



Multiranger Digital Tachometers

**DS48 / DS96
DS96-S1/DS96-S2**

Multifunction panel mounting instruments designed for digital measurement of pulse related parameters

- Fully user programmable with hardware selection of functions
- Fully user autoranging measurement and independent resolution selection
- 5 digit red LED display, range 0.001 to 99999
- 5 digit scaling and additional 5 decade input pulse divider
- Timebase unaffected by scaling or display resolution values
- Wide input frequency range 0.001 to 200Khz
- Sensor power available for 5V @ 100mA and 12V DC @ 50mA devices
- Versatile mains power unit 240/220/120/110 V AC with DC options

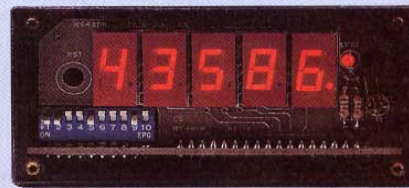


- Very wide applications with one instrument
- Easy on-site set up programming without power on
- Accuracy and high resolution even at low pulse rates
- Choice of display resolution, independent from measurement

- Display reading fully programmable to match wide input pulse rate
- Versatile sensor inputs for most industrial sensing devices
- Alarm/trip options for control applications



Rear View



Behind front panel

Shaft Speed Measurement



MOTORS, PUMPS
COMPRESSORS,
CENTRIFUGES, GEARBOXES,
DIESEL ENGINES, TEST RIGS
PRESSES, FANS, VARIABLE
SPEED DRIVES.

Counting and Totalising



PRODUCTION TOTALS,
TOTAL MATERIAL AND
LIQUID FLOW, TOTAL
DISTANCE, QUANTITY
MONITORING.

Linear Rate Measurement



PAPER, TEXTILES, PLASTICS
MACHINERY MONITORING
PACKAGING, BOTTLING,
CANNING, FOOD PROCESSING
LINES, MATERIALS
CONVEYING,
EXTRUDERS, HAULOFFS.

Accumulative Time



AVERAGE PRODUCTION
RATE AVERAGE TIME OF
TOTAL EVENTS.

Linear Rate Measurement



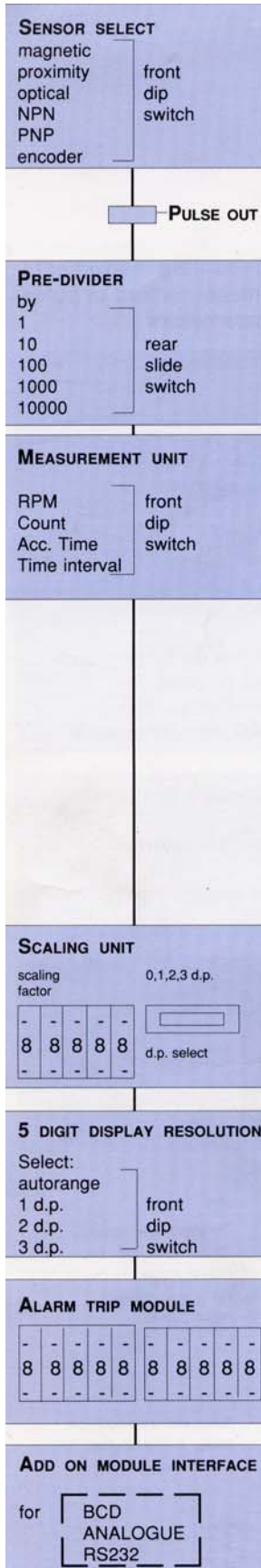
LIQUID FLOW RATE, BULK
CONVEYOR RATE,
AGGREGATES, CEMENT
MANUFACTURE,
FOOD MANUFACTURE.

Accumulative Time



STAMPING PRESS RATE,
BAKING TIME,
CONTINUOUS FREEZER
RATE, RECIPROCATING
MACHINE RATE.





Sensor Select

Magnetic pickups 1—30V or similar high impedance pulses
 Proximity sensors 3 wire 10 - 30 vdc types NPN or PNP
 Optical sensors as above plus 5 v types
 Hall effect sensor as above
 Shaft encoder 5 VDC 100Ma or 12VDC 50ma types
 Flow meters with pulse o/p 5—30 v

Pulse Output or Analogue Output

5V pulse output repeating input pulse for other instruments or remote control (not divided or scaled) or optional analogue output

Input Pulse Pre-divider

To slow down incoming pulses in 5 decade steps. Provides averaging over a number of pulses. Reduces high frequency input rates. The display is calibrated in the scaling module

Measurement Unit

Rate Mode (RPM)

Operates in autorange mode for maximum resolution. Displayed resolution is set separately as required by the application. (See display resolution section) Displayed measuring range is 0.001 - 99999 units per minute. Units/hour/sec measured by using the scaling option and or divider (See scaling unit)

Counting/Totalising Mode

8 digit count capacity with 5 digit display., either direct input or scaled to engineering units with the scaling unit. Counter operates as a "thousands of counts" totaliser, counts in excess of 5 digits "overflow" automatically.

Accumulative Time Mode

Simultaneous with count mode. Measure total time for displayed count. Can be displayed by linking rear terminals. Gives total time of count from which average rate can be calculated.

Cycle Time Mode

Allows measurement of cyclic rate of machinery in terms of seconds per revolution or event, or single shot timing between two pulses.

Reciprocal Rate

In the cycle time mode, time units can be changed to minutes or hours using the scaling module, provided the input pulse rate is within the range of the instrument.

Scaling Unit

Virtually any engineering unit can be programmed between input pulse value and required displayed value via the 5 digit arithmetic scaler in the range 0.001—99999

Independent Display Resolution

The user can select autorange (0.001 max) or preset between 0 and 3 decimal points. This has no effect on other programmed settings or update time. True resolution is displayed, not an artificial decimal point.

Alarm Trip Module

Four alarm versions are available which provide either single or dual independent digital trip levels. These can be set to over/under preset alarm with inhibit control, choice of trip resolution and and time out adjustment.

Other Modules and Specials Available on Request

Large Display Models—60 & 100 mm Digits

Multiranger Technical Specification

Display 5 digit red LED 11mm (0.4") floating DP
 Decimal Point Fixed or autoranging
 Resolution Max 0.001 depending on function

Display Ranges

Rate Mode Direct inpput 0.001-99999 pulses/min
 Display update Max 0.8 seconds above 75 ppm
 Time between pulse below 75ppm (pulse rate after divider unit)
 Accuracy Typical <0.01% +/- 1 digit
 Cycle time mode 0.01 -99999 secs between pulses
 Count mode 5 digit display and 8 digit capacity
 Sensor indicator Red LED glows with valid input
 Input frequency 0.001hz—200khz (withdivider)
 Power supply Mains—AC 115/230 50/6 Hz
 DC (optional) 12v DC
 Sensor supply 5v DC @ 100mA or 12v Dc @ 50mA
 Enclosure DIN 48 x 96 x 140mm moulded case
 Panel cut-out 425 x 91.5 mm
 Terminations 11 way screw type connector

Alarm Unit Specification

Output relays 2 x SPCO 2 Amp non-inductive @240 VAC or 30V DC
 Inhibit delay Adjustable from 1 - 9 seconds
 (Under limit) External control via rear terminals
 Trip modes Individual over/under limit control
 Trip Indicators Individual red LED lights
 Time out trip Stop motion over-ride option
 Enclosure DIN 96 x 96 x 140mm moulded case
 Panel cutout 91.5 x 91.5

Connection

Common Terminals

- | | |
|----|-----------|
| 1 | L |
| 2 | NC |
| 3 | N |
| 4 | + 12v |
| 5 | + 5v |
| 6 | Acc Time |
| 7 | Pulse O/P |
| 8 | Prox I/P |
| 9 | Mag PU |
| 10 | 0V |
| 11 | Reset |

Alarm Terminations

- | | |
|---------------------|------------------|
| Trip Level 1 | |
| 12 | Normally closed |
| 13 | Common |
| 14 | Normally open |
| Trip Level 2 | |
| 15 | Normally closed |
| 16 | Common |
| 17 | Normally open |
| 18 | Time out control |
| 19 | Inhibit control |
| 20 | Common 0v |

Order Codes

DS4810000 115/230VAC Multiranger without alarms
 DS4820000 12v DC Multiranger without alarms
 DS9610010 115/230VAC Multiranger with 1 alarm
 DS9620010 12v DC Multiranger with 1 alarm
 DS9610020 115/230VAC Multiranger with 2 alarms
 DS9620020 12v DC Multiranger with 2 alarms
 PSU24 24VDC converter for 12 VDC version

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Manufacturers and Distributors of Electronic Control Components and Systems

