Life Is On | Eurotherm by Schneider Electric

# Easy to Use and Versatile Data Recording Solutions

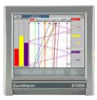
## 6100A & 6180A Paperless Graphic Recorders



## Product at a Glance

The 6000 Series offer world leading input accuracy with a 125ms total sample rate for up to 48 input channels. Input channels are freely configurable to suit your process requirements. Each instrument has an intuitive, touch screen display to enable operators to clearly view process data in varying formats. All have onboard Flash data storage capability, Ethernet communication and a choice of removable media. Data is stored in a tamper-resistant binary format that can be used for long term records of your process. The 6000 Series is truly designed for todays networked world and can be accessed via a Local Area Network, dial-up connection, Intranet or Internet.

- Color touchscreen display
- USB “plug & play”
- Up to 48 universal Inputs
- Up to 96 MB non-volatile flash memory
- 125ms parallel sampling
- Compact Flash card
- Modbus RTU
- Ethernet TCP/IP
- Web server
- EtherNet/IP server
- Multi-language support (French, Dutch, German, Italian, Japanese, Korean, Portuguese, Russian and Simplified Chinese)

| Available features |  |  |
|---|---|---|
| | **6100A** | **6180A** |
| Display | 5.5” 1/4 VGA | 12.1” XGA |
| Channels | 18 | 48 |
| Relays | 12 | 27 |
| Events inputs | 24 (6 per option card) | |
| Groups | 6 standard (12 options) | |
| Auditor features | Auditor or audit trail | |
| Analogue ouputs | Output 8 (2 per card) | |
| Virtual channels* | 36, 96, 128 | |
| Timers | Fitted as standard | |
| Alarms | 4 per channel | |
| Batch | Optional | |
| Bridge-remote viewing software | Lite as standard (Full optional) | |
| Screen builder | 24 (optional) | |
| Security | Unlimited unique user names with configurable access permissions and passwords | |
| Configuration software | Standard | |
| Reviews/Quickchart Lite software | Standard | |
| Standard views | Vertical and horizontal trending<br>Vertical and horizontal bar graphs<br>Circular trend and numeric values | |

* Virtual channels can be configured as maths, totalisers, counters or comms

Imagine Absolute Data Records Forever

## Data Logging and Archiving

The 6000 Series recorders have internal Flash memory for high integrity data storage. They are also able to accept various removable media types (Compact Flash or USB memory stick). Data stored within the internal memory can be archived to the removable media on demand or at preset intervals. The 6000 Series will give an indication of how long its internal memory and that of the removable media installed will last according to the configuration of the recorder.

The 6000 Series can be configured to archive to the removable media and/or over Ethernet. Archiving files over Ethernet effectively gives infinite archiving capacity.

Approximate duration for continuous recording of one group of six channels, high compression:

| Archive Media | Sample Rate | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0.125s | 0.5s | 1s | 5s | 10s | 30s | 60s |
| 96Mb Internal Flash (approx. 12 million samples) | 8.49 days | 33.9 days | 67.8 days | 339 days | 1.85 yrs | 5.5 yrs | 11.1 yrs |
| 256Mb CF Card or USB memory stick (approx, 32 million samples) | 22.6 days | 90.6 days | 181 days | 2.4 yrs | 4.9 yrs | 14.8 yrs | 20 yrs |
| 8Gb CF Card or USB memory stick (approx. 1000 million samples) | 1.9 yrs | 7.8 ys | 15.2 yrs | 76.8 yrs | 152 yrs | 464 yrs | 928 yrs |
| Ethernet (FTP Server) | Infinite | | | | | | |

## Time Synchronization (SNTP)

The 6000 Series support Simple Network Time Protocol which, when enabled, updates the instrument time every 15 minutes from the configured SNTP server. The unit can also act as a Unicast SNTP server on the network, allowing client instruments to synchronize with the 6000 Series to a resolution of one millisecond.

## Batch Recording

Up to ten user-defined fields can be used to enter batch specific data.

| Field Descriptor | Operator Entered Batch Information |
|---|---|
| up to 20 characters | up to 60 characters |

The user can choose to log any number of the given fields on start and/or stop of a batch. The information will appear on the chart as a message and cannot be separated from the process data to which it relates.

## Auditor Features

### Auditor

Designed to aid compliance to FDA regulation 21 CFR Part 11 for Electronic Records and Signatures, this software option provides the 6000 Series with additional access controls such as password ageing, electronic signatures and time stamped audit trail.

### Audit Trail

A sub-set of the Auditor which provides the 6000 series with a time stamped audit trail. It does not include password ageing and electronic signatures.

### Mircosoft® Active Directory® Directory Service

A utility intended for User Access Administration of PCs. It is a tool used by the IT administrators to manage user access across the company wide network. It allows users to be given access according to their functions by allocating them to a group with defined privileges. It also includes the necessary features such as password expiry, auto-logout, minimum length password, etc. It allows the users to manage their password from any node on the system.

## Modbus Master

Allows users to view data from multiple instruments connected either by a local Network connection using Modbus TCP, or a Serial connection using Modbus RTU.

## The 6000 Series Recorders

ASCII printer output (reports)Fitted as standard the ASCII text printer option provides the 6000 Series with the ability to generate up to 10 simple reports that can be directed to a Serial ASCII text printer. Reports, triggered by an event/job can be configured to contain parameters such as time and date, batch names, process values and user defined messages.

## Dynamic Host Configuration Protocol (DHCP)

Dynamic Host Configuration Protocol, the successor to BootP, allows a 6000 Series host to obtain Network parameters, such as IP address, Subnet Mask, default gateway and DNS server address dynamically. The implementation of DHCP on the 6000 Series significantly reduces the overhead for maintaining a network of instrumentation.

# Specification

## Recorder

### Environmental performance

| | | |
|---|---|---|
| Temperature limits | Operation: | 0 to +50° C |
| Storage: | | –20 to 60° C |
| Humidity limits | Operation: | 5% to 80% RH |
| | Storage: | 5% to 90% RH |
| Protection Bezel and display: | | IP66 |
| Sleeve: | | IP20 |
| 6100A Portable case option: | | IP21 |
| Shock: | | BS EN61010 |
| Vibration (10 to 150Hz): | | BSEN60873, Section 9,18 |
| Altitude: | | <2000 meters |

### Approvals

| | |
|---|---|
| Electromagnetic compatibility: | CE, cUL (EMC) |
| UL file number: | e57766 |
| Emissions and immunity: | BS EN61326 |

### Electrical safety

| | |
|---|---|
| (BS EN61010): | Installation cat. II; Pollution degree 2 |

**INSTALLATION CATEGORY II**
The rate impulse voltage for equipment on nominal 230V mains is 2500V.

**POLLUTION DEGREE 2**
Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation shall be expected.

### Physical

| | | |
|---|---|---|
| Panel mounting: | | DIN43700 |
| Panel mounting angle: | | ±45° |
| 6100A | Bezel size: | 144 x 144 mm |
| | Panel cutout dimensions: | 138 x 138 mm (both –0/+1 mm) |
| | Depth behind bezel rear face: | 246.5 mm (284 LTC) |
| | Weight: | 3 kg max. (5 kg if fitted in portable case) |
| 6180A | Bezel size: | 292 x 292 mm |
| | Panel cutout dimensions: | 281 x 281 mm (both –0/+1 mm) |
| | Depth behind bezel rear face: | 261 mm |
| | Weight: | 7 kg max. |

### Operator interface

| | | |
|---|---|---|
| Type: | | Color TFT LCD with cold cathode backlight, fitted with resistive, analog, Touch-Panel |
| Size and resolution | | |
| | Model 6100A: | 1/4VGA (320 x 240 pixels) 5.5” |
| | Model 6180A: | XGA (1024 x 768 pixels) 12.1” |

### Power requirements

| | | |
|---|---|---|
| Supply voltage | Standard: | 100 to 230V ac ±15%; 47 to 63Hz or 110 to 370 V dc |
| Power (Max): | | 60 VA (Inrush current 36 A) |
| Fuse type: | | None |
| Interrupt protection | Standard: | Holdup >200 msec, at 240V ac, with full load |

### Back-up battery

| | |
|---|---|
| Type: | Poly-carbonmonofluoride/lithium (BR2330) Part No. PA261095 |
| Support time (RTC): | 1 year min. with recorder unpowered |
| Replacement period: | 3 years |
| Stored data: | Time; date; values for totalisers, counters and timers; batch data; Fvalue, Rolling average, Stopwatch etc. |

### Ethernet communications

| | |
|---|---|
| Type: | 10/100baseT Ethernet. (IEEE802.3) |
| Protocols: | TCP/IP, FTP, DHCP, BOOTP, SNTP, Modbus, SMTP, ICMP, EtherNet/IP server |
| Cable Type: | CAT5 |
| Maximum length: | 100 meters |
| Termination: | RJ45 |

## Serial Communications Option

| | |
|---|---|
| No of ports: | 2 |
| Protocol: | ASCII (typical applications: Input of ASCII string inputs from Barcode readers, Credit card readers etc.)<br>ASCII printer support<br>Modbus RTU Master and Slave Isolation (dc to 65Hz) |
| BS EN61010): | Installation category II;<br>Pollution degree 2 |
| Terminals to ground: | 50V RMS or dc (basic insulation) |
| Transmission standard: | EIA232 or EIA485 (software selectable) |

## Input Board

### General

| | |
|---|---|
| Input types: | dc Volts, dc millivolts,<br>dc milliamps (with shunt),<br>Thermocouple, 2/3-wire RTD<br>Contact closure (not Channels 1, 7, 13, 19, 25, 31, 37, 43) >60 ms |
| Input type mix: | Freely configurable |
| Maximum number of inputs: | 6 per board |
| A/D conversion method: | >16 bits, 2nd order delta sigma |
| Input ranges: | See Table1 and Table 2 below |
| Termination: | Edge connector / terminal block |
| Noise rejection (48 to 62Hz): | Common mode: >140dB (channel to channel and channel to ground) |
| Series mode: | >60 dB |
| Max. common mode voltage: | 250 Volts continuous |
| Max. series mode voltage: | 45 mV at lowest range;<br>23.74 Volts peak at highest range |
| Isolation | |
| Channel to channel: | 300V RMS or dc (double insulation) |
| Channel to common electronics: | 300V RMS or dc (double insulation) |
| Channel to ground: | 300V RMS or dc (basic insulation) |
| Dielectric strength (BS EN61010) | (1 minute type tests) |
| Channel to channel: | 2500V ac |
| Channel to ground: | 1500V ac |
| Insulation resistance: | >10 MΩ at 500V dc |
| Input impedance: | 38 mV, 150 mV, 1V ranges: >10 MΩ;<br>20V range: 65.3 kΩ |
| Over voltage protection: | 50 Volts peak (150V with attenuator) |
| Open circuit detection: | ± 57 nA max. |
| Recognition time: | 500 msec |
| Minimum break resistance: | 10 MΩ |

Table 1 Voltage ranges — accuracy and resolution

| Low Range | High Range | Resolution | Typical error (instrument at 20° C) Range | Maximum error (instrument at 20° C) Range | Worst case temp Performance Input per °C |
|---|---|---|---|---|---|
| -38 mV | 38 mV | 1.4 µV | 0.013% I/P + 0.031% | 0.030% I/P + 0.052% | 25 ppm |
| -150 mV | 150 mV | 5.5 µV | 0.013% I/P + 0.028% | 0.029% I/P + 0.039% | 25 ppm |
| -1 V | 1 V | 37 µV | 0.013% I/P + 0.024% | 0.029% I/P + 0.029% | 25 ppm |
| -20 V | 20 V | 720 µV | 0.075% I/P + 0.027% | 0.393% I/P + 0.033% | 388 ppm |

Table 2 Resistance ranges — accuracy and resolution

| Low Range | High Range | Resolution | Typical error (instrument at 20° C) Range | Maximum error (instrument at 20° C) Range | Worst case temp Performance Input per °C |
|---|---|---|---|---|---|
| 0 Ω | 150 Ω | 5 mΩ | 0.027% I/P + 0.034% | 0.037% I/P + 0.077% | 30 ppm |
| 0 Ω | 600 Ω | 22 mΩ | 0.027% I/P + 0.035% | 0.037% I/P + 0.057% | 30 ppm |
| 0 Ω | 5 KΩ | 148 mΩ | 0.030% I/P + 0.034% | 0.040% I/P + 0.041% | 30 ppm |

### Update/archive rates

| | |
|---|---|
| Input/Relay-output sample rate: | 8Hz |
| Trend update: | 8Hz maximum |
| Archive sample-value: | Latest value at archive time |
| Display value: | Latest value at display update time (1Hz) |

### DC Input ranges

| | |
|---|---|
| Shunt: | Externally mounted resistor modules |
| Additional error due to shunt: | 0.1% of input |
| Additional error due to attenuator: | 0.2% of input |
| Performance: | See Table 1 |

### Thermocouple data

| | |
|---|---|
| Temperature scale: | ITS 90 |
| Bias current: | 0.05 nA |
| Cold junction types: | Off, internal, external, remote |
| CJ error: | 1°C max with inst. at 25°C |
| CJ rejection ratio: | 50:1 minimum |
| Upscale/downscale drive | High, low or none selectable for each thermocouple channel |
| Additional error: | 0.01°C (typ.) if high or low selected |
| Types and ranges: | See Table 3 |

Table 3 Thermocouple types and ranges

| T/C Type | Overall range (° C) | Standard | Max linearization error |
|---|---|---|---|
| B | 0 to +1820 | IEC 584.1 | 0 to 400° C=1.7° C<br>400 to1820° C=0.03° C |
| C | 0 to +2300 | Hoskins | 0.12° C |
| D | 0 to +2495 | Hoskins | 0.08° C |
| E | –270 to +1000 | IEC 584.1 | 0.03° C |
| G2 | 0 to +2315 | Hoskins | 0.07° C |
| J | –210 to +1200 | IEC 584.1 | 0.02° C |
| K | –270 to +1372 | IEC 584.1 | 0.04° C |
| L | –200 to +900 | DIN43710:1985 (To IPTS68) | 0.02° C |
| N | –270 to +1300 | IEC 584.1 | 0.04° C |
| R | –50 to +1768 | IEC 584.1 | 0.04° C |
| S | –50 to +1768 | IEC 584.1 | 0.04° C |
| T | –270 to +400 | IEC 584.1 | 0.02° C |
| U | –200 to +600 | DIN43710:1985 | 0.08° C |
| NiMo/NiCo | –50 to +1410 | ASTM E1751-95 | 0.06° C |
| Ni/NiMo | 0 to +1406 | Ipsen | 0.14° C |
| Platinel | 0 to +1370 | Engelhard | 0.02° C |
| Pt20%Rh/ Pt40%Rh | 0 to +1888 | ASTM E1751-95 | 0.07° C |

## Resistance Inputs

| | |
|---|---|
| Ranges (including lead resistance): | 0 to 150 Ω, 0 to 600 Ω, 0 to 5 kΩ |
| Influence of lead resistance Error: | Negligible |
| Mismatch: | 1 Ω/Ω |
| Temperature scale: | ITS90 |
| Accuracy and resolution: | See Table 2 |
| RTD types and ranges: | See Table 4 |

Table 4 RTD types and ranges

| RDT Type | Overall range (° C) | Standard | Max linearization error |
|---|---|---|---|
| Cu10 | –20 to +400 | General Electric Co. | 0.02° C |
| Cu53 | –70 to ± 200 | RC21-4-1966 | <0.01° C |
| JPT100 | –220 to +630 | JIS C1604:1989 | 0.01° C |
| Ni100 | –60 to +250 | DIN43760:1987 | 0.01° C |
| Ni120 | –50 to +170 | DIN43760:1987 | 0.01° C |
| Pt100 | –200 to +850 | IEC 751 | 0.01° C |
| Pt100A | –200 to +600 | Eurotherm Recorders SA | 0.09° C |
| Pt1000 | –200 to +850 | IEC 751 | 0.01° C |

## Analogue output board

### General

| | |
|---|---|
| Max number of OP boards | Four |
| Number of OPs per board | Two |
| Output ranges | |
| Voltage: | 0 to 10V (source 5mA max.) |
| Current: | 0 to 20mA (max. load 1K Ω |
| Update rate: | 8Hz |
| Step response: | 250msec (10% to 90%) |
| Linearity: | 0.024% of hardware range |
| Performance: | See table |

| Performance | | |
|---|---|---|
| Range | Accuracy | Temperature drift |
| 0 to 10V | 0.2% of range | ± 0.12mV +0.022% of reading per °C |
| 0 to 20mA | 0.1% of range | ± 1µA + 0.03% of reading per °C |

## Transmitter PSU

**Isolated, 6100A recorder only**

| | |
|---|---|
| Number of outputs: | Three |
| Output voltage: | 25V nominal |
| Maximum current: | 20 mA per output |
| Isolation | Installation category II; |
| (dc to 65Hz; BS61010): | Pollution degree 2 |
| Channel to channel: | 100V RMS or dc (double insulation) |
| Channel to ground: | 100V RMS or dc (basic insulation) |
| Fuse (20mm Type T) | |
| Supply voltage: | 110/120V ac: 100 mA<br>220/240V ac: 63 mA |

## Relay Output Board

**General**

| | |
|---|---|
| Max. number of relay boards | |
| 6100A: | 4 (max. no of relay outputs = 12) |
| 6180A: | 9 (max. no of relay outputs = 27) |
| No. of relays per board: | 3 per C/O |
| Estimated mechanical life: | 30,000,000 operations |
| Update rate: | See “Update rates” in “Recorder Specification” above |

**AC load ratings**

Derating
The figures give below are for resistive loads. for reactive or inductive loads, de-rate in accordance with Graph 1, in which:

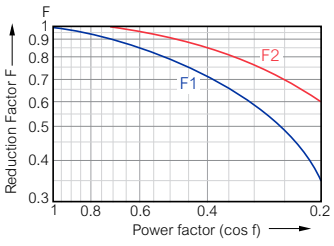
| | |
|---|---|
| F1 = | Actually measured results on representative samples |
| F2 = | Typical values according to experience |
| Contact life = | Resistive contact life x reduction factor |
| Max. switching power: | 500VA |
| Max. contact voltage: | 250V providing this does not cause the maximum switching power (above) to be exceeded |
| Max. contact current: | 2 Amps providing this does not cause the maximum switching power (above) to be exceeded |

**DC load ratings**

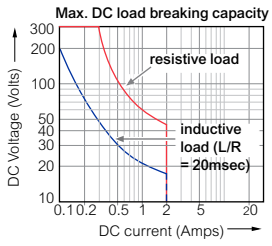
| | |
|---|---|
| Max. switching power: | See Graph 2 for operating volt/amp envelope |
| Max. contact voltage/current: | See Graph 2 for examples |

**Safety isolation**

| | |
|---|---|
| Isolation | Installation category II; |
| (dc to 65Hz; BS EN61010): | Pollution degree 2 |
| Relay to relay: | 300V RMS or dc (double insulation) |
| Relay to ground: | 300V RMS or dc (basic insulation) |




Graph 1
Derating curves for ac loads




Graph 2
DC load switching curves

## Event Input

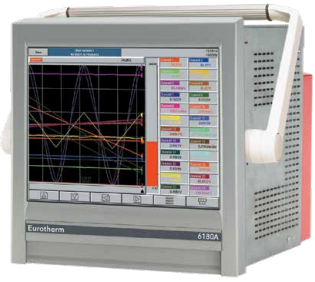
| | | |
|---|---|---|
| Number of inputs: | | 6 discrete inputs |
| Max. number of boards | | |
| | 6100A: | 4 |
| | 6180A: | 4 |
| Isolation | | |
| Event input to ground: | | 50V RMS or dc (double insulation) |
| Event input to Event input: | | 0V |
| Recognition levels “Active”: | | –30V to +0.8V |
| “Inactive”: | | +2 to +30V |
| Maximum frequency: | | 8 Hz |
| Minimum pulse width: | | 62.5 ms |
| Contact resistance | Event: | Active if resistance <35 KΩ<br>Inactive if resistance >200 KΩ<br>Status not defined if 35K Ω < resistance <200 KΩ between input terminal and ‘C’ terminal |
| Current sink (voltage I/P): | | 10 mA |

## Portable

**Portable option**



6100A is available as a General(PORTGEN) or Thermocouple (PORTUTC) portable



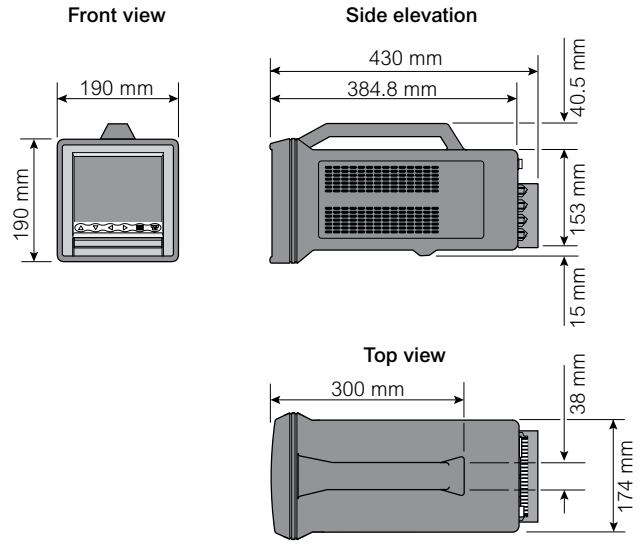
6180A is available with optional carry handle and feet for portability

| 6100A | Max. No of I/Ps** | Option Slots** | Relays | Serial Comms | Transmitter PSU | Event I/P |
|---|---|---|---|---|---|---|
| **General** | 18 | 4 | Yes* | Yes | Yes* | Yes* |
| **PORTUTC** | 15 | 0 | No | Yes | No | No** |

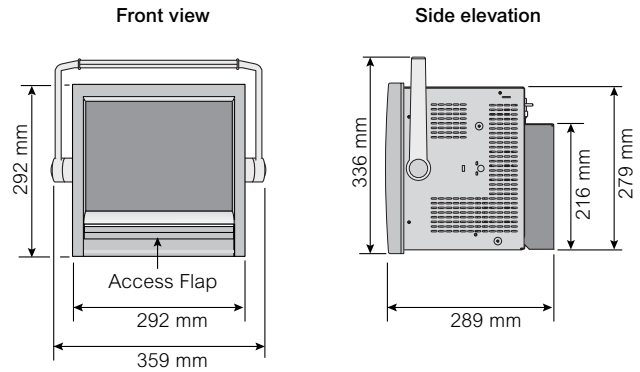
** Mutually exclusive
* Requires one option slot

# Portable Mechanical Details

## 6100A

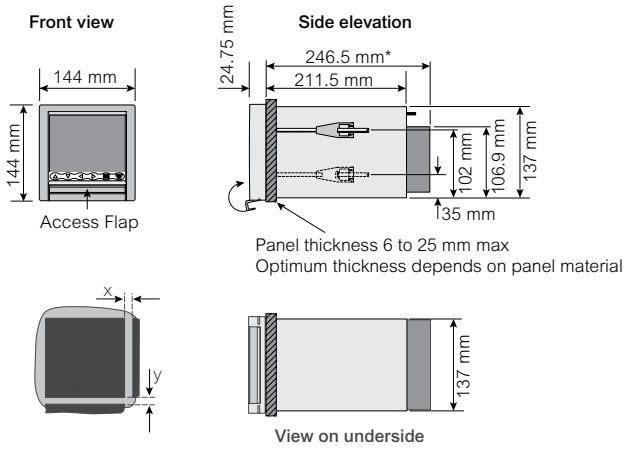



## 6180A



# Mechanical Details

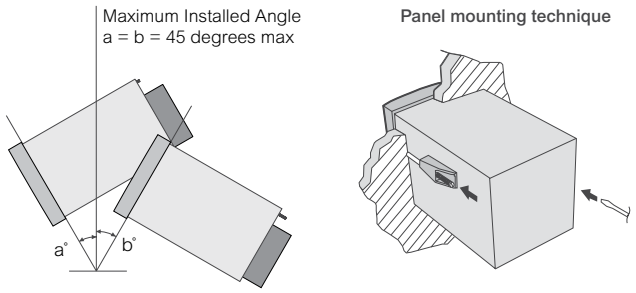
## 6100A



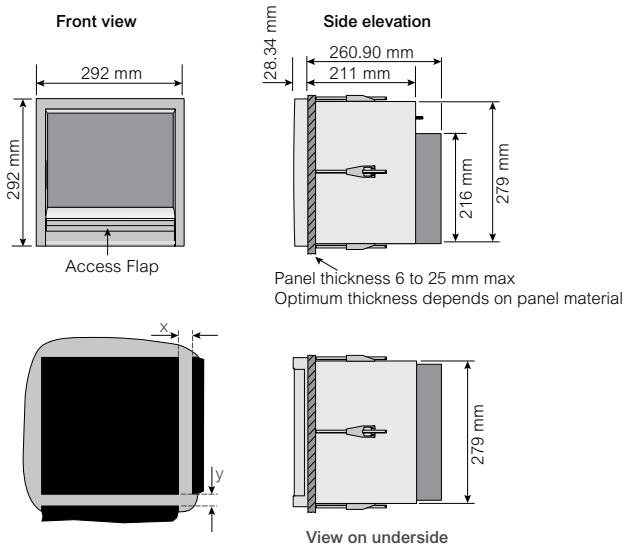

* Standard Terminal Cover: 246.5 mm
Long Terminal Cover: Closed: 288 mm
Open: 415 mm

**Panel cut-out**
138 mm (+1 –0) x 138 mm (+1 –0)

| Minimum recommended inter-unit spacing | |
|---|---|
| Side clamps | Top/bottom clamps |
| x = 15 mm (0.6 inch)<br>y = 10 mm (0.4 inch) | x = 10 mm (0.4 inch)<br>y = 15 mm (0.6 inch) |

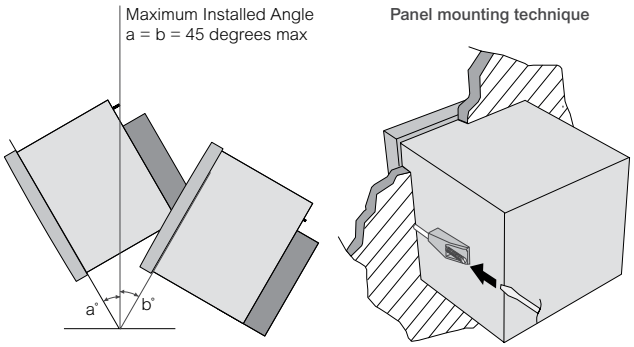



## 6180A

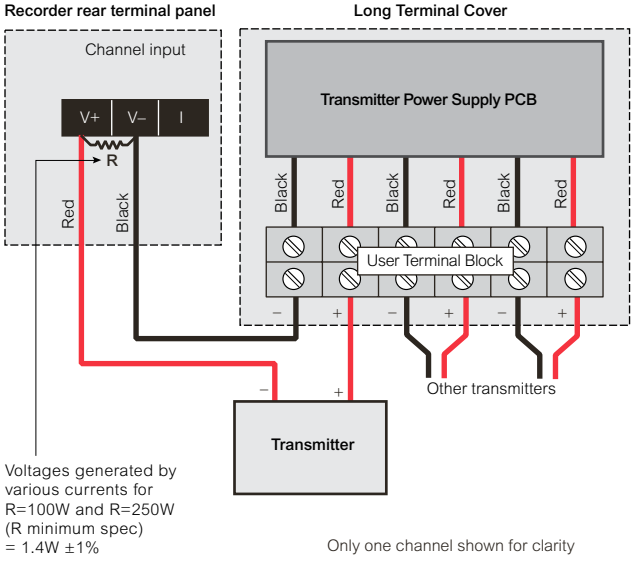



**Panel cut-out**
281 mm (+1 –0) x 281 mm (+1 –0)

| Minimum recommended inter-unit spacing | |
|---|---|
| Side clamps | Top/bottom clamps |
| x = 25 mm (1 inch)<br>y = 12.5 mm (0.5 inch) | x = 12.5 mm (0.5 inch)<br>y = 25 mm (1 inch) |




## Isolated Transmitter Power Supply Wiring (6100A only)

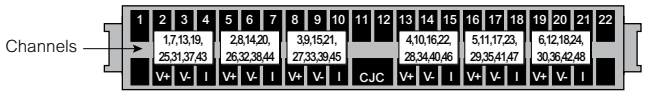



Voltages generated by various currents for R=100W and R=250W (R minimum spec) = 1.4W ±1%

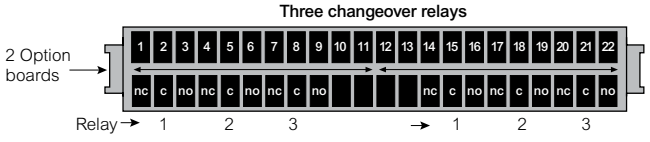
| | 100W | 250W |
|---|---|---|
| 0mA | 0V | 0V |
| 4mA | 0.4V | 1.0V |
| 20mA | 2.0V | 5.0V |

Only one channel shown for clarity

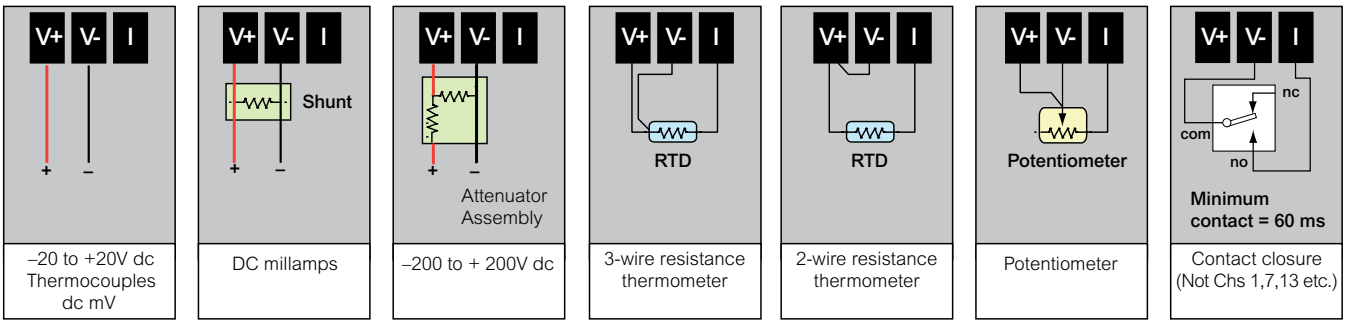
## Input Board Wiring




## Relay Board Wiring



## Input Board Signal Wiring

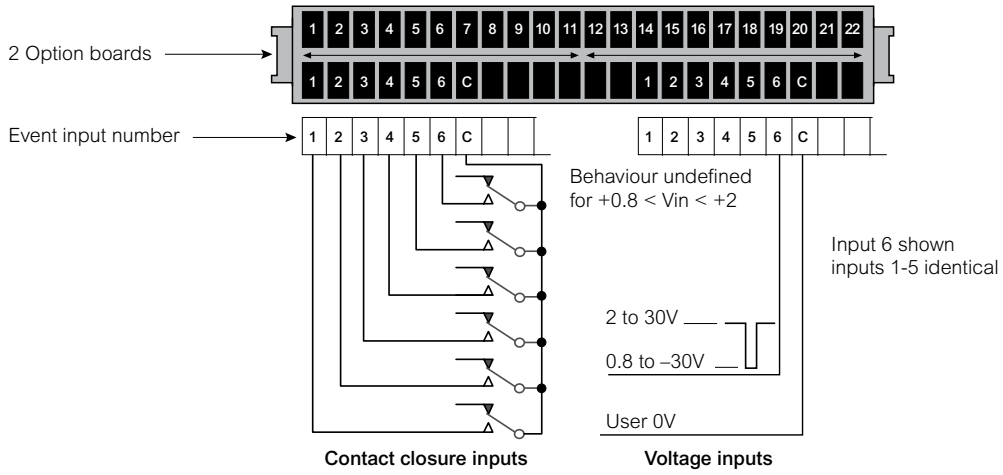



| –20 to +20V dc Thermocouples dc mV | DC millamps | –200 to + 200V dc | 3-wire resistance thermometer | 2-wire resistance thermometer | Potentiometer | Contact closure (Not Chs 1,7,13 etc.) |
|---|---|---|---|---|---|---|

Shunt assembly
100W = LA246779UK10
250W = LA246779UK25

Attenuator assembly
LA244180

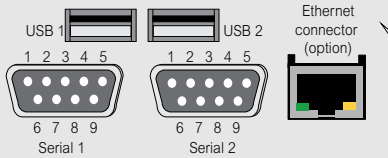
## Event Input Board Wiring

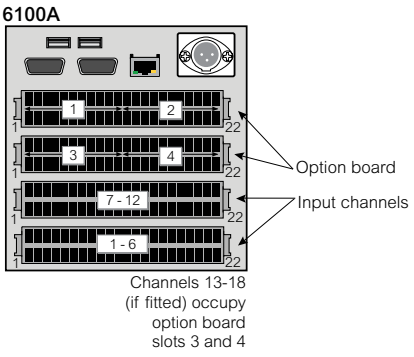


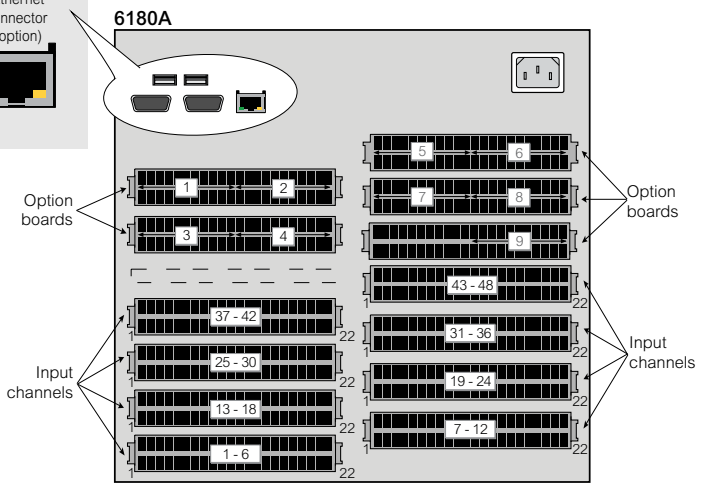

## Rear Terminal Connections

**Serial communication port pinout**

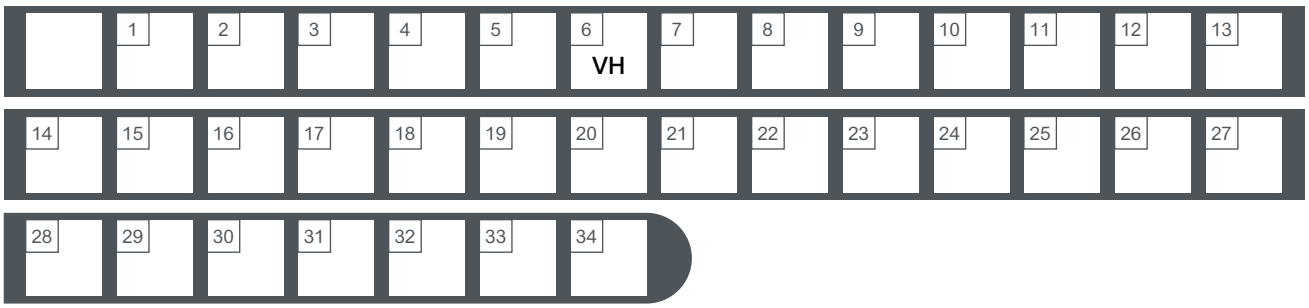
| Pin | EIA232 | EIA485 (5-wire) | EIA485 (3-wire) |
|---|---|---|---|
| 1 | Not connected | RxA | Link to pin 7 |
| 2 | Rx | Not connected | Not connected |
| 3 | Tx | Not connected | Not connected |
| 4 | DTR | Not connected | Not connected |
| 5 | Signal ground | | |
| 6 | Not Connected | RxB | Link to pin 8 |
| 7 | Not Connected | TxA | TxA/RxB |
| 8 | Not Connected | TxB | TxB/RxA |
| 9 | 5.0V via 1500W | | |



# Order Codes




| Basic Product | |
|---|---|
| 6100A | 100mm TFT 1/4 VGA Display Paperless Graphic Recorder |
| 6180A | 180mm TFT XGA Display Paperless Graphic Recorder |

| 1 Number of Channels | |
|---|---|
| U00 | 0 Input channels |
| U06 | 6 Input channels |
| U12 | 12 Input channels |
| U18 | 18 Input channels |
| U24 | 24 Input channels (6180A only) |
| U30 | 30 Input channels (6180A only) |
| U36 | 36 Input channels (6180A only) |
| U42 | 42 Input channels (6180A only) |
| U48 | 48 Input channels (6180A only) |

| 2 Industry Variant | |
|---|---|
| NONE | None |
| TUS | AMS2750E Heat Treatment specific variant |

| 3 Number of Channels | |
|---|---|
| PANEL | Panel mounting |
| PORTGEN | General Portable (6100A only) |
| PORTUTC | Universal Thermocouple Portable (6100A only) |
| CH | Carry handle (Bezel Colour Silver) |
| PMHD | Panel mounting with Heavy Duty Case Clamps |
| PMTN | Panel mounting with Thin panel mounting kit |

| 4 Lock | |
|---|---|
| NOLCK | Media lock not fitted |
| LOCK | Electronic lock fitted |

| 5 Bezel Color | |
|---|---|
| SLV | Silver including portable options |
| BLK | Black |

| 6 Power Supply | |
|---|---|
| VH | 90-264V ac (110-370 V dc) 47-63 Hz |

| 7 24V Isolated Transmitter Power Supply | |
|---|---|
| NONE | Not fitted |
| 115TPS | 110-120V 3 channel TPS (6100A only) |
| 230TPS | 220-240V 3 channel TPS (6100A only) |

| 8 Non Standard | |
|---|---|
| XXXXXX | Non standard option |

| 9 Internal Memory | |
|---|---|
| 096M | 96 MB for history – approx. 12 million samples |

| 10 Removable Media | |
|---|---|
| CF | Compact Flash and Front USB port |

| 11 Memory Card | |
|---|---|
| NOMC | Not fitted |
| 004G | 4 GB Card CF only* |
| 008G | 8 GB Card CF only* |

| 12 USB Memory Stick Size | |
|---|---|
| NOMC | Not fitted |
| 004GMS | 4 GB* |
| 008GMS | 8 GB* |

| 13 Rear USB | |
|---|---|
| 0RUSB | No rear USB ports |
| 2RUSB | 2 USB ports at rear |

| 14 Serial Communications Ports | |
|---|---|
| 0SRL | Not fitted |
| 2SRL | EIA 232/422/485 |

| 15 EtherNet Communications Protocol | |
|---|---|
| NONE | Not fitted |
| ESERV | EtherNet/IP server |

| 16 Calibration Certificates | |
|---|---|
| NOCAL | Not required |
| CAL | Calibration certificate |

| 17 Changeover Relays | |
|---|---|
| 00 | Not fitted |
| 03 | 3 (1 option brd) |
| 06 | 6 (2 option brds) |
| 09 | 9 (3 option brds) |
| 12 | 12 (4 option brds) |
| 15 | 15 (5 option brds) † |
| 18 | 18 (6 option brds) † |
| 21 | 21 (7 option brds) † |
| 24 | 24 (8 option brds) † |
| 27 | 27 (9 option brds) † |
| | † (6180A only) |

| 18 Normally Closed Relays | |
|---|---|
| 00 | Not fitted |

| 19 Normally Open Relays | |
|---|---|
| 00 | Not fitted |

| 20 Event Inputs | |
|---|---|
| 00 | Not fitted |
| 06 | 06 (1 brd) |
| 12 | 12 (2 brds) |
| 18 | 18 (3 brds) |
| 24 | 24 (4 brds) |

| 21 Analog Outputs | |
|---|---|
| 00 | None |
| 02 | 2 (1 option brd) |
| 04 | 4 (2 option brd) |
| 06 | 6 (3 option brd) |
| 08 | 8 (4 option brd) |

| 22 Quantity of Shunts | |
|---|---|
| _ _ | Enter quantity required |

| 23 Shunt Value | |
|---|---|
| NOS | Not required |
| 100 | 100 ohm shunts |
| 250 | 250 ohm shunts |

| 24 Quantity of 100:1 Attenuators | |
|---|---|
| _ _ | Enter quantity required |

| 25 Warranty | |
|---|---|
| XXXXX | Standard warranty |
| WL005 | Extended warranty |

| 26 Bridge | |
|---|---|
| BLITE | Lite (supplied as standard) |
| BFULL | Full |

| 27 Review & Quickchart | |
|---|---|
| RLITE | Lite (supplied as standard) |
| RFULL | Full |

| 28 Auditor | |
|---|---|
| NOADT | Not required |
| ALITE | Audit Trail |
| AFULL | Auditor Full |

| 29 Security Manager | |
|---|---|
| NOSM | Not required |
| SECMAN | Security Manager (inc. Active Directory) |

| 30 Groups | |
|---|---|
| 06GROUP | 6 (supplied as standard) |
| 12GROUP | 12 |

| 31 Math, Totalizers & Counters | |
|---|---|
| MTC00 | Not required |
| MTC36 | 36 Virtual Channels |
| MTC96 | 96 Virtual Channels |
| MTC128 | 128 Virtual Channels |

| 32 Batch | |
|---|---|
| NOBTCH | Not required |
| BATCH | Batch |

| 33 Screen Builder | |
|---|---|
| NOSB | Not required |
| ADSB | Advanced |

| 34 Master Communications | |
|---|---|
| NOMSTR | Not required |
| MSTR16 | 16 Slaves |
| MSTR32 | 32 Slaves |

* Please consult Eurotherm for this option

# 6100A & 6180A Paperless Graphic Recorders Specification

Life Is On | Eurotherm by Schneider Electric

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