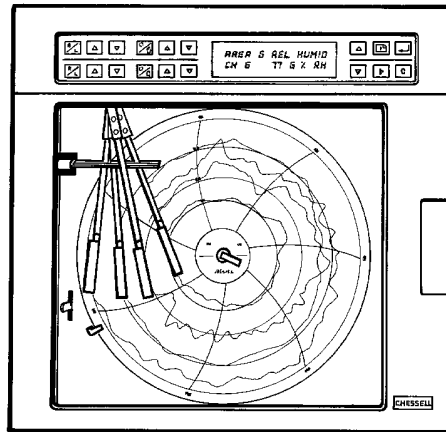


- 1 to 4 Universal input channels
- 40-character vacuum-fluorescent digital display
- 1 or 2 independent, case-mounted single or dual output PID controllers
- Simple on-site configuration using control panel
- Math functions
- 4 totalizers with 9-digit readout
- 4 alarms per channel
- Thermocouple, RTD, $x^{3/2}$, $x^{5/2}$, linear, square root, \log_{10} linearizations
- EEPROM memory for security



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 milliamps (with shunt), Thermocouple, 2/3-wire RTD Contact closure/logic low
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 + 1 mm)
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 25VA (115VA with case heater)

Environmental Performance

Temperature limits	Operation: 0 to 50°C (options can reduce maximum temp.) Storage: -20 to + 70°C
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
Electromagnetic compatibility (EMC)	Emissions: BS EN50081-2 Immunity: BS EN50082-2
Electrical safety (BS EN61010)	Installation cat. II; Pollution degree 2

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
C/JC rejection	± 0.5% from 25°C
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: Pt ₁₀₀ , Cu ₁₀₀ , Ni ₁₀₀ , Ni ₁₂₀ Others: Linear, square root, x ^{3/2} , x ^{5/2} , log, user-entered
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Voltage inputs	4mV to 5V (100V with attenuator)
Current input	Across 250Ω shunt
Event input types	Contact closure or logic low

Memory protection

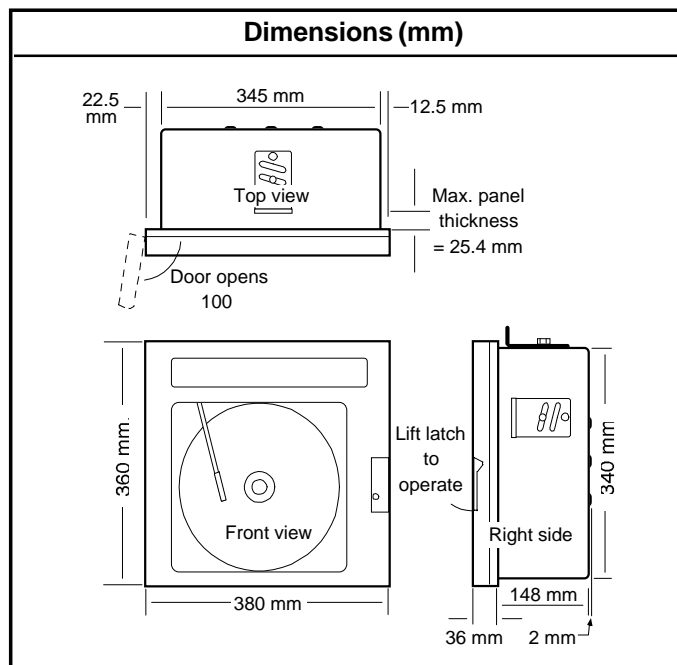
Configuration	Saved in EEPROM
Active values (e.g. totalizer)	Super cap backup for 100 hours

Alarms

Number of:	Four per input and/or derived channel
Types:	Absolute high/low, deviation, rate-of-change

Options

Wall mounting	
IP-65 case	
Output relays	Number of: Up to eight individually assignable Switching power: 30W or 37.5VA (resistive load) Maximum values: 0.3A at 125V ac, 1.0 A at 30V 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, Fvalue, ZrO ₂ , +, -, X, ÷, Average, Hi/Lo select, Hi/Lo peak, Log ₁₀ , x ¹⁰ , 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



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.