



# Digital Counter-Controller OC 7171A-3D-SP

- ✓ Quadrature Counter
- ✓ UP-Down Counter
- ✓ Tachometer-Frequency Counter
- ✓ 0.003 Hz-100 kHz Frequency Range
- ✓ Free scalable Display
- ✓ Two Set Points Relays
- ✓ Two Analogue Outputs
- ✓ RS232 and RS485 addressable
- ✓ Last Reading Memory



**Orbit Controls OC7171A-3D-SP** is a 5-digit counter with programmable functions for Quadrature Positioning Counter with bi-directional incrementing, Up-Down Counter and Tachometer-Frequency Counter. The instrument is designed for industrial applications in connection with digital encoders, magnetic pick-ups and other industrial pulse sources.

The programming with the keypad contains the selection of Scale, Preset, Filter, Measuring Time, Reset Time, Password and two Set Points. The Set Point values are displayed at two smaller displays below the main display.

The function for the Quadrature counter, the Up-Down counter or the Tachometer is programmable with the keypad.

**Incremental-Quadrature Counter** is designed for fast positioning applications by using two 90° phase shifted A and B signals from linear or rotative incremental resolvers. The counting direction is automatically derived from the phase shift of the two signals. The display increments with each edge of A and B signals.

**Up-Down Counter** can be used for bi-directional counting applications. The pulses to be counted are connected to the input A. The logic

signal at the input B determines the counting direction up or down.

An additional mode of operation can be selected with the keypad in which the display counts up when the pulses are connected to the input A and counts down when the pulses are connected to the input B.

**Tachometer** - Frequency counter will be used for measurements of RPM, speed, frequencies and other dynamic applications at which the frequency is at the input.

The display is selectable in required process units. The input signal can be entered from one or two signal sources. When an incremental resolver is connected, the display can bi-directionally indicate RPM by utilizing the sign at the main display.

**Floating Point Arithmetic** permits practically unlimited display capacity. The programmed decimal point is automatically positioned to the right when the display arrives at full capacity. The display switches into exponential expression, e.g. 123E6 when the counts at the display exceed the value of 99999 with decimal point behind the LSD.

**Preset** of 5 digits with decimal point and sign can be inserted into the display with the keypad or with an external control signal. The display starts counting or incrementing at the Preset.

**Scale** of the display can be achieved with both, multiplication and division. Multiplication has free programmable 5 digit number with decimal point and sign. The division has constants :1 to :100000 selectable in decimal steps. By using the scale, the display can be programmed in any required process unit such as mm, inch, LPM, Gallons, m/sec, RPM etc.

**Averaging Floating Filter** has programmable constants from 1 to 99 and permits the instrument to measure signals from mechanically vibrating resolvers or signal sources at noisy environments.

**Last Reading** is automatically stored when the instrument is switched-off from the supply. When the power is applied again, the display starts counting at the memorized last reading value.

**Two Analogue Outputs**, two serial Data Ports and additional two Set Points with transistor outputs or mechanical relays can be optionally ordered. They increase the universality of the instrument in many industrial applications for automation as a process controller.

**Soft Manager** for Windows is optionally available and permits the communication with the PC and setting of parameters from the PC.

## ORBIT CONTROLS AG

Zürcherstrasse 137  
CH-8952 Schlieren/ZH, Schweiz

© orbitcontrols 21402

info@orbitcontrols.ch  
www.orbitcontrols.ch

# MENU

With the keypad the menu can be opened and the parameters programmed:

**PASS** Password permits entering the menu and programming of the instruments parameters.

**PRESET** is a 5 digit additive constant (Offset) with the decimal point and the sign.

**SCALE** is a 5 digit multiplicative constant with the decimal point and the sign.

**DSCALE** is a dividing constant selectable from :1 to :800 000.

**ORDER** determines the display resolution by placing the decimal point from X.XXXXX to XXXXXX.

**FBASE** is activated in the Tachometer-Frequency counter function. It determines the measuring time from 300ms to 160 sec.

**OBASE** is activated in the Tachometer-Frequency counter function. It determines the time between two consecutive input pulses prior the display resets to zero. The reset is programmable from 1.2 to 320 sec.

**PASSWORD** permits setting of the password as one of 20 firm memorized combinations.

**ANALOG** are two analogue outputs 0/4-20mA and  $\pm 10V$ . With the keypad they can be assigned to any two display values.

**FILTER** is a floating averaging filter with constants free programmable from OFF to 99.

**DATA BUS** RS232 and RS485. Up to 31 instruments can be connected on one RS485 data bus.

## SPECIFICATIONS OC7171A-3D-SP

**Main Display** -9999 ... +99999, red 10 mm

**Set Point Displays** -9999 ...+99999, red, 7.5mm

### Inputs

DC-100kHz, positive logic 5V protected to 28V.

### Preset

Additive constant (offset) is programable from 0 to 99999 with decimal point and sign. The preset can be inserted into the display with the keypad.

### Reset

The display can be set to zero with the keypad or with the external positive signal 5-28V at the input C.

### Analogue Output (Option)

Voltage: 0 ...  $\pm 10V$

Current: 0/4-20mA.

Resolution: 12bit.

Isolation: 250V rms.

### Terminals

Pluggable screw terminals

### Data output (Option)

RS232 and RS485 (4 wire), 8 bit, no Parity, 1 Start, 1 Stop, 600-19200 bd, Addresses 00 - 31.

Isolation 250V RMS.

### Set Points

Two Set Points Relays 5A-230VAC or two NPN open collector transistors 60V/100mA, with programmable hystereze.

### Excitation

Adjustable 5-24V/40mA.

Instruments with DC Supply can optionally have non isolated excitation adjustable from 2V to max. used supply voltage.

### Supply

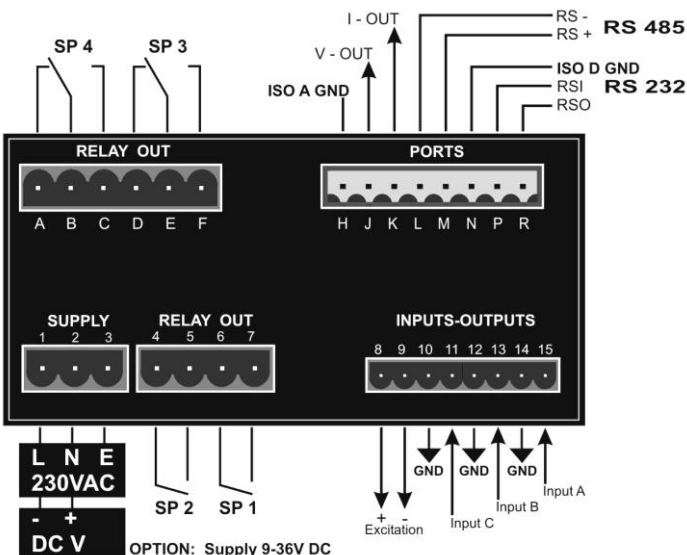
115/230V  $\pm 10\%$ , 50-60Hz, 9VA.

Option: 24VDC or 9 - 36 V DC, 4 W.

### Cabinet with IP65 protection from the front

DIN 48x96mm, 100mm depth behind the front.

Panel cut-out 45x90 mm.



Standard instrument without options contain two Set Point Relays SP1 and SP2, Supply 230VAC or 115VAC and adjustable Excitation 5-24V.

### OPTIONS

- \* SP3 and SP4 Set Point Relays
- \* Analogue Outputs 0/4-20mA and  $0... \pm 10V$
- \* Serial Data Ports RS232 and RS485
- \* Supply 9-36VDC
- \* Customized Software