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**Data Sheet**

July 31, 2026

YOKOGAWA

# Yokogawa 720221 16-Channel Temperature/Voltage Input Module

Compatible with ScopeCorder mainframes such as DL350, DL850E, DL850EV, and DL950 per Yokogawa plug-in matrices. Not listed for SL1000 in the DL850E-family module compatibility table. Firmware updates may be required depending on the main unit. Probes/scanner box are not included with the module alone; the 701953 scanner box is mandatory for measurement. Unlike the 720220 16-channel voltage-only module (faster update, no channel-to-channel isolation, coarser voltage accuracy), the 720221 trades speed for thermocouple support, channel isolation, finer voltage ranges, and stronger noise rejection via delta-sigma oversampling. Update period selection simultaneously sets the automatic bandwidth limit for noise control. Yokogawa 720221 16-Channel Temperature/Voltage Input Module The Yokogawa 16-channel temperature/voltage ScopeCorder plug-in is model 720221. Requests for "701221" for this product typically refer to 720221 (module body). The required companion external scanner box is model 701953 (cable lengths 1 m or 3 m). There is no Yokogawa ScopeCorder module designated 701221 matching this description. The Yokogawa 720221 is a 16-channel isolated temperature and DC voltage input module for Yokogawa ScopeCorder platforms. Yokogawa documentation describes it as a scan-type multichannel module that measures up to 16 subchannels of DC voltage or thermocouple temperature on a single plug

No photo

MODEL

**Yokogawa 720221**

CALIBRATION

**N/A — off-catalog  
OEM datasheet**

CONDITION

**See OEM  
documentation**

STATUS

**Not listed on  
Aumictech  
inventory**

RFQ / SKU

**720221**

LISTING

**Off-catalog — OEM dat  
asheet only**

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

## Features & description

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From manufacturer datasheet

### Features

- 16 isolated unbalanced input channels (scan method)
- Thermocouple temperature and DC voltage measurement on one module
- Data update periods: 100 ms, 300 ms, 1 s, or 3 s (independent of channel count)
- Maximum effective sample rate approximately 10 S/s (100 ms update)
- Voltage accuracy  $\pm 0.15\%$  of 10 div
- Supports thermocouples K, E, J, T, L, U, N, R, S, B, W, and KP/AuFe
- Channel-to-channel isolation and burnout detection
- Built-in reference junction compensation in the external scanner box
- Requires External Scanner Box model 701953

## 720221 Characteristics / Specifications

| PARAMETER                         | VALUE                                                                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                             | 720221                                                                                                                                                      |
| Instrument Type                   | 16 CH Temperature/Voltage Input Module                                                                                                                      |
| Input Channels                    | 16                                                                                                                                                          |
| Input Type                        | Isolated unbalanced                                                                                                                                         |
| Input Coupling                    | TC (thermocouple temperature), DC (voltage), GND                                                                                                            |
| Data Updating Period              | Selectable 100 ms / 300 ms / 1 s / 3 s                                                                                                                      |
| Maximum Sample Rate (effective)   | 10 S/s                                                                                                                                                      |
| Input Connector                   | Screw-type terminals on external scanner box                                                                                                                |
| Input Impedance                   | Approximately 1 MOhm                                                                                                                                        |
| A/D Conversion                    | Delta-sigma; 16-bit at voltage measurement (2400 LSB/div class resolution)                                                                                  |
| Vertical Resolution (Voltage)     | 2400 LSB/div                                                                                                                                                |
| Vertical Resolution (Temperature) | 0.1 C                                                                                                                                                       |
| Residual Noise Level              | +/-0.01 div, typical                                                                                                                                        |
| Weight (Module)                   | Approximately 220 g to 250 g Voltage Measurement                                                                                                            |
| Voltage Accuracy                  | +/- (0.15% of 10 div)                                                                                                                                       |
| Type K                            | -200 C to 1300 C; +/- (0.1% of reading + 1.5 C); for -200 C to 0 C use +/- (0.2% of reading + 1.5 C)                                                        |
| Type E                            | -200 C to 800 C; same accuracy rules as K/J/T/L/U/N group above                                                                                             |
| Type J                            | -200 C to 1100 C                                                                                                                                            |
| Type T                            | -200 C to 400 C                                                                                                                                             |
| Type N                            | 0 C to 1300 C                                                                                                                                               |
| Type R                            | 0 C to 1700 C; +/- (0.1% of reading + 3 C); except 0 to 200 C: +/-8 C; 200 to 800 C: +/-5 C                                                                 |
| Type S                            | 0 C to 1700 C; same exception rules as TypeR<br>Type B: 0 C to 1800 C (effective 400 C to 1800 C); +/- (0.1% of reading + 2 C); except 400 to 700 C: +/-8 C |

| PARAMETER                                              | VALUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermocouple Standards                                 | JIS C1602 / IEC 584-1 for K, E, J, T, N, R, S, B; ASTM E988 for W; DIN 43710 for Land U Reference Junction Compensation Internal/external RJC switchable on a per-channel basis                                                                                                                                                                                                                                                                                                                                         |
| RJC Accuracy (input terminal temperature balanced)     | K, E, J, T, L, U, N: +/-1 °C; R, S, B, W: +/-1.5 °C; KP/AuFe: +/-1 K RJC circuitry is located in the 701953 external scanner box Input Voltage And Isolation Limits (1 kHz or Less)                                                                                                                                                                                                                                                                                                                                     |
| Maximum Input Voltage (voltage and temperature)        | 42 V (DC + AC <sub>peak</sub> ), CAT I and CAT II                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum Allowable Common Mode / Rated Voltage to Earth | 42 V (DC + AC <sub>peak</sub> ), CAT I and CAT II (30 V <sub>rms</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Common Mode Rejection (Voltage Measurement)            | 100 dB or more (50/60 Hz), typical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| At 100 ms update                                       | 600 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| At 300 ms update                                       | 200 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| At 1 s update                                          | 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| At 3 s update                                          | 10 Hz External Scanner Box (Required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Supplied Cable Length                                  | 1 m or 3 m (selectable; 701953-L1 / 701953-L3 style offerings)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Functions                                              | Screw terminal field wiring for voltage or thermocouples; isolation between ground and terminals and between subchannels; RJC; burnout detection ON/OFF per channel Platform Compatibility<br>Compatible with ScopeCorder mainframes such as DL350, DL850E, DL850EV, and DL950 per Yokogawa plug-in matrices. Not listed for SL1000 in the DL850E-family module compatibility table. Firmware updates may be required depending on the main unit. Probes/scanner box are not included with the module alone; the 701953 |
| Data update periods                                    | 100 ms, 300 ms, 1 s, or 3 s (independent of channel count)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Bandwidth                                              | Limit (Typical, -3 dB, Automatic With Update Period)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## General Specifications & Supplementary Characteristics

| PARAMETER                         | VALUE                                                                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                             | 720221                                                                                                                                                      |
| Instrument Type                   | 16 CH Temperature/Voltage Input Module                                                                                                                      |
| Input Channels                    | 16                                                                                                                                                          |
| Input Type                        | Isolated unbalanced                                                                                                                                         |
| Input Coupling                    | TC (thermocouple temperature), DC (voltage), GND                                                                                                            |
| Data Updating Period              | Selectable 100 ms / 300 ms / 1 s / 3 s                                                                                                                      |
| Maximum Sample Rate (effective)   | 10 S/s                                                                                                                                                      |
| Input Connector                   | Screw-type terminals on external scanner box                                                                                                                |
| Input Impedance                   | Approximately 1 MOhm                                                                                                                                        |
| A/D Conversion                    | Delta-sigma; 16-bit at voltage measurement (2400 LSB/div class resolution)                                                                                  |
| Vertical Resolution (Voltage)     | 2400 LSB/div                                                                                                                                                |
| Vertical Resolution (Temperature) | 0.1 C                                                                                                                                                       |
| Residual Noise Level              | +/-0.01 div, typical                                                                                                                                        |
| Weight (Module)                   | Approximately 220 g to 250 g Voltage Measurement                                                                                                            |
| Voltage Accuracy                  | +/- (0.15% of 10 div)                                                                                                                                       |
| Type K                            | -200 C to 1300 C; +/- (0.1% of reading + 1.5 C); for -200 C to 0 C use +/- (0.2% of reading + 1.5 C)                                                        |
| Type E                            | -200 C to 800 C; same accuracy rules as K/J/T/L/U/N group above                                                                                             |
| Type J                            | -200 C to 1100 C                                                                                                                                            |
| Type T                            | -200 C to 400 C                                                                                                                                             |
| Type N                            | 0 C to 1300 C                                                                                                                                               |
| Type R                            | 0 C to 1700 C; +/- (0.1% of reading + 3 C); except 0 to 200 C: +/-8 C; 200 to 800 C: +/-5 C                                                                 |
| Type S                            | 0 C to 1700 C; same exception rules as TypeR<br>Type B: 0 C to 1800 C (effective 400 C to 1800 C); +/- (0.1% of reading + 2 C); except 400 to 700 C: +/-8 C |

| PARAMETER                                              | VALUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermocouple Standards                                 | JIS C1602 / IEC 584-1 for K, E, J, T, N, R, S, B; ASTM E988 for W; DIN 43710 for Land U Reference Junction Compensation Internal/external RJC switchable on a per-channel basis                                                                                                                                                                                                                                                                                                                                         |
| RJC Accuracy (input terminal temperature balanced)     | K, E, J, T, L, U, N: +/-1 C; R, S, B, W: +/-1.5 C; KP/AuFe: +/-1 K RJC circuitry is located in the 701953 external scanner box Input Voltage And Isolation Limits (1 kHz or Less)                                                                                                                                                                                                                                                                                                                                       |
| Maximum Input Voltage (voltage and temperature)        | 42 V (DC + AC <sub>peak</sub> ), CAT I and CAT II                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum Allowable Common Mode / Rated Voltage to Earth | 42 V (DC + AC <sub>peak</sub> ), CAT I and CAT II (30 V <sub>rms</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Common Mode Rejection (Voltage Measurement)            | 100 dB or more (50/60 Hz), typical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| At 100 ms update                                       | 600 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| At 300 ms update                                       | 200 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| At 1 s update                                          | 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| At 3 s update                                          | 10 Hz External Scanner Box (Required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Supplied Cable Length                                  | 1 m or 3 m (selectable; 701953-L1 / 701953-L3 style offerings)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Functions                                              | Screw terminal field wiring for voltage or thermocouples; isolation between ground and terminals and between subchannels; RJC; burnout detection ON/OFF per channel Platform Compatibility<br>Compatible with ScopeCorder mainframes such as DL350, DL850E, DL850EV, and DL950 per Yokogawa plug-in matrices. Not listed for SL1000 in the DL850E-family module compatibility table. Firmware updates may be required depending on the main unit. Probes/scanner box are not included with the module alone; the 701953 |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

environmental and process temperature recording, multipoint thermocouple surveys, and mixed voltage/temperature acquisition on DL350, DL850E/EV, DL950, and related systems.

Key Features

- 16 isolated unbalanced input channels (scan method)
- Thermocouple temperature and DC voltage measurement on one module
- Data update periods: 100 ms, 300 ms, 1 s, or 3 s (independent of channel count)
- Maximum effective sample rate approximately 10 S/s (100 ms update)
- Voltage accuracy +/-0.15% of 10 div
- Supports thermocouples K, E, J, T, L, U, N, R, S, B, W, and KP/AuFe
- Channel-to-channel isolation and burnout detection
- Built-in reference junction compensation in the external scanner box
- Requires External Scanner Box model 701953

Technical Specifications

## Technical Specifications

| PARAMETER                         | VALUE                                                                      |
|-----------------------------------|----------------------------------------------------------------------------|
| Model                             | 720221                                                                     |
| Instrument Type                   | 16 CH Temperature/Voltage Input Module                                     |
| Input Channels                    | 16                                                                         |
| Input Type                        | Isolated unbalanced                                                        |
| Input Coupling                    | TC (thermocouple temperature), DC (voltage), GND                           |
| Data Updating Period              | Selectable 100 ms / 300 ms / 1 s / 3 s                                     |
| Maximum Sample Rate (effective)   | 10 S/s                                                                     |
| Input Connector                   | Screw-type terminals on external scanner box                               |
| Input Impedance                   | Approximately 1 MOhm                                                       |
| A/D Conversion                    | Delta-sigma; 16-bit at voltage measurement (2400 LSB/div class resolution) |
| Vertical Resolution (Voltage)     | 2400 LSB/div                                                               |
| Vertical Resolution (Temperature) | 0.1 C                                                                      |
| Residual Noise Level              | +/-0.01 div, typical                                                       |
| Weight (Module)                   | Approximately 220 g to 250 g                                               |

Voltage Measurement

Voltage-Axis Sensitivity: 1 mV/div to 2 V/div (1-2-5 steps)

Voltage Accuracy: +/- (0.15% of 10 div)

Temperature Coefficient, Zero Point: +/- (0.025% of 10 div)/C, typical

Temperature Coefficient, Gain: +/- (0.01% of 10 div)/C, typical

Temperature Measurement Accuracy

Temperature accuracy figures below exclude reference junction compensation accuracy.

## Specifications

| PARAMETER | VALUE                                                                                                |
|-----------|------------------------------------------------------------------------------------------------------|
| Type K    | -200 C to 1300 C; +/- (0.1% of reading + 1.5 C); for -200 C to 0 C use +/- (0.2% of reading + 1.5 C) |
| Type E    | -200 C to 800 C; same accuracy rules as K/J/T/L/U/N group above                                      |
| Type J    | -200 C to 1100 C                                                                                     |
| Type T    | -200 C to 400 C                                                                                      |

Type L (Fe-CuNi, DIN 43710): -200 C to 900 C  
Type U (Cu-CuNi, DIN 43710): -200 C to 400 C

## Specifications

| PARAMETER | VALUE                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type N    | 0 C to 1300 C                                                                                                                                                |
| Type R    | 0 C to 1700 C; +/- (0.1% of reading + 3 C); except 0 to 200 C: +/-8 C; 200 to 800 C: +/-5 C                                                                  |
| Type S    | 0 C to 1700 C; same exception rules as Type R<br>Type B: 0 C to 1800 C (effective 400 C to 1800 C); +/- (0.1% of reading + 2 C); except 400 to 700 C: +/-8 C |

Type W (W-5%Re/W-26%Re): 0 C to 2300 C; +/- (0.1% of reading + 3 C)  
KP/AuFe (Au-Fe-chromel): 0 K to 300 K; 0 to 50 K: +/-4 K; 50 to 300 K: +/-2.5 K  
Thermocouple Standards: JIS C1602 / IEC 584-1 for K, E, J, T, N, R, S, B; ASTM E988 for W; DIN 43710 for L and U  
Reference Junction Compensation  
Internal/external RJC switchable on a per-channel basis  
RJC Accuracy (input terminal temperature balanced): K, E, J, T, L, U, N: +/-1 C; R, S, B, W: +/-1.5 C;  
KP/AuFe: +/-1 K  
RJC circuitry is located in the 701953 external scanner box  
  
Input Voltage And Isolation Limits (1 kHz or Less)  
Maximum Input Voltage (voltage and temperature): 42 V (DC + AC<sub>peak</sub>), CAT I and CAT II  
Maximum Allowable Common Mode / Rated Voltage to Earth: 42 V (DC + AC<sub>peak</sub>), CAT I and CAT II (30 V<sub>rms</sub>)  
Common Mode Rejection (Voltage Measurement): 100 dB or more (50/60 Hz), typical  
Common Mode Rejection (Temperature, 3 s update): 140 dB or more (50/60 Hz), typical  
Channel-to-Channel Interference: 100 dB or more (50/60 Hz), typical  
  
Bandwidth Limit (Typical, -3 dB, Automatic With Update Period)

## Specifications

| PARAMETER        | VALUE  |
|------------------|--------|
| At 100 ms update | 600 Hz |
| At 300 ms update | 200 Hz |
| At 1 s update    | 50 Hz  |
| At 3 s update    | 10 Hz  |

External Scanner Box (Required)  
Model: 701953  
Supplied Cable Length: 1 m or 3 m (selectable; 701953-L1 / 701953-L3 style offerings)  
Functions: Screw terminal field wiring for voltage or thermocouples; isolation between ground and terminals and between subchannels; RJC; burnout detection ON/OFF per channel

#### Platform Compatibility

Compatible with ScopeCorder mainframes such as DL350, DL850E, DL850EV, and DL950 per Yokogawa plug-in matrices. Not listed for SL1000 in the DL850E-family module compatibility table. Firmware updates may be required depending on the main unit. Probes/scanner box are not included with the module alone; the 701953 scanner box is mandatory for measurement.

#### Operational Notes

Unlike the 720220 16-channel voltage-only module (faster update, no channel-to-channel isolation, coarser voltage accuracy), the 720221 trades speed for thermocouple support, channel isolation, finer voltage ranges, and stronger noise rejection via delta-sigma oversampling. Update period selection simultaneously sets the automatic bandwidth limit for noise control.

#### Notes

This manual OEM source was compiled from official Yokogawa 720221 product specifications and ScopeCorder plug-in module bulletins (DL850E/DL850EV/DL350/SL1000 and related documentation). Model identity corrected from the commonly mistyped "701221" to official Yokogawa model 720221.

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: N/A — off-catalog OEM datasheet. See OEM documentation · Not listed on Aumictech inventory.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
30-day returns  
NAICS 423690 · 811210 · 541380  
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.