The Eurotherm Chessell model 392 provides the latest recorder technology with a proven servo motor drive system. Its quality construction and ease-of-use provide reliable, trouble free operation. Precise attention to design, manufacturing and quality control ensures that model 392 recorders work 'first time'.

The design and solid construction of the model 392 makes maintenance, field upgrade and the addition of features, fast, easy and affordable. The 392 is available in an IP65 rating to withstand rugged environments.

Easy to set up
The recorder functions can be configured quickly and easily using the six front panel keys to follow the plain English prompts which appear on the display.

Operator functions are separated from configurable items by password protection.

Advanced features
Custom linearization for non-linear inputs such as pH and conductivity, permits the use of standard linear charts, eliminating the need for expensive non-linear or overprinted charts. Microprocessor power provides automatic calculation, display and recording of derived variables such as mass flow and relative humidity, as well as non-standard user-entered calculations.

Display data
Channel information is displayed with measured value, channel number, engineering units, 16-character (max.) tag (descriptor) and alarm information.

Integral controllers
The Model 392 offers two PID controllers with features such as cascade, ratio/bias, feedforward and internal setpoint generation. Dedicated auto/manual and remote/local setpoint keypads allow the user to switch easily from one control function to another.

The controllers provide simultaneous indication of setpoint, process variable and output status.

Totalizers
The Model 392 provides up to four integrating/totalizing channels, with nine-digit resolution, for flow and power applications.

Totalization factors, cut-off and reset on/off are entered using the keyboard, as a part of totalizer configuration. An option totalizer output relay can be used, for example, to drive electro-mechanical counters.

Alarms
Up to four alarms per channel can be configured as deviation, rate-of-change or absolute high/low.

Communications
An optional RS422 serial link provides communications with computer and/or data acquisition systems, and allows the recorder to be programmed from a control (host) computer.
**TECHNICAL SPECIFICATION (Input board)**

### General

- **Number of inputs**: 1, 2, 3 or 4
- **Input types**: dc Volts, dc millivolts, dc milliamperes (with shunt), Thermocouple, 2/3-wire RTD
- **Input type mix**: Freely configurable.
- **Writing system**: Blue, red, green and black disposable markers giving approximately 500 meters of trace each.
- **Chart type**: Circular, 100mm calibrated chart width
- **Chart speeds**: 1 to 4096 hours/revolution
- **User interface**: Integral 40-character display and keyboard
- **Termination**: Terminal block

### Physical

- **Bezel size**: 360mm H x 380mm (When viewed from the front, offset 5mm right with respect to cutout centerline).
- **Panel cutout dimensions (mm)**: 340.5 H x 345 W (both – 0 + 1mm)
- **Depth behind bezel rear face**: 150mm
- **Weight**: 7kg (typical)
- **Panel mounting**: + 5 to -30 degrees from vertical (+ = top overhangs)

### Power requirements

- **Line voltage**: Standard: 90 to 264V at 45 to 65Hz
- **Low voltage option**: 24V dc
- **Input current shunts**: 250Ω
- **Input voltage attenuators**: 1MΩ (100:1)
- **Totalizer**: Up to four individually assignable
- **Transmitter power supply**: Four isolated 28Vdc, 30mA supplies
- **Math functions**: Mass flow, RH, F-value, ZrO₂, +, -,, x, ÷, Average, Hi/Lo select, Hi/Lo peak, Log₁₀, x10, 3rd order polynomial.
- **Retransmission**: Up to four isolated, scaled, 1 to 5 Volt or 4 to 20mA (into 600Ω max.) outputs
- **Custom linearization**: Polynomial curve fit for 11 user-entered point pairs
- **Communications**: Single asynchronous RS422 channel with software selectable Baud rate
- **Controllers**: One or two single or dual output, 3-mode PID controllers, setpoint generators and remote/local setpoint switching
- **Event inputs**: Up to 16 contact inputs

### Environmental Performance

- **Temperature limits**
  - **Operation**: 0 to 50ºC (options can reduce maximum temp.)
  - **Storage**: -20 to +70ºC
- **Humidity limits (non-condensing)**: 10 to 90%
- **Protection Standard**: NEMA3 (IP54)
- **Waterproof**: NEMA4 (IP65)
- **Shock**: BS EN60873 and BS EN61010
- **Vibration**: (BS EN60873) 1g peak at 60Hz to 150Hz
- **Altitude (max)**: <2000m
- **Emissions**: BS EN50081-2
- **Immunity**: BS EN50082-2
- **Electrical safety (BS EN61010)**

### Performance

- **Input resolution**: 0.01% of operating gain span
- **Pen position resolution**: 0 ± 1% of chart change
- **Display accuracy**: 0.02% of operating gain span
- **Pen response**: 1 second to full scale
- **Channel update rate**: Each channel in 250msec
- **CJC rejection**: ± 0.5% from 25ºC
- **Input impedance**: >20MΩ
- **Noise rejection (48 to 62 Hz)**
  - **Common mode**: >130dB (channel to channel and channel to ground)
  - **Series mode**: >60dB

### Input specification

- **Linearizations**
  - **T/C Types**: B, C, E, J, K, L, N, R, S, T, Ni/NiMo
  - **RTD Types**: Pt₁₀₀, Cu₁₀, Ni₁₀₀, Ni₁₂₀
  - **Others**: Linear, square root, x², log, user-entered

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**Dimensions (mm)**

![Dimensions Diagram](image_url)

**INSTALLATION CATEGORY II**

The rated impulse voltage for equipment on nominal 230V mains is 2300V. POLLUTION DEGREE 2

Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation shall be expected.