting, we recommend, that the extra display has no buttons.</p> <p>Adding an extra counter requires a 5-conductor cable as per below schematic. Usually there is no need for a shielded cable.</p>	



Adding a slave display to the counter using a 5-conductor cable

	Troubleshooting:	
	<p><i>Incorrect read-out of the cable length:</i></p> <p>A KC Meter wheel has been designed for a specific diameter of wire and using another diameter of wire may cause an incorrect read-out of $\pm 1-2\%$.</p>	
8	<p><i>No count or flashing bars on the display:</i></p> <p>Look for the correct power supply; it must be in the range of 10 – 30 V AC or DC. If one or more bars are missing (for the very first digit to the left) it will indicate missing power supply or missing signal from the sensors in the meter counter wheel.</p> <p>The upper and lower bar will flash by turns while turning the counter wheel slowly. A missing bar indicates no signal from one of the sensors in the meter wheel. Test all connections through the cable. Using a voltmeter please test for the voltage across the negative cord (8) to P1 and P2. The voltage must be equal to the power supply and will change from 0 to max. voltage by turning the meter wheel.</p>	





- Colour code for
MCIL4F cable
1. Black wire signal 1
 2. White wire signal 2
 3. Reed wire ÷ 3
 4. Green wire + 4

5 or 10 Meter Subconn Connector Cable MCIL4F
from MacArtney Esbjerg
+45 76 13 20 00

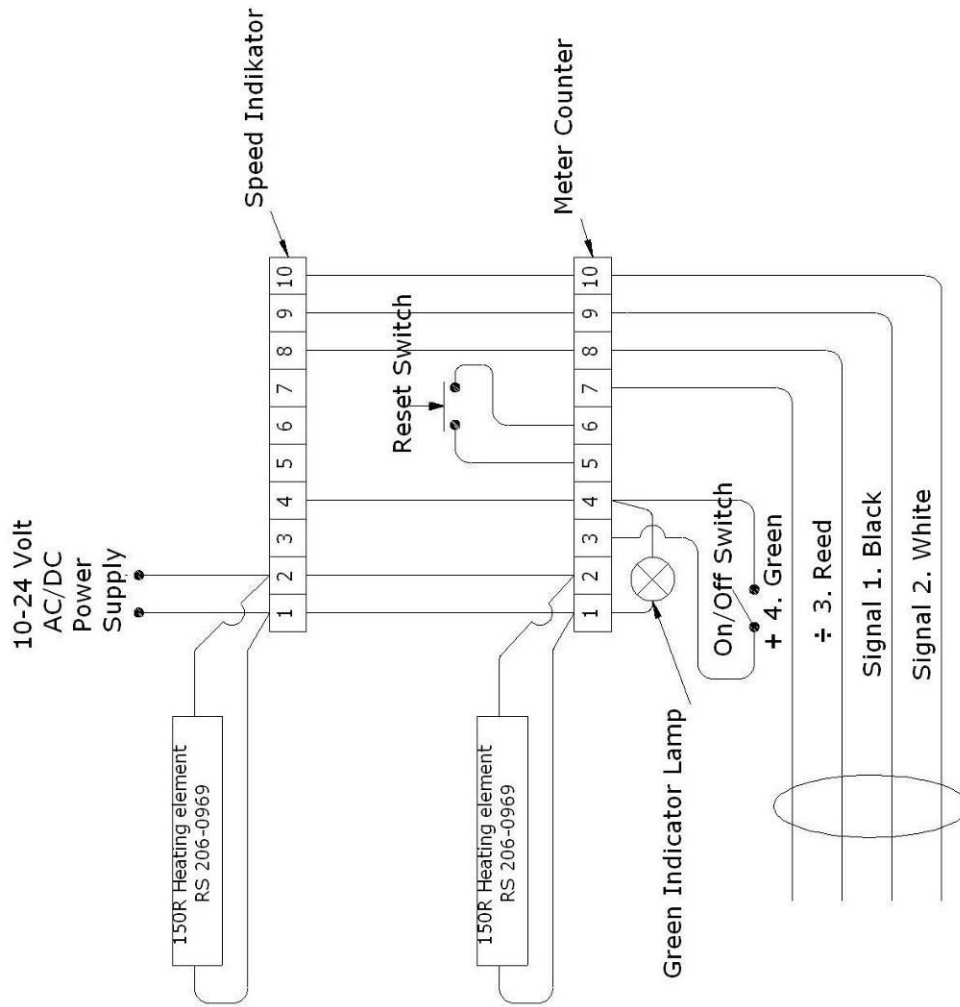
Dato 5-12-2006

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Connection diagram for
Meter Counter and Wheel

30.363



- Colour code for MCIL4F cable
- 1. Black wire signal 1
 - 2. White wire signal 2
 - 3. Reed wire ÷ 3
 - 4. Green wire + 4

5 or 10 Meter Subconn Connector Cable MCIL4F
 from MacArtney Esbjerg
 +45 76 13 20 00

Dato 28-11-2006

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Connection diagram for
 Speed and Meter Counter

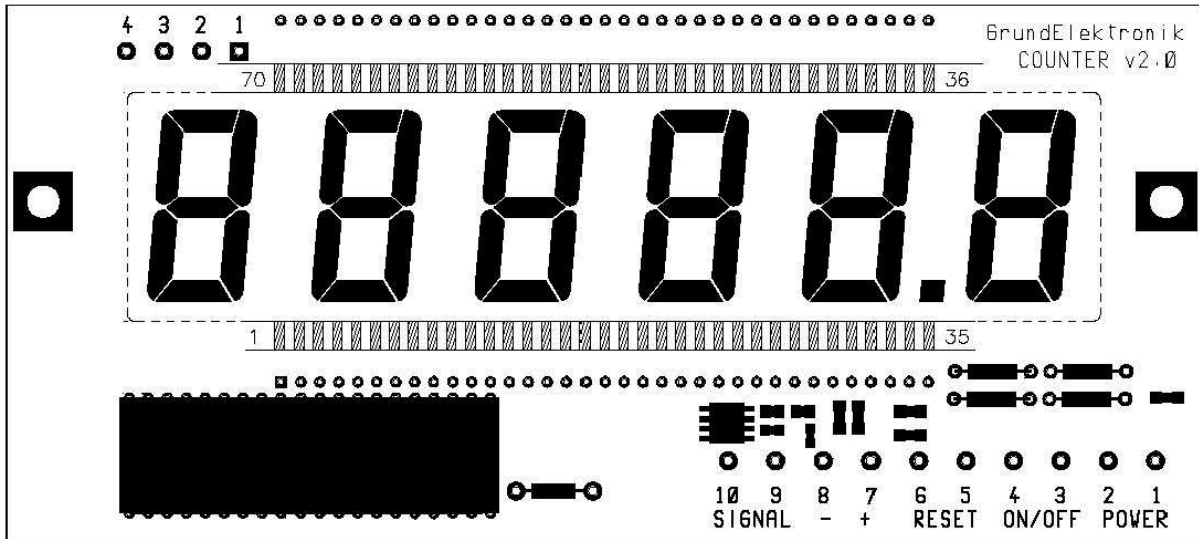
30.364

Meter Counter Version 2.2

Electronic are supplied from a rectified DC or AC power supply 10..50V 4W

Inductive sensors are supplied after the rectifier 10..30V

Circuit board dimensions 72mm x160mm



10 pole terminals:

1,2 Power DC or AC supply

3,4 Switch to power ON counter

5,6 Push switch to reset the counter

7,8,9,10 Connection to inductive sensor 1+2

4 pole terminals are for Communication with Counter via RS232, RS485 or USB

	RS232	RS485	USB
1	Not connected	Not connected	V+
2	TX	A	D-
3	RX	B	D+
4	GND	GND	V-

Communication = 9600 BAUD, parity = none, data = 8, stop = 1 Modbus RTU

01 03 00 00 00 02 C4 0B

read holding reg - read count

01 03 04 CC CC CC 00 crc

reply read count = CCCCCC = count BCD

01 10 00 00 00 02 04 CC CC CC 00 crc

preset holding reg - set counter

01 10 00 03 00 01 02 00 01 67 90

preset holding reg - reset counter

Examples:

01 03 00 00 00 02 C4 0B

01 03 04 01 23 45 00 38 95

01 10 00 00 00 02 04 01 23 45 00 31 09

01 10 00 00 00 02 41 C8

01 10 00 03 00 01 02 00 00 A6 63

01 10 00 03 00 01 F1 C9

read holding reg - read count

response on read count = 1234,5 m

set counter = 1234,5 m

response on set counter

reset counter = 0,0 m

response on reset counter

Answer time is about 15ms

Left digit is used for status information, if digit is blank:

A = Indicate signal on input 1

D = Indicate signal on input 2

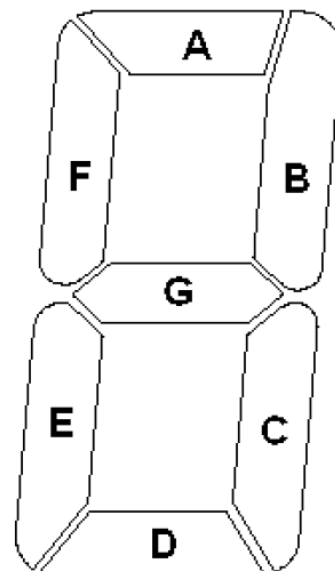
G = Indicate signal on reset input

F = Toggle Read Counter on communication

E = Toggle Reset Counter on communication

B = Toggle at CRC error on communication

C = Toggle Set Counter on communication



Rev. April 28, 2022 - lkj

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