

DUAL COUNTER OC7130

Owner's Manual

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Vor dem Einschalten

Überzeugen Sie sich, ob Ihre Sendung das richtige Gerät Orbit Controls Modell OC 7130 beinhaltet, einschliesslich einer Betriebsanleitung OC 7130.

Vor dem Einschalten des Gerätes überprüfen Sie die Anschlüsse und die Versorgungsspannung. Ein falsch angeschlossenes Gerät kann beschädigt werden und damit auch die mitverbundene Folgeelektronik. Für falsche Handhabung wird jede Haftung abgelehnt.

ZU BEACHTEN

Dieses Gerät wurde sorgfältig verpackt. Falls es bei Ihnen in beschädigtem Zustand eintrifft, benachrichtigen Sie unverzüglich den Orbit Controls Kundendienst (Tel: +41 1 730 2753 oder Fax: +41 1 730 2783) und nehmen Sie einen Schadenrapport auf, welchen Sie auch von der Transportgesellschaft unterschreiben lassen. Bewahren Sie bitte das Verpackungsmaterial für eventuelle Reklamationen auf.

Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following:

Orbit Controls Model OC 7130 Programmable Controller.

Operator's Manual OC 7130.

If you have any questions about the shipment, please call the Orbit Controls Customer Service Department.

NOTE

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the Orbit Controls customer service, Phone +411 730 2753 or Fax +411 730 2783 and to the shipping agent.

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in event the reshipment is necessary.

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PROGRAMMABLE DUAL COUNTER OC7130

- ✓ Frequency Counter-Tachometer
- ✓ Up-Down Counter
- ✓ Cumulating Counter
- ✓ Free Scalable Display
- ✓ Parameter Memory
- ✓ Four Set Point Relays
- ✓ RS232 and RS485
- ✓ Excitation



OC7130 is a 6 digit programmable dual counter with for one input signal. The counter measures the frequency of the input pulses and cumulates them at the same time. Two scaling constants permit that the frequency is displayed in units such as RPM, Liter/min., meter/sec., Gal/h etc. whereas the cumulating counter stores and displays the pulses in kg, Gallons, Litres and other process units as required. The instrument is designed for industrial applications for connection to incremental resolvers, pick-ups and other pulse sources. The programming via the keyboard permits setting of two scaling constants, two presets, measure and reset time, display resolution, four set points and two serial data ports. The display can selectively show the momentary or the cumulated results.

The counter has two inputs. The first input receives the input pulses; the logic level at the second input determines the counting direction. The typical application is in flow measurements. Since the two scaling constants are fully independent from each other, the frequency counter measures the momentary flow rate whereas the cumulating counter displays the total of liquid flown through the flowmeter.

Floating Arithmetic permits practically unlimited display capacity of the cumulating counter. The programmed decimal point is automatically positioned as soon as the display arrives at full capacity. When during the counting application the full display capacity with a decimal point behind the LSD is achieved, the display shows the result in exponential expression.

Preset is a 6 digit display offset with decimal point and sign. The values are free programmable from the keyboard. The display starts counting at the PRESET.

Scale of the reading can be set for the frequency and for the cumulating counter independently by using two multiplication and two division constants.

Last Display Reading is automatically memorized when the instrument is switched-off from the power supply. The last reading of the cumulating counter is inserted into the display when the instrument is switched-on again.

Options: Two Analogue Outputs -10 ... +10V and 0/4-20mA, two Serial Data Ports RS232 and RS485 and two Set Points are available. The Set Points have four open collector transistors or four mechanical relay. The Data Ports are optically isolated from the inputs and the supply.

1 KEYBOARD

With the keyboard the menu can be opened and the parameters entered. The Menu contains the selection of four Set Points, two Scaling Constants, Preset and Reset time, Display Resolution, Baud Rate and Address of the Serial Data Ports. With the keyboard the display function can be set for momentary or cumulated values.



2 MENU

With five keys UP, DOWN, ACK, MENU and SET the Menu can be opened and the parameters programmed. The PRG - LED at the front indicates the programming mode. With the key MENU the parameters can be scrolled at the display. The key ACK confirms the parameter to be programmed. It can be set with UP or DOWN. The key SET has a cursor function. The decimal point and the sign can be set when the cursor (flashing digit) is moved outside the display (none of the digits is flashing). The key UP sets the decimal point, DOWN the sign. In the measure mode the key SET resets the display to zero. If during programming none of the keys are applied for longer than 15 seconds, the meter switches automatically to the measure mode.

Key	Display	Function
MENU	SCAL C	Multiplication constant of the cumulating counter
MENU	dSCAL C	Dividing constant of the cumulating counter
MENU	Set C	Preset. The cumulating counter starts counting at Preset.
MENU	SCAL F	Multiplication constant of the momentary (frequency)counter
MENU	dSCAL F	Dividing constant of the momentary (frequency)counter
MENU	Set F	Preset, display offset of the momentary (frequency)counter
MENU	SP1	Set point 1, Relay output 1
MENU	SP2	Set point 2, Relay output 2
MENU	SP3	Set point 3, Relay output 3
MENU	SP4	Set point 4, Relay output 4
MENU	bAUd	Baud Rate of the serial port: 600...19200 bd
MENU	rELFCE	Assigning the relays to momentary or cumulating display
MENU	Ord C	Display resolution of the cumulating counter
MENU	Ord F	Display resolution of the momentary counter
MENU	Set tF	Reset time for the momentary counter: 1...40 sec.
MENU	Start	Measuring Mode

3 MODE of OPERATION

The momentary or the cumulating display can be selected with the UP and DOWN keys.

Key	Display	Function
UP	F ----	The display shows the momentary value
DOWN	C ----	The display shows the cumulated value

4 SCALE and dSCALE

The measured results can be scaled for required process units by using multiplication and division.

SCALE	Multiplication constant of the display
dSCALE	Dividing constant of the SCALE.
Set	Display offset

$$\text{Anzeige} = \text{Impulse} \times \text{Scale} : \text{dSCALE} + \text{SEt}$$

Example:

Flowmeter delivers 8150 pulses /litre from 0.3 to 9.0 LPM. The momentary display shall be calibrated in litre/minute, the cumulating display has to store litres.

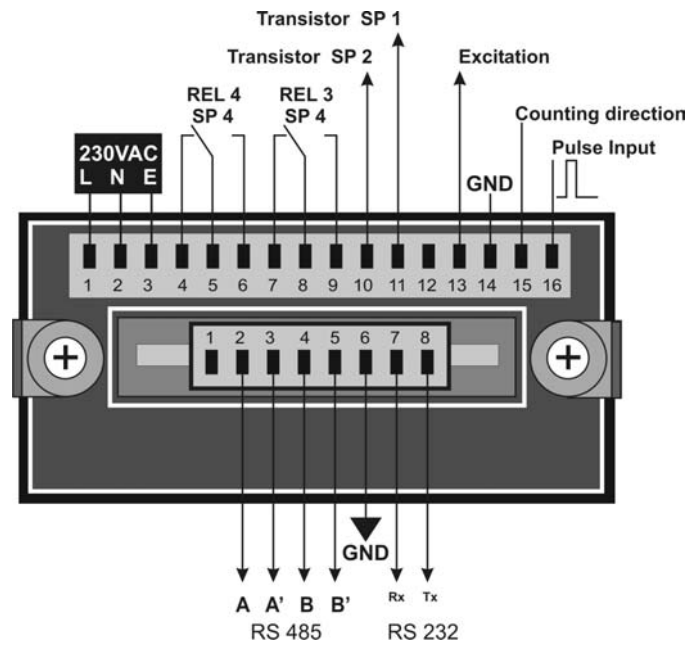
Momentary Display: $9 \times 8150 = 73350 \text{ pulses/min} = 1222.5 \text{ Hz}$
Scaling: $9 : 1222.5 = 0.007361963$
SCALE F: 7.36196
dSCALE F: 1000

Cumulating Display: $9 \times 8150 = 73350 \text{ pulses after 9 litres.}$
Scaling: $9 : 73350 = 0.00012269938$
SCALE C: 1.22699
dSCALE C: 10 000

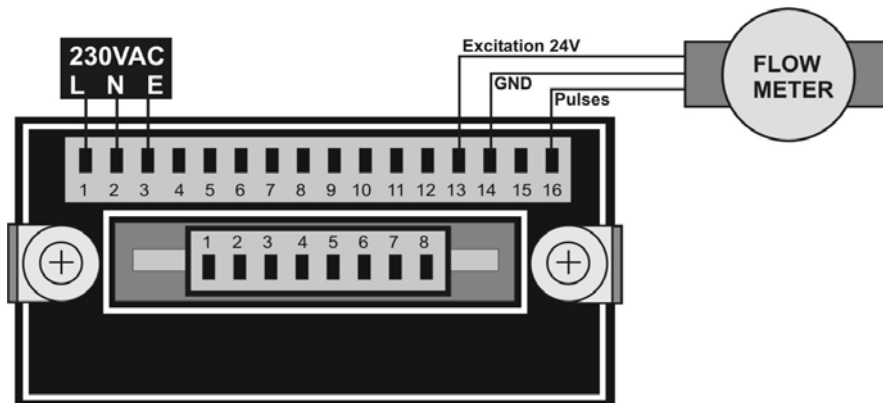
5 SPECIFICATIONS

DISPLAY:	6 digits, 7 segments, LED red, 14.7 mm. Display capacity 0 ... ± 999999 with floating arithmetic and exponential expression at overflow.
KEYBOARD:	UP, DOWN, ACK, MENU, SET keys at the front.
INPUTS:	Positive logic 5V CMOS, protected to 48V. Input A: Pulses Input B: Direction up: log. 0 or open Direction down: log.1. Frequency Range: 0 ...100 kHz.
SCALE:	SCAL C and SCAL F. Six digits multiplicative constant 0 to ± 999999 with decimal point and sign.
SET:	SET C and SET F: Display Offsets.
DATA BUS:	RS232, RS485 with 8 bit, 1 Start, 1 Stop, No Parity. Baud Rate: 600 to 19200 bd.
RELAYS:	Four Relays 5A/230VAC can be assigned to the momentary or to the cumulated display.
RESOLUTION:	Ord C: Selection of the decimal point for the cumulating display. Ord F: Selection of the decimal point for the momentary display.
RESET:	Set tF: Reset Time of the momentary (frequency) counter: 1-40 sec.
EXCITATION:	5-24V/40mA adjustable (instruments with mains supply only)
SUPPLY:	115/230V $\pm 10\%$, 50-60Hz, 6VA. Option: 24 V DC, 4 W.
CABINET:	DIN 48x96mm, depth behind the bezel 150mm. Panel cut-out 45x93 mm.
TERMINALS:	Pluggable screw terminals.

6 OC7130 TERMINALS



6.1 Connection to a Flowmeter



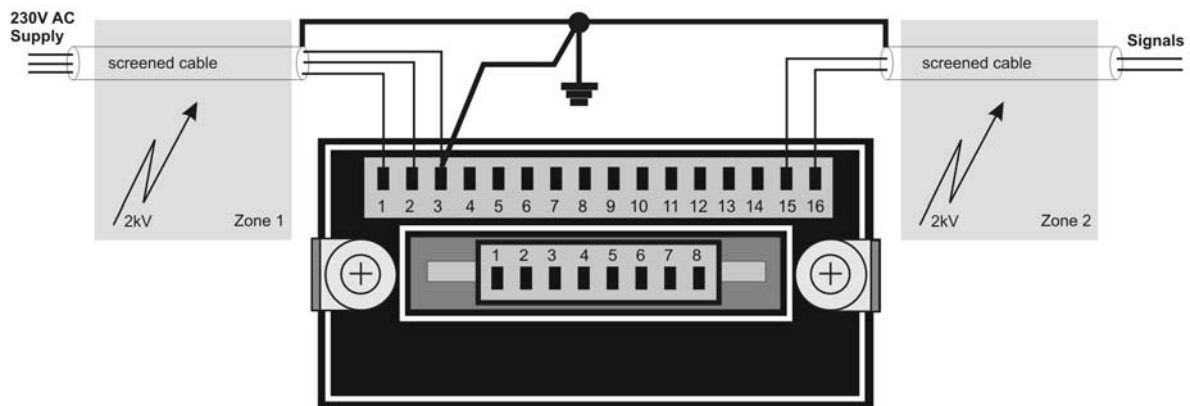
7 BURST TEST and recommended CONNECTIONS

Tester: Burst-Surge Generator HILO, Model CE-Tester
Datum: 15. June 2000
E.U.T.: OC7130, SN:200615, Supply 230VA
Mode: Frequency Counter: *SCAL = dSCAL1 = 1,*
OrdEr = CCCCC.C
Cumulating Counter: *SCAL = dSCAL = 1,*
OrdEr = CCCCCC
Input: 100 Hz
Display: Frequency 100.0

7.1 Test Conditions

IEC norms: IEC 801-4
IEC 1000-4-4
EN 50052-1

7.2 Test Set - Up



7.3 Test Results

Zone 1: 2kV Burst Display: 100.0 without change
Zone 2: 2kV Burst Display: 100.0 without change

Technician: Oliver Matthews 15. June 2000