



# Kronos Series 2P

## Panel Mount Satellite Clock



### Description

The Kronos Series 2P Satellite Clock is a cost effective and precise timekeeping solution tailored for automation, and control applications. The compact panel mount device offers several IRIG-B and NTP output options for use in new or retrofit applications. Designed with utility-grade reliability, configuration is simple and intuitive using the WebUI, and status is quickly observed on the integrated LED display.

With support for multiple constellations, the Series 2P ensures fast lock and minimal time in holdover while maintaining accuracy of  $\pm 60\text{ns}$ .

### Key Features

#### Ethernet Integration

- Supports browser-based configuration and SNMP

#### Output Flexibility

- NTP and SNTP
- IRIG-B (unmodulated and modulated)
- Ethernet, twisted pair, coax, fiber
- PPS or PPM signals

#### Multi-Constellation Support

- Locks onto GNSS constellations: GPS, GLONASS, BeiDou, Galileo
- Assures fast lock and minimal time in holdover

#### High Precision

- Available with standard TCXO
- Antenna cable-delay compensation for enhanced accuracy
- Accuracy 60ns (99%, clear sky)



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### Technical Data

#### General Data

|                               |   |
|-------------------------------|---|
| Unit Dimensions               | 10.6"W x 1.73"H x 5.54"D (269 x 44 x 141mm) |
| Mounting / Front Panel Height | Panel / 1 RU                                |
| Housing Material              | Aluminum                                    |
| Degree of Protection          | IP40-rated enclosure protection             |
| Weight                        | 3.1b (1.4 kg)                               |

#### Power Supply

|                       |   |
|-----------------------|---|
| Supply Voltage Range  | LV: 24-48V dc +/-20%<br>HV: 80-300V dc / 90-240V ac (50/60 Hz) +/-20% |
| Max Power Consumption | 43VA  |

#### Indicators

|         |  |
|---------|--|
| LED     | Locked (Green)<br>Holdover (Yellow)<br>Alarm (Red) |
| Display | Red Dot Matrix Display (5.0"x0.7"/127x18mm)        |

#### Environmental

|                       |                                  |
|-----------------------|----------------------------------|
| Operating Temperature | -40°C to +70°C (-40°F to +158°F) |
| Storage Temperature   | -40°C to +85°C (-40°F to +185°F) |
| Humidity              | 5% to 95%, non-condensing        |
| Altitude              | 2000m                            |

#### Unmodulated IRIG-B

|   |   |
|---|---|
| Supported IRIG-B Protocols                | B000/B002/B004/B006   |
| Connector Type / Quantity                 | Pluggable compression screw terminal (twisted pair): up to 2<br>BNC female (coax): up to 4<br>ST (fiber): up to 2 |
| Physical Performance (twisted pair, coax) | 200mA drive capability at 5V level<br>Up to 160 ft (50 m) cable<br>15 $\Omega$ output impedance<br>Fully-isolated |
| Optical Performance (fiber)               | 820nm wavelength<br>Optical power: -15.8dBm into 50/125 $\mu$ m fiber (-12dBm into 62.5/125 $\mu$ m fiber)        |

#### Modulated IRIG-B

|   |   |
|---|---|
| Supported IRIG-B Protocols                  | B120/B122/B124/B126   |
| Connector Type / Quantity                   | BNC female (coax): up to 2  |
| Electrical Performance (twisted pair, coax) | 5V pp (no load) / 3.2V pp (50 $\Omega$ load) output voltage<br>25 $\Omega$ output impedance |



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#### Ethernet

|                |   |
|----------------|---|
| Connector Type | 1 RJ45 10/100BaseT Ethernet Port                      |
| Protocols      | VLAN IEEE 802.1Q<br>NTP/SNTP<br>SNMP<br>MQTT<br>HTTPS |

#### GNSS Interface

|   |   |
|---|---|
| GNSS Receiver<br>Multi-constellation 72-channel | L1-C/A (1575.42 MHz) GPS signal<br>E1-B/C (1575.42 MHz) Galileo<br>L1OF (1602 MHz) GLONASS<br>B1 (1561.098 MHz) BeiDou<br><br>Note:<br>TCXO supports GPS, Galileo, and GLONASS or BeiDou simultaneously |
| Antenna Connector Type                          | TNC (female), 50 $\Omega$   |
| Antenna Type                                    | Active  |
| Holdover Oscillator                             | TCXO (standard): 0.1 ppm (approx. 8.64ms/24hrs) typical drift   |
| Tracking Sensitivity                            | -166dBm   |

#### Functional

|                     |   |
|---------------------|---|
| Alarm Dry Contact   | Type C / Breaking Capacity: 300mA @ 300V dc (resistive load)  |
| Additional Features | Built-in SNMP agent, with trap generation<br>User-configurable rules for daylight saving time (DST)<br>Antenna cable open and short-circuit detection<br>PPS/PPM signal |

#### Export Information

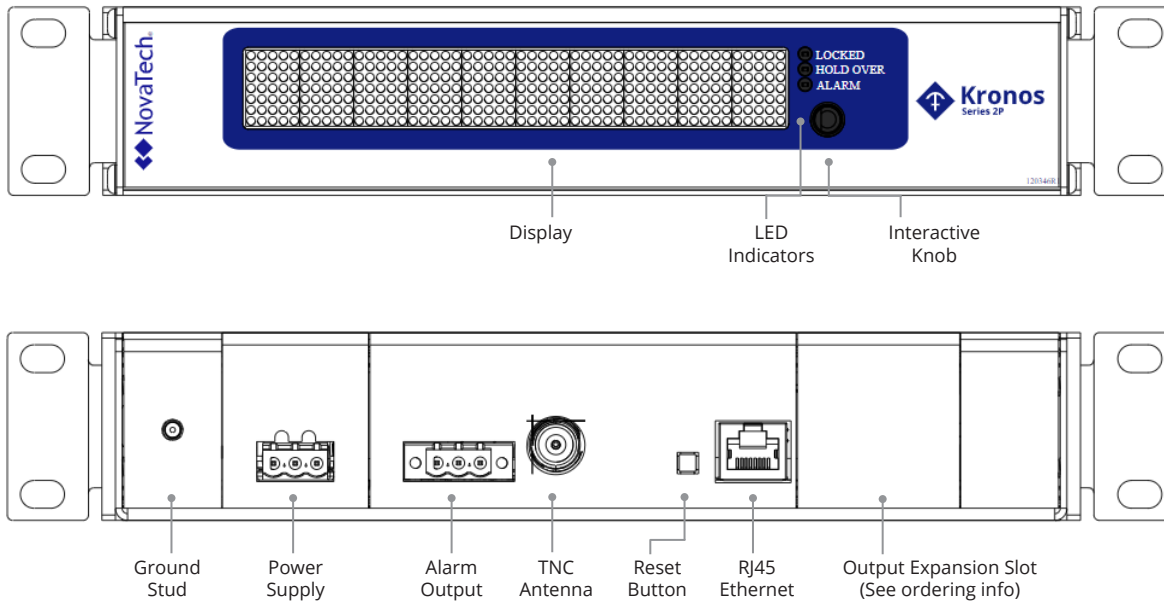
|                   |         |
|-------------------|---------|
| Country of Origin | USA     |
| HS Code           | 8517.62 |



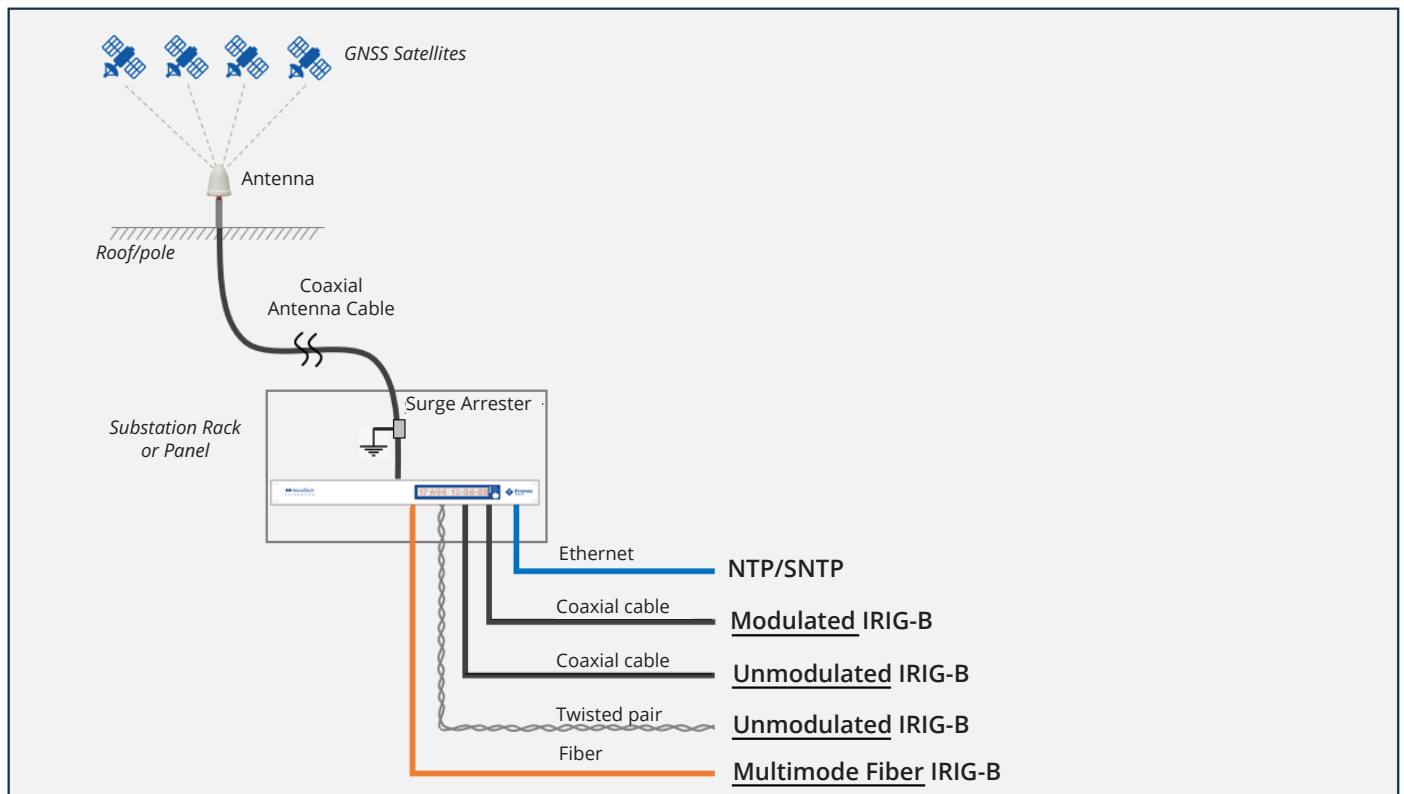
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### Product Diagram



### Application Diagram



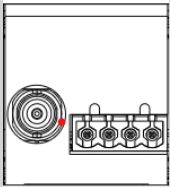
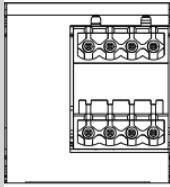
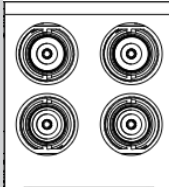

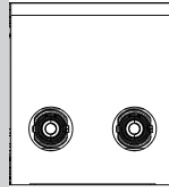


## Kronos Series 2P

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### Ordering Information

#### Output Expansion Cards

| Card P/N     | -1  | -2  | -4  | -A   | -F  |
|--------------|---|---|---|--|---|
| Type         | Unmodulated   | Unmodulated   | Unmodulated   | Modulated  | Multimode Fiber   |
| Connectors   | 1 BNC +<br>Compression<br>screw terminal  | Compression<br>screw terminal   | 4 BNC   | 2 BNC  | 2 ST  |
| IRIG Formats | B000/2/4/6  | B000/2/4/6  | B000/2/4/6  | B120/2/4/6   | B000/2/4/6  |
| Output Power | 1 x 200mA   | 2 x 200mA   | 4 x 200mA   | 2 x 200mA  | -15.8dBm in<br>50/125µm fiber   |
| Diagram      |  |  |  |  |  |



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### Ordering Information

Model Builder

| Model     | Expansion Card 1 | Antenna | Antenna Cable | Antenna Mount | Description  |
|-----------|------------------|---------|---------------|---------------|--|
| Kronos 2P | -                | -       | -             | -             | Panel Mount satellite clock, includes 1 RJ-45, 10' coax cable and surge arrestor |
|           | A                | -       | -             | -             | Dual Modulated Output Card   |
|           | 1                | -       | -             | -             | Single Unmodulated Output Card   |
|           | 2                | -       | -             | -             | Dual Unmodulated Output Card   |
|           | 4                | -       | -             | -             | Quad Unmodulated Output Card   |
|           | F                | -       | -             | -             | Dual Fiber Output Card   |
|           | X                | -       | -             | -             | Empty Expansion Slot (note: Must fill in order)                                  |
|           |                  | AU      | -             | -             | Universal Antenna  |
|           |                  | XX      | -             | -             | No Antenna   |
|           |                  |         | C015          | -             | Antenna Cable 15' (4.5m) – RG58  |
|           |                  |         | C030          | -             | Antenna Cable 30' (9m) – RG58  |
|           |                  |         | C050          | -             | Antenna Cable 50' (15m) – RG58   |
|           |                  |         | C080          | -             | Antenna Cable 80' (25m) – RG58   |
|           |                  |         | C200          | -             | Antenna Cable 200' (60m) – LMR400  |
|           |                  |         | XXXX          | -             | No Antenna Cable   |
|           |                  |         |               | MT            | Antenna Mount for Universal Antenna (AU)   |
|           |                  |         |               | XX            | No Antenna Mount   |

