



KC Winch
Model 40.200 – 7,5 kW




Manual

KC Denmark A/S

Research Equipment
Limnology • Oceanography • Hydrobiology

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	<p align="center">Manual for Winch, 11 kW</p>	<p align="center">Model no. 40.210</p>
	<p align="center">  Caution This winch is very dangerous in unskilled hands and serious precautions must be taken to avoid accidents. </p> <p>The safety cover must always be in the secured position to avoid any contact with the drum and the wire during operation.</p> <p>KC Denmark A/S is not, and cannot be held, responsible for any damage(s) made to equipment or to operators who ignore safety precautions or because of misuse or wrong operation.</p> <p>Before operating the winch for the first time, always check the lubricant level for the gear box, see item #9.</p>	
	<p>Preparation:</p>	
<p>1</p>	<p>The winch has 4 additional stands; they must be removed before installing. The winch must be secured on a plain and stable surface before use.</p> <p>Fasten with 4 bolts. To avoid any damage or injury, you must ensure free space for the wire in all positions.</p>	
<p>2</p>	<p>The rack for the brake resistors is placed on top of the winch. You must ensure the rack is well ventilated and do not cover the openings of the rack.</p>	

Operating the winch

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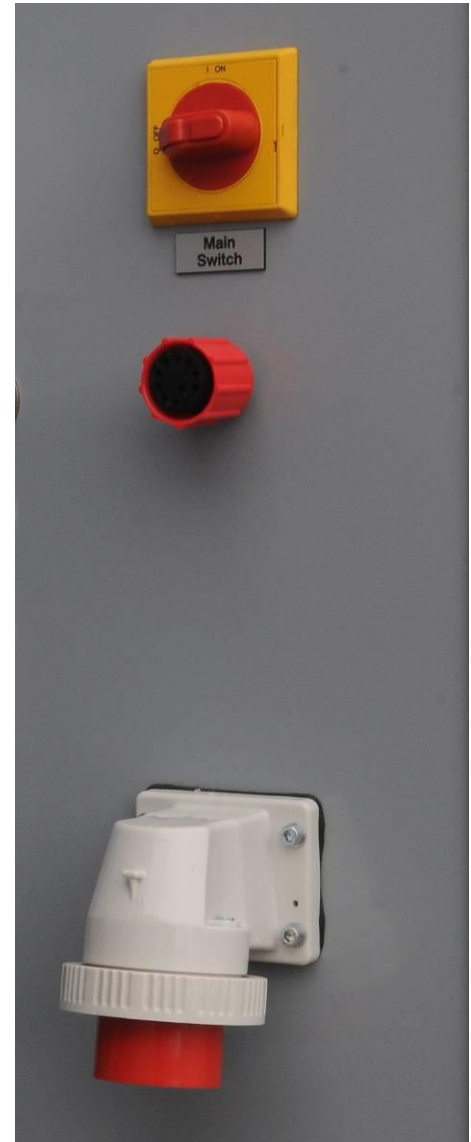
Ensure the proper power supply is available.

Standard delivery demands 3 x 400 V AC/50 Hz + ground.

Faulty connection or voltage may damage the winch.

Power supply is connected to the EEC plug and turning the switch clockwise will turn on the power.

The remote control must be connected to the Subconn connector below the main switch.



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Caution

The winch has a total of 3 emergency stops, located at each end of the winch and the last one can be found on the handheld control box. Pushing one of the stops will activate the winch's brake system immediately.

Once activated the push button will remain locked in the lower position. Pull it gently upwards to re-activate the winch.



5	 <p>Caution</p> <p>Loosen the mechanical emergency break <u>before activating the joystick</u> by turning anti clockwise until it stops. Otherwise, you might cause serious damage to the winch.</p>	
6	<ol style="list-style-type: none"> 1. The main switch is turned clockwise to position 1. See item 3 for location of the switch. 2. Press the green "Activate" button. 3. The joystick controls the wire direction and the speed of the winch. The more you press the higher speed. 4. Pushing the emergency stop will activate the winch's brake system immediately. Once activated the push button will remain locked in the lower position. Pull it gently upwards to re-activate the winch. 	
7	 <p>Caution</p> <p>When changing direction of the wire, return the joystick to neutral position. It is very important the drum has stopped before you activate the joystick in the opposite direction.</p> <p>By emergency or in need of a fast stop press the emergency switch and the winch will stop immediately. Two emergency switches are located on the winch, one switch at each end.</p>	

Meter and speed counter

Standard delivery of the winch does not include a counter. Adding a counter demands a meter wheel, too. A standard counter will count the meter length with a resolution of 10 cm. Optionally it can be replaced by a 2-display counter measuring the length as well as the speed of the wire.

Power supply:

The counter needs an external power supply of 10 – 24 V AC or DC. Power consumption: Max. 200 mA. Upon request it can be delivered with built-in batteries, power supply or charger.

Connection for power supply:

Brown and blue wire: 10 – 24 V AC or DC.
No need for polarity. Yellow/green wire: Earth.
No needs for connecting to ground.

Before inserting the cable or the steel wire on the meter wheel check out the counting direction of the wheel by manually turning of wheel.

Connection for meter wheel:

Attach the Subconn connector to the meter wheel.

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Operation:

Push the green button to start the counter and the night visibility.

When you lower the equipment and it hits the sea level, you can reset the counter to zero by pushing the red button.

The display:

The display will show the cable length with a resolution of 10 cm. Built-in light for night visibility and for easy read-out even in strong sun light.

The digits:

The very first digit will show a maximum of 3 bars. The upper and lower bar indicates the counting impulses and at the middle, the bar will show the power supply has been connected.

Heating element:

The counter has an internal heating element to prevent condensate water. (Always connected, regardless of the position of the green button).

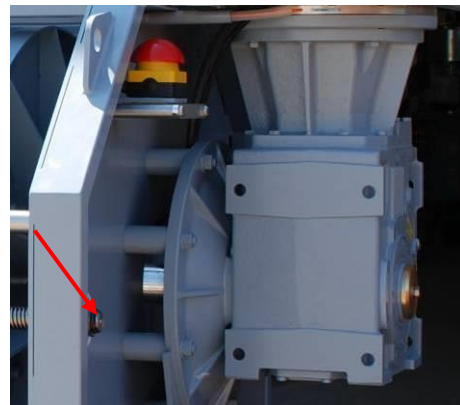
Interface:

The counter can be equipped with various interfaces for RS-232, RS-485 or for USB. On request, special software can be offered.

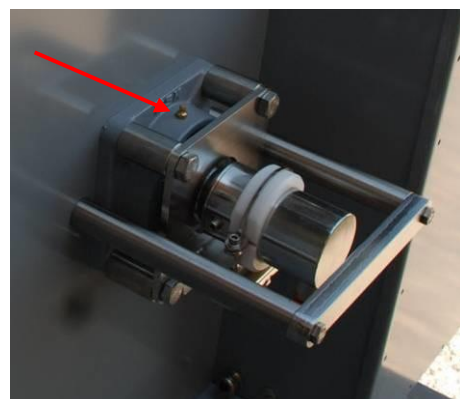


Maintenance

The ball bearing must be greased at the least every 6 months.



The ball bearing must be greased at the least every 6 months.

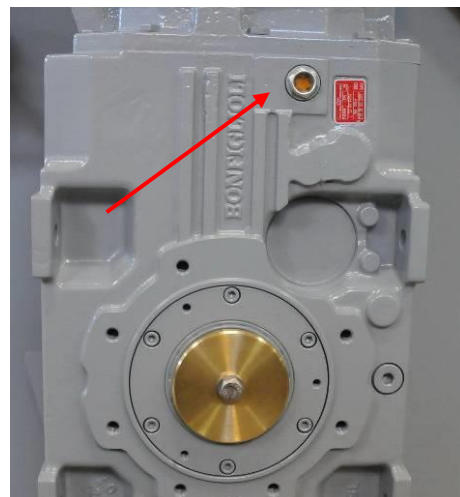


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For the gearbox the lubricant oil must be checked periodically. Check that the correct level has been reached via the sight glass. Max. 50 % visible through the glass. Top up as necessary. Do not overfill; it will cause excessive heat and potential damage to the gear.

Recommended lubricants or equivalent types:

BP Energol GR-XP 220
Shell Omala 220



Caution

The spindle and the guiding system must be greased as needed.

You can align the spooling by pulling the handle and moving the guiding system to the correct position.



Safety information



Caution

Disconnect power supply to avoid any unattended operation causing accident to personnel and winch.

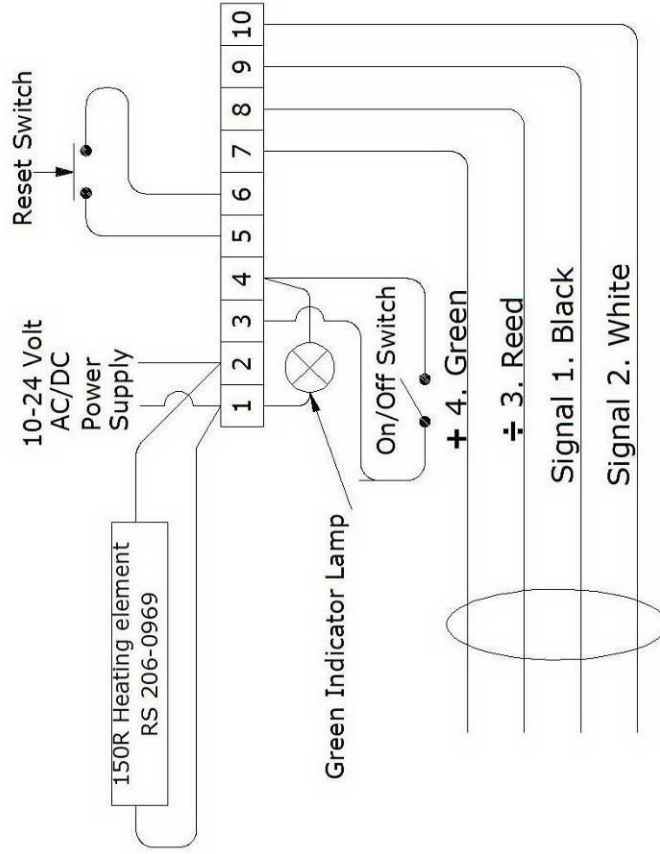
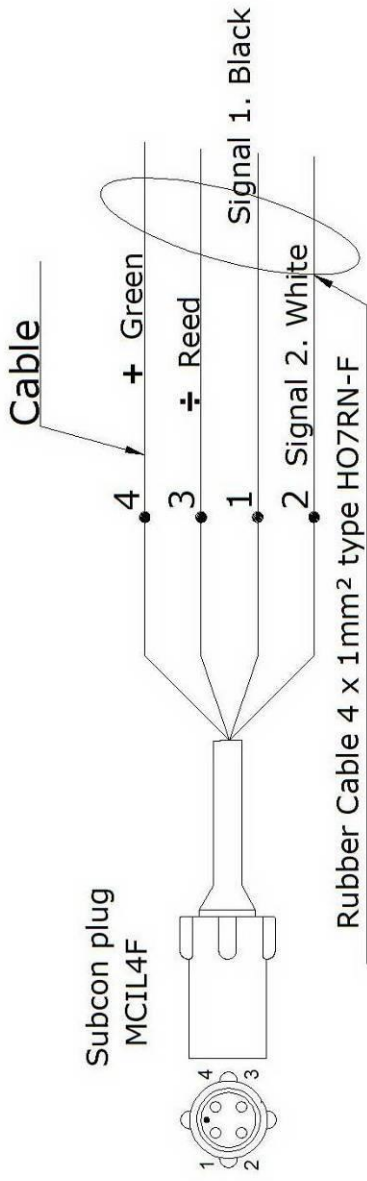
All maintenance, inspection and repairs must only be done by an expert maintenance technician fully familiar with the attendant hazards.

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Persons charged with working on the winch and the accessories must be trained specially for the purpose with special abilities and experience in this area as well as being equipped with the appropriate tools and individual safety equipment. Failure to meet these requirements constitutes a risk to personal health and safety and economic damages.

When working on the unit in areas which are difficult to access or hazardous, ensure that adequate safety precautions have been taken for the operator and others in compliance with the provisions of law on health and safety at work.

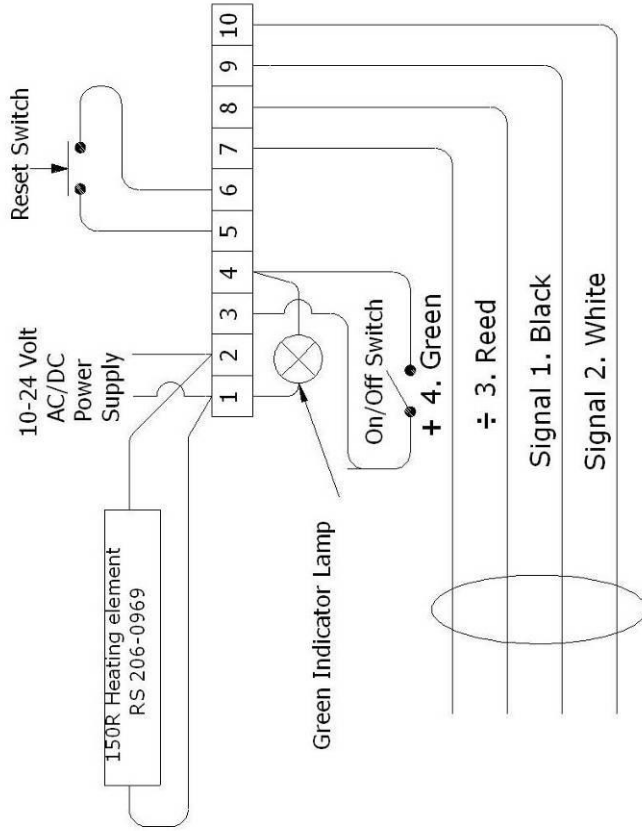
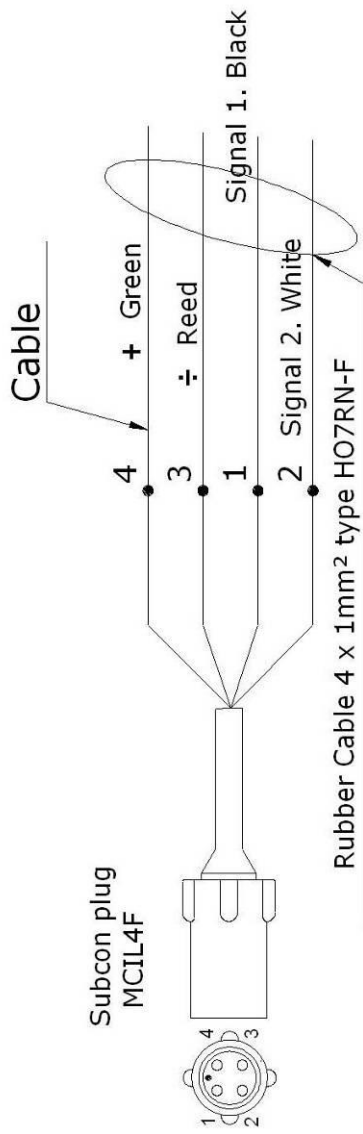
Replace worn component with original spare parts. Use the lubricants (oil and grease) recommended by the manufacturer.



- 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

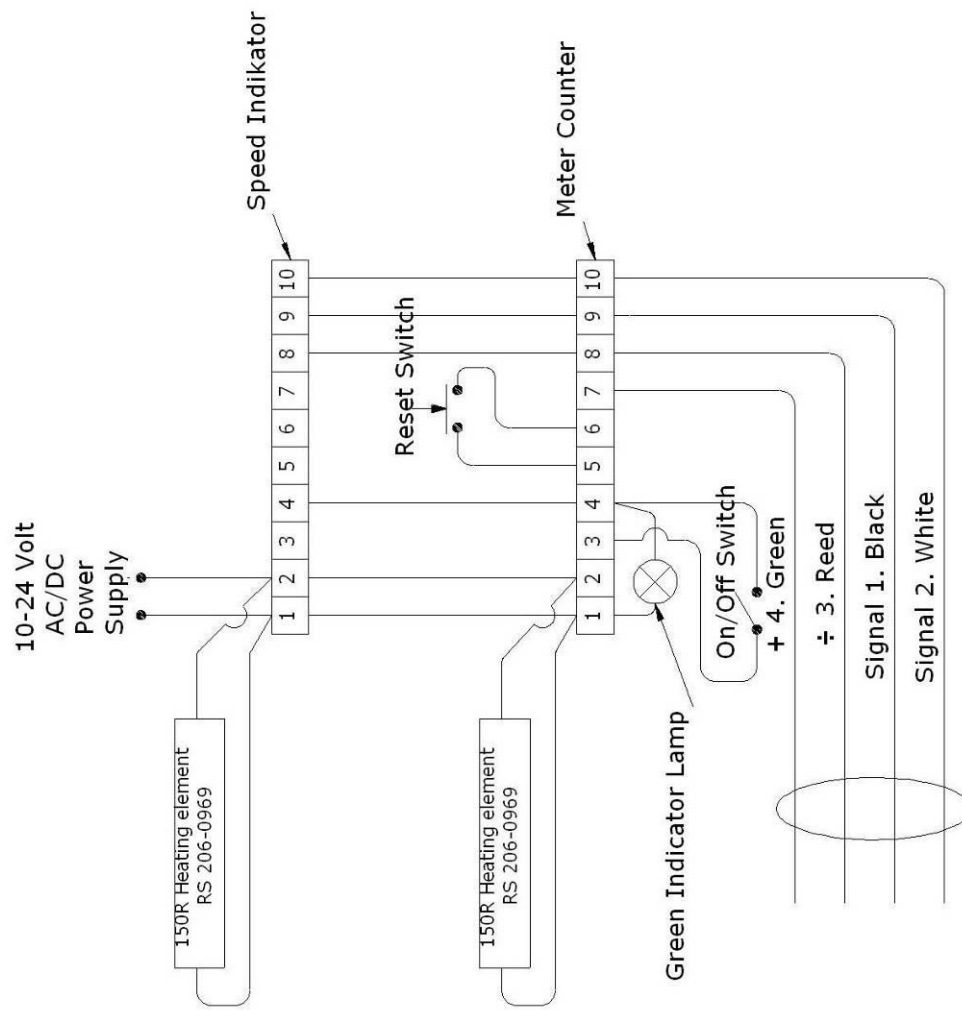
Dato 5-12-2006		KC Denmark - Research Equipment Lungsby, Copenhagen, Byggholmvej Tel. +45 86 82 83 47 · Fax. +45 86 82 48 00		KC
Connection diagram for Meter Counter and Wheel			30.363	



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

Dato	5-12-2006	KC	
KC Denmark - Research Equipment Utopiavej 69, Hørsholm, Hovedstaden Tel: +45 82 33 47, Fax: +45 82 32 82 81			
Connection diagram for Meter Counter and Wheel			30.363



Colour code for MCIL4F cable

1. Black wire signal 1
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5 or 10 Meter Subconn Connector Cable MCIL4F
from MacArtney Esbjerg
+45 76 13 20 00

Dato 28-11-2006

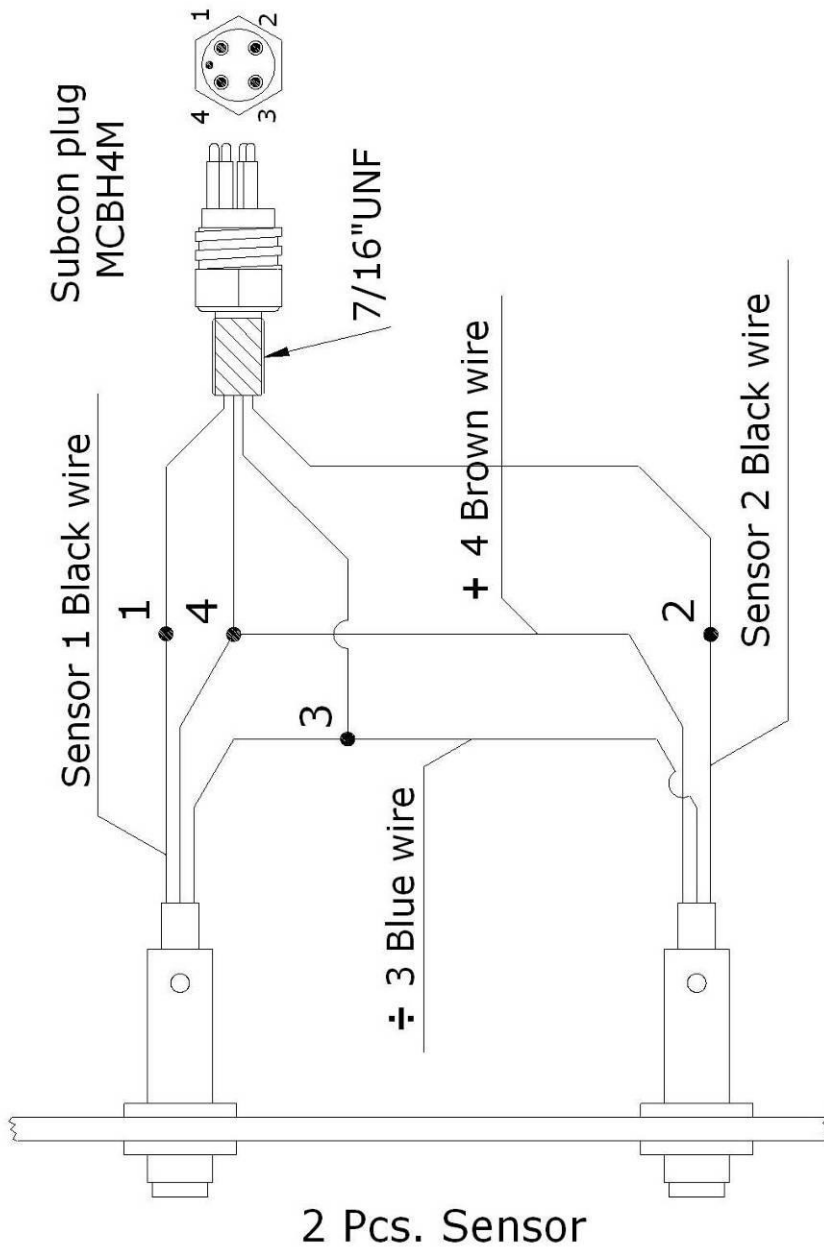
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KC

Connection diagram for
Speed and Meter Counter

30.364

Wheel



Subconn Connector MCBH4M
from MacArtney Esbjerg
+45 76 13 20 00

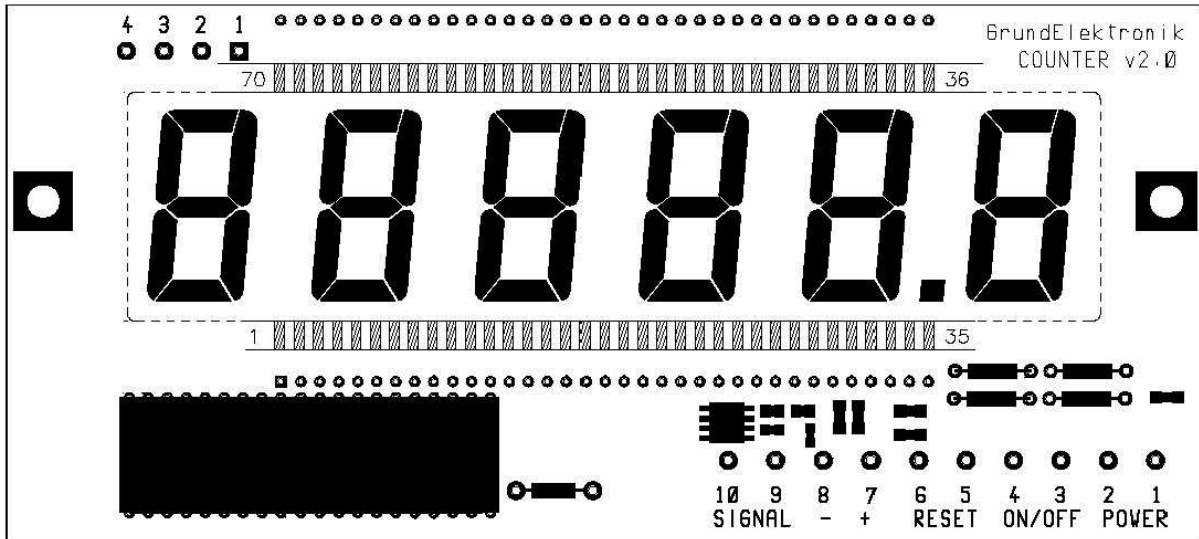
Dato	5-12-2006	KC	
KC Denmark - Research Equipment Ligningsvej 10, Copenhagen N, Denmark Tel. +45 86 52 83 47 / Fax. +45 86 52 49 50			
Connection diagram for Meter Counter and Wheel			30.368

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

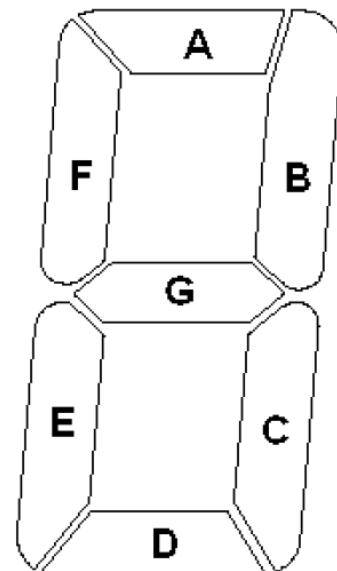
G = Indicate signal on reset input

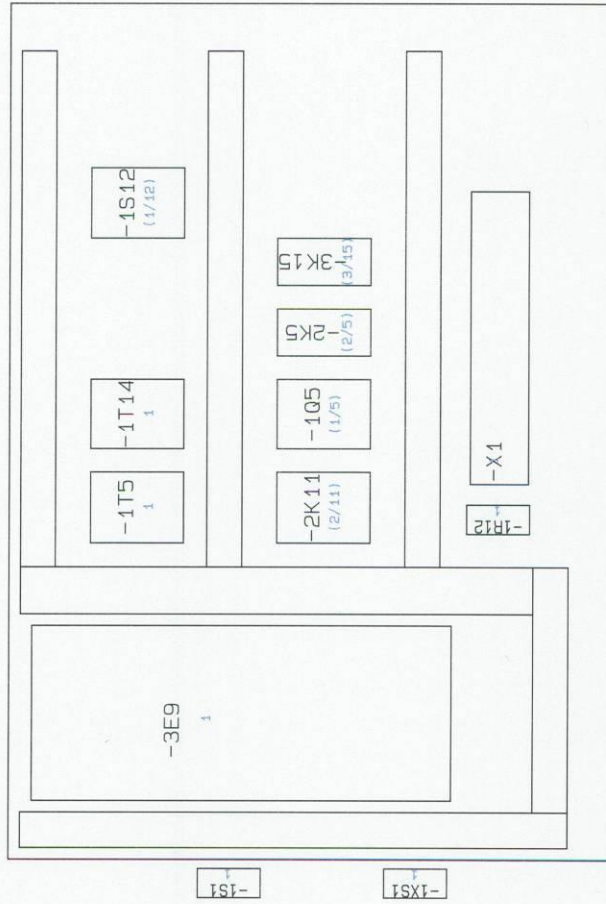
F = Toggle Read Counter on communication

E = Toggle Reset Counter on communication

B = Toggle at CRC error on communication

C = Toggle Set Counter on communication





Plotter data: Diagram: KC_1109011 Date: 08-03-2011 Time: 11:1

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Client: KC Denmark Research Equipment
 Project: Winch nr. 40.200
 Prep: PKP

Cabinet layout
 Rev: A

Dwg no: 11 09 011
 Func.: Plac.: +C1
 Date: 01.03.2011
 Page: 1

Winch

EAN Number	LM-Number	Description	Type	Component	Manufacturer	Supplier	Plac.	Page.
619406	ALD	CABINETMOUNTED COUPLER	619406		WALTHER	ALD	+CI	1/1
4017918090760	324837	Feed-through terminal blocks	UKSN		Phoenix	Phoenix	+CI	1/11
				-1H12			+CI	1/11
				-1M9			+CI	1/9
9005738692764	ALD	CIRCUIT BREAKER 1.6-2.5A	MU25A-2.5	-1Q5	Benedikt & Jäger	MTO	+CI	1/5
04701.0-00	ALD	CABINETHEATER 230V 20W	04701.0-00	-1R12	STEGO	MTO	+CI	1/12
6417019101637	ALD	Load Break Switch OT16ET3	OT16ET3	-1S1	ABB	ABB	+CI	1/1
5705626577240			KTS011141	-1S12			+CI	1/12
4015082163761	ALD	Element 1NO	M22-K10	-1S16/1	MOLLER	GYCOM	+CI	2/5
4001869904764	333937	Trafo 315VA 208-550V/2x115V	4AM4342-8DD40-0FA0	-1T5	SIEMENS	SIEMENS	+CI	1/5
4017918890520	323537	Power Supply 240AC / 24DC 5A	QUINT-PS-100-240AC/24DC/5	-1T14	Phoenix	Phoenix	+CI	1/14
619406	ALD	CABINETMOUNTED COUPLER	619406	-1XS1	WALTHER	ALD	+CI	1/1
4015082165598	ALD	LED ELEMENT 18-30V	M22-1LED-G	-2H7	MOLLER	GYCOM	+CI	2/7
9004840149500	ALD	SOCKET 2 POLE RELAY	PT270024	-2K5	SCHRACK	MTO	+CI	2/5
9005738972071	ALD	CONTACTOR 7.5KW 18A Coil 24VDC	KG3-18A01-24VDC	-2K11	Benedikt & Jäger	MTO	+CI	2/11
4015082165154	ALD	Emergency stop complete	M22-PV/K01	-2S2	MOLLER	GYCOM	+CI	2/2
4015082165154	ALD	Emergency stop complete	M22-PV/K01	-2S2/1	MOLLER	GYCOM	+CI	2/2
4015082165154	ALD	Emergency stop complete	M22-PV/K01	-2S2/2	MOLLER	GYCOM	+CI	2/2
ACS800-01-0011-3-E20	ALD	ACS800 7.5Kw Frequency converter	ACS800-01-0011-3-E202	-3E9	ABB	ABB	+CI	3/9
				-3K15			+CI	1/8
9004840149500	ALD	SOCKET 2 POLE RELAY	PT270024	-3K15	SCHRACK	MTO	+CI	3/15
MW1-1P	ALD	RAVIOLI JOYSTICK	MW1-1P	-3P8	ELTECO	ALD	+CI	3/8
HS300 22R	ALD	300W 22ohm	HS300 22R	-3R4	ARCOL	ALD	+CI	3/4
HS300 22R	ALD	300W 22ohm	HS300 22R	-3R4/1	ARCOL	ALD	+CI	3/4
HS300 22R	ALD	300W 22ohm	HS300 22R	-3R5	ARCOL	ALD	+CI	3/5
HS300 22R	ALD	300W 22ohm	HS300 22R	-3R5/1	ARCOL	ALD	+CI	3/5
4017918090760	324837	Feed-through terminal blocks	UKSN	-X1	Phoenix	Phoenix	+CI	1/12
4017918090760	324837	Feed-through terminal blocks	UKSN	-X1	Phoenix	Phoenix	+CI	2/7
4017918090760	324837	Feed-through terminal blocks	UKSN	-X2	Phoenix	Phoenix	+CI	2/2
4017918090760	324837	Feed-through terminal blocks	UKSN	-X2	Phoenix	Phoenix	+CI	2/7


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Client: KC Denmark Research Equipment
 Project: Winch nr. 40.200
 Prep: PKP

Komponentliste
 Rev: A

Dwg no: 11 09 011
 Date: 01.03.2011

Page: 1

+C1:4..+C1-X2:6**Ekstern**

Pos	Klemme	Komponent	Funktion
1	+C1:4	+C1-1H12:2	
2	+C1:L2	+C1-1S1:4	SUPPLY 3X400V+PE
3	+C1:L3	+C1-1S1:6	
4	+C1:PE	+C1-X1:21	
5	+C1-1XS1:L1	+C1-1S1:2	MAX 16A
6	+C1-X1:11	+C1-2K11:A2	
7	+C1-X1:1	+C1-1M9:3	TERMINAL BLOCKS
8	+C1-X1:2	+C1-1M9:4	Brake 1M11
9	+C1-X1:3	+C1-1H12:1	
10	+C1-X1:5	+C1-X2:5	
11	+C1-X1:6	+C1-2S2/1:1	
12	+C1-X1:7	+C1-2S2/1:21	
13	+C1-X1:8	+C1-X2:8	
14	+C1-X1:9	+C1-X2:9	
15	+C1-X1:10	+C1-X1:10	
16	+C1-X1:10	+C1-X2:10	
17	+C1-X1:12	+C1-X2:12	
18	+C1-X1:13	+C1-X2:13	
19	+C1-X1:14	+C1-X2:14	
20	+C1-X1:15	+C1-X2:15	
21	+C1-X1:16	+C1-X2:16	
22	+C1-X1:20	+C1-1R12/1:2	
23	+C1-X1:20	+C1-1R12:2	
24	+C1-X1:21	+C1-1R12:1	
25	+C1-X1:R+	+C1-3R4:2	
26	+C1-X1:R-	+C1-3R5/1:2	
27	+C1-X2:11	+C1-X1:11	
28	+C1-X2:5	+C1-2S2:1	
29	+C1-X2:6	+C1-X1:6	



Kunde: KC Denmark Research Equipment

Sagsnr.:

Projekt titel: Winch

Projekt rev.:

Sidetitel:

Side rev.:

Sidst ændret: 01-03-2011

Side 1 af 2


Sidst udskrevet: 08-03-2011 08:00:50

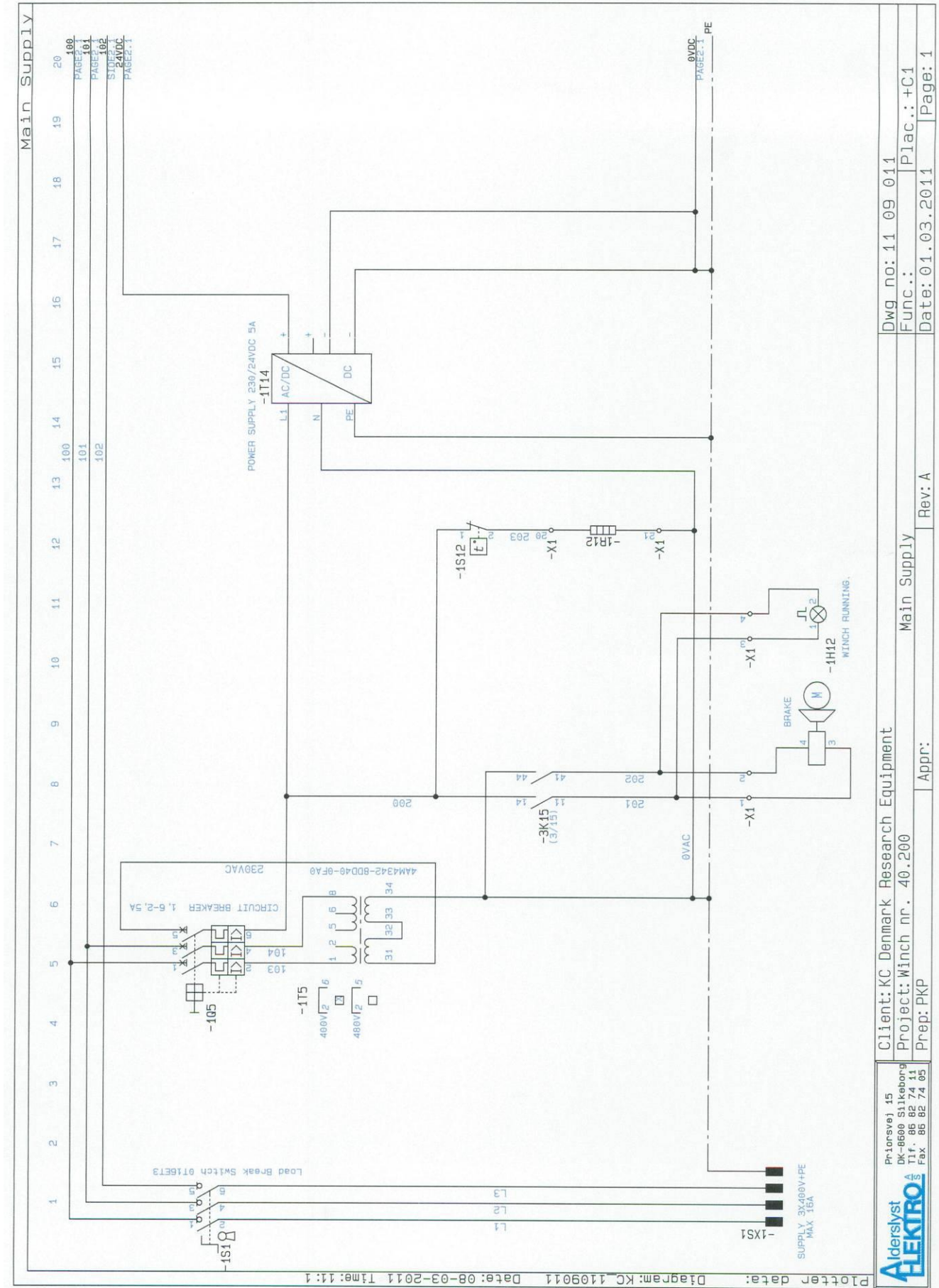
Antal brugte sider: 13

+C1-X2:7..+C1-X2:16

Ekstern

Pos	Klemme	Komponent	Funktion
30	+C1-X2:7	+C1-X1:7	
31	+C1-X2:8	+C1-2S2:21	
32	+C1-X2:9	+C1-1S16/1:3	
33	+C1-X2:10	+C1-X1:10	
34	+C1-X2:10	+C1-2H7:X1	
35	+C1-X2:12	+C1-3P8:3	
36	+C1-X2:13	+C1-3P8:1	
37	+C1-X2:14	+C1-3P8:2	
38	+C1-X2:15	+C1-3P8:	
39	+C1-X2:16	+C1-3P8:	
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	Kunde: KC Denmark Research Equipment	Sagsnr.:
	Projekt titel: Winch	Projekt rev.:
	Sidetitel:	Side rev.:
		Sidst ændret: 01-03-2011
		Side 2 af 2
	Sidst udskrevet: 08-03-2011 08:00:50	Antal brugte sider: 13



Last. rev.: October 11, 2021 - lkj

KC Denmark A/S

Research Equipment
Limnology • Oceanography • Hydrobiology

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