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# Input Plug-in Module Specifications

## High-speed isolation module (with 12-bit A/D resolution) (701855)

| | |
|---|---|
| Number of input channels | 1 |
| Input couplings | DC, AC, GND |
| A/D conversion resolution | 12 bits (maximum 16 bits with box average on) |
| Maximum sampling rate | 10 MS/s |
| Input type | Isolated unbalanced |
| Frequency band (-3 dB)*1 | DC to 1 MHz |
| Input range (8 div/display) | |
| In combination with 700929 probe | 200 V/div to 50 mV/div (1/2/5 steps) |
| Main unit alone | 20 V/div to 5 mV/div (1/2/5 steps) |
| Maximum input voltage (1 kHz or less) | |
| In combination with 700929 probe (between tip H and L*3) | 850 V (DC + AC peak) (CAT I & II, 600 Vrms) |
| Main unit only (between H and L*4) | 250 V (DC + AC peak) (CAT I & II, 177 Vrms) |
| Maximum allowable in-phase voltage | |
| In combination with 700929 probe (between probe tip H or L and case ground*5) | 400 Vrms (CAT I & II)<br>600 Vrms (specification other than EN61010-1) |
| Main unit only (between signal L and case ground*6) | 42 V (DC + AC peak) (1 kHz or less) (CAT I & II, 30 Vrms) |
| DC accuracy*1(20 V/div to 10 mV/div) (main unit only) | ±(1.5% of 8 div + offset voltage accuracy) |
| Offset voltage accuracy*1 | ±(0.04% of offset voltage range + 1% of setting) |
| Input impedance | 1 MΩ ±1% (approximately 30 pF) |
| Connector type | Isolated BNC connector |
| Input filters | OFF, 500 kHz, 50 kHz, 5 kHz, 500 Hz |

## High-speed module (with 12-bit A/D resolution) (701856)

| | |
|---|---|
| Number of input channels | 1 |
| Input couplings | DC, AC, GND |
| A/D conversion resolution | 12 bits (maximum 16 bits with box average on) |
| Maximum sampling rate | 10 MS/s |
| Input type | Nonisolated unbalanced |
| Frequency band (-3 dB)*1 | DC to 4 MHz |
| Input range (8 div/display) | 20 V/div to 5 mV/div (1/2/5 steps) |
| Maximum input voltage (1 kHz or less) | 250 V (DC + AC peak) (CAT I & II, 177 Vrms) |
| DC accuracy*1 | |
| 20 V/div to 20 mV/div | ±(1.2% of 8 div + offset voltage accuracy) |
| Offset voltage accuracy*1 | ±(0.04% of offset voltage range + 1% of setting) |
| Input impedance | 1 MΩ ±1% (approximately 30 pF) |
| Connector type | BNC connector |
| Input filters | OFF, 500kHz, 50kHz, 5kHz, 500Hz |

## High-resolution high-voltage isolation module (701852)

| | |
|---|---|
| Number of input channels | 1 |
| Input couplings | DC, AC, GND |
| A/D conversion resolution | 16 bits (8000LSB/div) |
| Maximum sampling rate | 100 kS/s |
| Input type | Isolated unbalanced |
| Frequency band (-3 dB)*1 | DC to 40 kHz (200 V/div to 100 mV/div)<br>DC to 30 kHz (50 mV/div) |
| Input range (8 div/display) | 200 V/div to 50 mV/div (1/2/5 steps) |
| Maximum input voltage (1 kHz or less)(between signal H and L*7) | 850 V (DC + AC peak) (CAT I & II, 600 Vrms) |
| Maximum allowable in-phase voltage (between signal H or L and case ground*8) | 400 Vrms (CAT I & II)<br>600 Vrms (specification other than EN61010-1) |
| DC accuracy*1 *2 (excluding when input filter is set to Auto) | |
| 200 V/div to 100 mV/div | ±(0.5% of 8 div) |
| 50 mV/div | ±(1% of 8 div) |
| Input impedance | 1 MΩ ±1% |
| Connector type | Safety connector (banana plug) |
| CMRR | 80 dB (50/60 Hz) or higher |
| Temperature coefficient | (excluding when input filter is set to Auto) |
| Zero point | ±(0.02% of 8 div)/°C |
| Gain | ±(0.02% of 8 div)/°C |
| Input filters (LPF) | OFF, Auto, 4 kHz, 400 Hz, 40 Hz |
| FFT anti-aliasing filter | OFF, 40 kHz to 20 Hz |

## High-resolution isolation module (701853)

| | |
|---|---|
| Number of input channels | 1 |
| Input couplings | DC, AC, GND |
| A/D conversion resolution | 16 bits (8000LSB/div) |
| Maximum sampling rate | 100 kS/s |
| Input type | Isolated unbalanced |
| Frequency band (-3 dB)*1 | DC to 40 kHz (20 V/div to 10 mV/div)<br>DC to 30 kHz (5 mV/div) |
| Input range (8 div/display) | 20 V/div to 5 mV/div (1/2/5 steps) |
| Maximum input voltage (1 kHz or less)(between signal H and L*9) | 100 V (DC + AC peak) (CAT I & II, 70 Vrms) |
| Maximum allowable in-phase voltage (between signal H or L and case ground*10) | 600 Vrms<br>400 Vrms (CAT I & II) |
| DC accuracy*1 *2 (excluding when input filter is set to Auto) | |
| 20 V/div to 20 mV/div | ±(0.3% of 8 div) |
| 10 mV/div | ±(0.5% of 8 div) |
| 5 mV/div | ±(1% of 8 div) |
| Input impedance | 1 MΩ ±1% |
| Connector type | Safety connector (banana plug) |
| CMRR | 80 dB (50/60 Hz) or higher |
| Temperature coefficient | (excluding when input filter is set to Auto) |
| Zero point | ±(0.02% of 8 div)/°C |
| Gain | ±(0.02% of 8 div)/°C |
| Input filters (LPF) | OFF, Auto, 4 kHz, 400 Hz, 40 Hz |
| FFT anti-aliasing filter | OFF, 40 kHz to 20 Hz |

## High-resolution voltage/RMS isolation module (701857) NEW

| | |
|---|---|
| (Waveform measurement mode and RMS measurement mode) | |
| Input channels | 1 |
| Input coupling | DC/AC/GND/RMS-DC/RMS-AC |
| A/D conversion resolution | 16 bits (4000LSB/div) |
| Maximum sample rate | 100 kS/s |
| Input type | Isolated unbalanced |
| Input range (8 div display) | 200 V/div to 50 mV/div (steps of 1, 2, or 5) |
| Maximum input voltage (1 kHz or less) (across signal H and L) | 850 V (DC + ACpeak) |
| Maximum allowed in-phase voltage (across signal H or L and case ground) | 500 Vrms (CAT I & II)<br>600 Vrms (specification outside EN61010-1 ratings) |
| Input impedance | 1 MΩ ± 1% |
| Connector type | Safety connector (for banana plugs) |
| Temperature coefficient | |
| Zero point | ±0.02% of 8 div/°C |
| Gain | ±0.02% of 8 div/°C |
| Input filters | OFF/100 Hz/1 kHz |
| (Waveform measurement mode) | |
| DC accuracy*1 | ±0.5% of 8 div |
| Frequency band *1 | DC to 40 kHz |
| (-3 dB attenuation point when sinewave with amplitude equivalent to ±3 div is input) | |
| CMRR | 80 dB (50 Hz/60 Hz) or greater (typical) |
| (RMS measurement mode) | |
| Measurement range | DC, 40 Hz to 10 kHz |
| DC accuracy*1*15 | ±1% of 8 div |
| AC accuracy*1*15 | |
| Sinewave input | ±1.5/% of 8 div (40 Hz to 1 kHz) |
| Crest factor of 2 or less | ±2.0% of 8 div (40 Hz to 1 kHz) |
| Crest factor of 3 or less | ±3.0% of 8 div (40 Hz to 1 kHz) |
| Response time | Rise (from 0 to 90% of 8 div) 100 ms (typical)<br>Fall (from 100 to 10% of 8 div) 200 ms (typical) |
| Crest factor | 3 or less |

## Temperature Module (701860)

| | |
|---|---|
| Number of input channels | 1 |
| Data updating rate | Approximately 135 Hz |
| Input type | Isolated unbalanced |
| Applicable sensor | Thermocouple |
| Measurement range/accuracy*1 *11 | |

| Type | Measurement range | Accuracy |
|---|---|---|
| K | –200 to 1300°C | ±(0.2% of reading + 1.5°C) |
| E | –200 to 800°C | except : –200 to 0°C : ±(0.5% of reading ± 1.5°C) |
| J | –200 to 1100°C | |
| T | –200 to 400°C | |
| L | –200 to 900°C | |
| U | –200 to 400°C | |
| N | 0 to 1300°C | |



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