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PC1600 SERIES

# PC1600 Series Programmable Controller

**The PC1600 Series are "tough, smart and very, very flexible" multi-function, multi-purpose Programmable Controllers with an extensive range of I/O, communications ports and data storage and manipulation capabilities.**

## PRODUCT OVERVIEW

- 32 MB FLASH memory for data and event logging
- Real Time Clock
- Battery backed RAM
- 16 x Digital Inputs
- 6 x 12-bit A/D inputs
- 3 x Universal Inputs (configurable as digital or analogue inputs)
- 18 x FET Digital Outputs
- Ethernet (10/100 Mbps)
- RS232 and RS485 serial communications ports
- 4 line x 20 character Liquid Crystal Display with keypad on the PC1620 model.

The PC1600 Series have been designed to operate in tough industrial environments, and are ideal for environmental monitoring, SCADA systems, energy management and control, data-logging, distributed control systems and transportation monitoring and control applications.

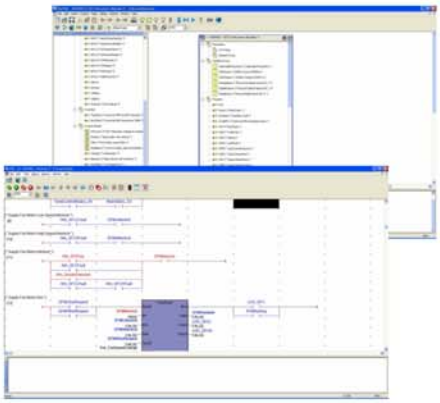
Due to the low profile design, the PC1600 Series have excellent shock and vibration performance capabilities and are ideally suited to the harsh environments where conventional rack mounted controllers can fail. The PC1600 Series have been designed to the tough EN50155 standard for electronic equipment used in rolling stock.

The PC1600 series are perfect for data-logging and file handling applications as they have inbuilt 32 Mb FLASH memory for local data and file storage.

With extensive software features such as FTP, DHCP and function blocks for file reading and writing the PC1600 Series are truly "tough, smart and very, very flexible".

## PROGRAMMABILITY

The PC1600 can execute all five of the IEC61131-3 programming languages via the ISaGRAF V5 Workbench (available separately).



The IEC61131-3 languages include:

- Sequential Function Chart (SFC)
- Function Block Diagram (FBD)
- Ladder Diagram (LD)
- Structured Text (ST)
- Instruction List (IL)

## MODELS INCLUDED IN THE PC1600 SERIES

- PC1600: Board only
- PC1610: Enclosure (Anodised Aluminium)
- PC1620: Enclosed with LCD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ISO 9001:2000
OHSAS 18001:2007
ISO 14001:2004
AS 4801:2001

**SPECIFICATION**

# PC1600 Series Programmable Controllers

| Description | PC1600 Board only | PC1610 Enclosure | PC1620 Enclosure and LCD |
|---|---|---|---|
| Input Voltage | +18 to +32 VDC (Nominal 24 VDC at 250mA) | | |
| Environmental | Operational -20ºC to +70ºC, 5% to 95% Relative Humidity | | |
| Processor Speed | 44.2 MHz | | |
| SRAM Memory | 512 kB program and 512 kB data | | |
| FLASH Memory | 512 kB | | |
| Serial FLASH Memory | 32 MB NAND | | |
| Backup Battery | Data RAM and RTC battery backed via 950mAH battery | | |
| Real Time Clock | Yes. 1 second resolution | | |
| Watchdog | CPU hardware watchdog | | |
| Digital Inputs | Sixteen (16) - Configurable in banks of eight as pull up to 24V or pull down to 0V | | |
| Digital Outputs | Eighteen (18) - 35V Low-Side N-Channel MOSFET driver output<br>Each output can sink 1A at 24VDC over the temperature range -20ºC to +70ºC | | |
| Analogue Inputs | Six (6) - Resolution 12-bit. Each channel individually configurable as:<br>0 to +10 VDC or 0 – 20 mA or NTC Thermistor<br>(optimised for 10K ohm resistance at 25ºC ambient) | | |
| Universal Inputs | Three (3) – Resolution 12 bit. Each channel individually configurable as:<br>Digital input as per the above specification or<br>Analogue input configurable as ±10 VDC, 0 to +10 VDC, NTC Thermistor or<br>0 – 20mA (via an external resistor) | | |
| Ethernet | One (1) - Ethernet port 10/100 Mbps via RJ-45 socket with Link and Activity LEDs | | |
| Serial Communications | Two (2) x 5-wire RS-232 ports via DB-9 connectors<br>One (1) x 2-wire RS-485 port via plug/socket connector | | |
| LCD | N/A | N/A | Four (4) lines of twenty (20) characters with LED backlight (with on/off control) |
| Keypad | N/A | N/A | Seven (7) keys (left, right, up, down, OK, page up, page down) |
| LED | N/A | N/A | Four (4) – programmable LEDs |
| Protocol Support | Modbus TCP/IP (Master and Slave) | | |
| Enclosure Material | Anodised Aluminium Plate | Anodised Aluminium Enclosure | Anodised Aluminium Enclosure |
| Enclosure Size | 200mm x 147mm x 1.6mm | 200mm x 147mm x 34mm | 200mm x 147mm x 47mm |
| Terminations | Plug / socket cage clamp connectors - V0 flammability rating - Cage clamping range maximum 1.5mm$^2$ machine tool (MTW) | | |
| Compliance | EN50155:2007 – Compliance with Visual Inspection, Performance Test, Cooling Test, Dry Test, Supply Related Surge and Transient Susceptibility Test, Transient Burst Susceptibility Test and Vibration, Shock and Bump Test. | | |
| EMC Testing | Fast Electrical Transient Burst. All Digital I/Os, Analogue I/Os and Communications Ports comply with IEC1000-4-4, Level 4 Criteria A, 2 kV voltage peak 5 kHz repetition rate (as per EN50155 Section 10.2.7) | | |
| I/O Expansion | Analogue and digital I/O expansion modules connected via the RS485 port using Modbus RTU protocol. Refer to the IO.Teso Expansion Modules | | |
| Programming | ISaGRAF V5 - IEC61131-3 (SFC, FBD, LD, ST, IL, FC) or Dynamic C | | |
| Part Number | 070-0107 | 070-0108 | 070-0109 |