

# Proteus Series 3000

Dual Channel

High Accuracy

IP65 Front

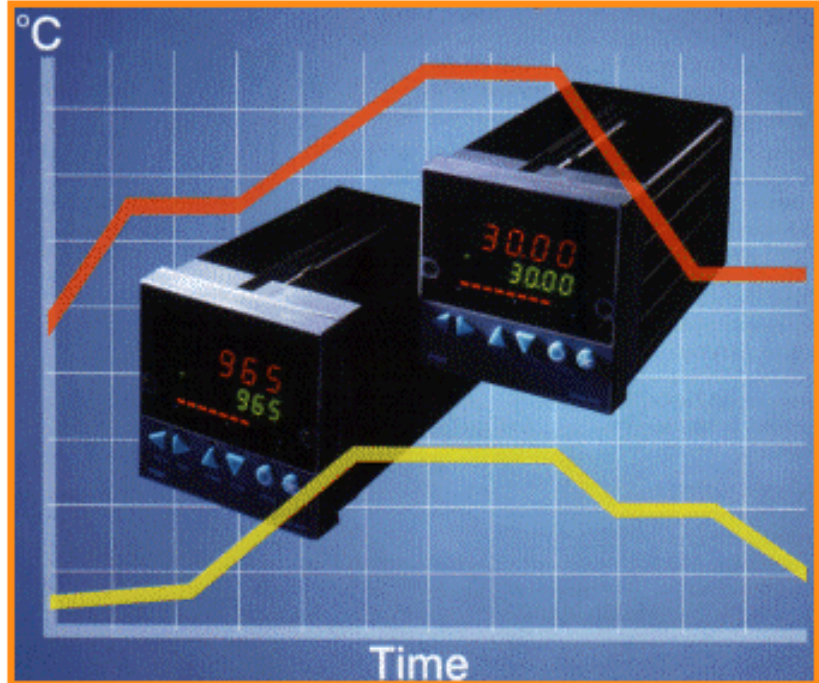
Event Relays

Terms Scheduling

Modular

Pluggable

Thermal Head Ratio



## Advanced Dual Channel Temperature Controller

### Proteus Series 3000

The Proteus 3000 Series is FGH's new top-of-the-range family of auto-tuning, communicating temperature controllers and dual batch process profilers. The IP65, 1/4 DIN plug-in 3000 Series features a dual profile model for temperature, pressure and temperature/humidity applications, terms scheduling and FGH's unique dual loop thermal head ratio control system in a single box for the first time. Occupying just 150mm depth behind the panel, P3000 instruments store and execute up to 50 profiles of 10 segments each for each of two control loops.

Serial communications to RS485 is fitted as standard and Proteus 3000 units can be mixed with S & P1000, S & P2000, P450 and ICU instruments, as the same, widely supported protocol is used throughout. All configuration and operational parameters can be accessed via serial communications for in-service data acquisition, or setting up and calibration on the bench.

- **Dual Channel** - Single or dual channel profiling and thermal-head ratio
- **High Accuracy** - High measurement accuracy of 0.2%
- **IP65 Front** - IP65 Front panel sealing
- **Event Relays** - Up to 8 user programmable Event Relays
- **Terms Scheduling** - Apply different control criteria to each profile segment
- **Modular Design** - Configure any 3000 unit from a few modules on the shelf
- **Pluggable** - Easy removal for calibration or replacement

PRODUCT INFORMATION

**FGH**

# Proteus Series 3000

Advanced technology single and dual channel controllers and profilers

Proteus 3000 Series is a family of temperature and process controllers for both single and dual channel applications. The display of measured value is by means of a bright 10mm orange LED coupled with a 7mm green display for setpoint data. Additional red, green and orange LED's provide annunciation and a 10 segment bar graph complying with the latest EN60204 recommendations.

A universal measurement system can be configured by the user to accept any common thermocouple, resistance thermometer, mV or mA style process signal. It has an overall measurement accuracy of 0.25%, 150dB, 100ppm/C span temperature coefficient and negligible zero drift. Input resolution is 2.5µV or 25mW enabling 0.1°C or °F on Type T or K thermocouples or resistance thermometers. A second analogue input for remote setpoint or additional process input accepts standard mA or Voltage signals to better than 0.1% accuracy. Optional analogue outputs for control or retransmission provide standard mA or Voltage signals to better than 0.1% accuracy.

Five I/O module slots provide total flexibility to the user, Up to three analogue output modules, one auxiliary analogue input module or 5 digital relay/logic modules can be accommodated within the instrument. Further digital outputs are catered for utilising an external 8 output relay or logic module. These enable a variety of functions including time proportional control, 4-20mA single loop or heat/cool control, motor valve with optional slidewire feedback, two alarm relays, retransmission of process, setpoint and/or output remotesetpoint or second process input.

A universal Power supply accepts 85-265V 50-60Hz mains or optionally 22-52 Volts DC. Two digital inputs are provided as standard for process interlocks. The ¼ DIN plug-in housing (96mm x 96mm) provides IP65 front panel protection and occupies 150mm to the rear of the panel.

The standard profiler version provides for either one or two setpoint channels each having 10 profiles of 25 segments. Other configurations are available for up to 50 profiles and/or 50 segments with a maximum of 500 segments per channel. Standard features include a 100 hour delay start timer and 1000 cycle repeat counter. Programmes may be started or selected via the front panel or by remote inputs. Up to 8 event relays may be programmed per segment together with 5 different Hold conditions.

Standard control options are PID (3 term) and FGH's unique Thermal Head Ratio Control. A tuning algorithm provides 3 levels of adjustment to give either a critically damped or zero overshoot result. The standard instrument has 4 auxiliary selectable PID sets. These may be programmed to setpoint thresholds or segment levels.

RS422/RS485 serial communications options are available and all versions are compatible with other FGH products including Proteus 1000, Proteus 2000, RDA and ICU. This allows SCADA software such as Data Manager to monitor and control products on the same communication network.

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## Simplified order code

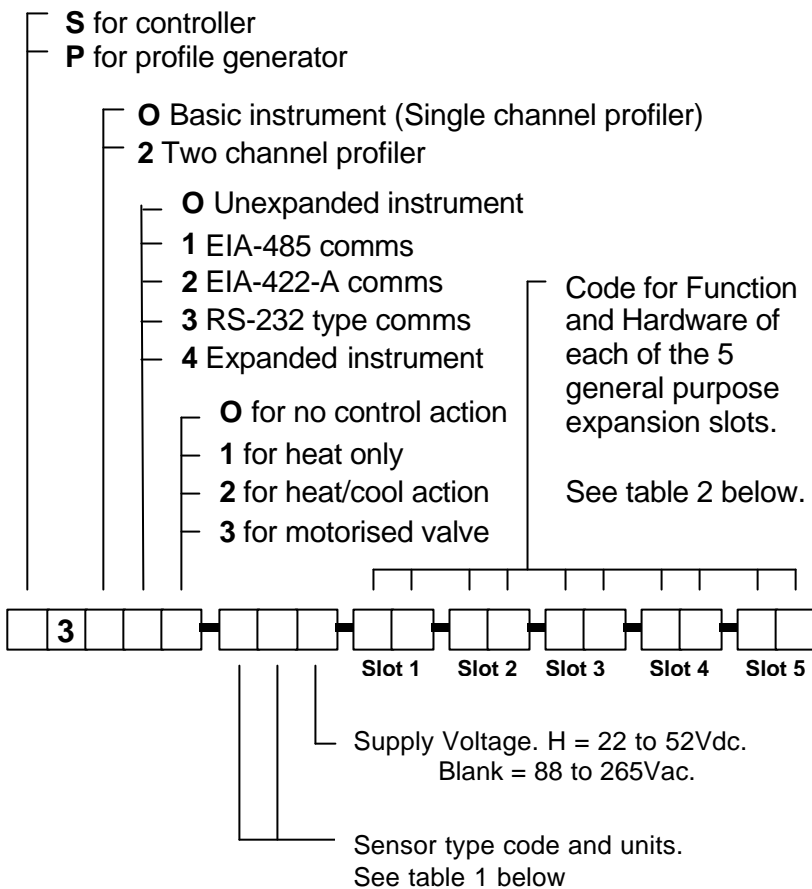


TABLE 1 - Two digit input code

Type		Code °C	Code °F
Type S	(Pt-10% Rh / Pt)	00	17
Type R	(Pt-13% Rh / Pt)	01	18
Type J	(Fe / Cu-Ni)	02	19
Type K	(Ni-Cr / Ni-Al)	03	20
Type T	(Cu / Cu-Ni)	04	21
Type E	(Ni-Cr / Cu-Ni)	05	22
Type B	(Pt-30% Rh / Pt-6% Rh)	06	23
Type N	(Ni-Cr-Si / Ni-Si)	07	24
Type W	(W / W-26% Re)	08	25
Type W3	(W-3% Re / W-26% Re)	09	26
Type W5	(W-5% Re / W-26% Re)	10	27
Type NM	(Ni / Ni-18% Mo)	11	28
Type L	(Fe / Cu-Ni)	12	29
K10	(Type K in 1/10°C)	13	30
T10	(Type K in 1/10 °C)	14	31
RT10	(PT100) in 1/10 °C	15	32
RT	(PT100)	16	33

TABLE 2 - Slot Function and Hardware codes

0	for not fitted	0	for not fitted
A	for heat t.p. output	1	for a form C relay output
B	for heat analogue output	2	for logic output (SSR driver)
C	for cool t.p. output	3	for 0-10V analogue output
D	for cool analogue output	4	for 0-20mA analogue output
E	for mv raise output	5	for 4-20mA analogue output
F	for mv lower output	6	for +/- 1V analogue input
G	for alarm 1 output	7	for +/- 10V analogue input
H	for alarm 2 output		
I	for retransmission output	8	for unpowered slidewire input
K	for remote setpoint input		
L	for mv slidewire input		
M	for external event driver		
N	for internal event		
R	for remote profile select input		