



# Specifications

# GEN SERIES UNIVERSAL 1M ISO DIGITIZER

| Universal 1M iso CARD         |  |
|-------------------------------|--|
| <b>Analog Input Selection</b> |  |
| <b>Number of Channels</b>     | 4  |
| <b>Input Type</b>             | Fully isolated and differential; software selectable: voltage, current or ICP <sup>(1)</sup> ; differential or single-ended isolated |
| <b>Input Connectors</b>       | 4 x 2 isolated BNC   |
| <b>Input Coupling</b>         | AC (-3 dB @ 1.6 Hz), DC, GND   |
| <b>Input Impedance</b>        | 2 x 1 MΩ // 100 pF   |
| <b>Input Ranges</b>           | 13, programmable:  |
| <b>Course</b>                 | ± 10 mV to ± 100 V in 1, 2, 5 steps  |
| <b>Fine</b>                   | variable gain in 1000 steps (0.1 %) of the selected range within each course range   |
| <b>Offset (zero position)</b> | software selectable in 1000 steps (0.1 %) of selected Full Scale with a maximum of 50 % in the ± 100 V range                         |
| <b>Analog Bandwidth</b>       | < ± 0.2 V: 310 kHz (-3 dB)<br>≥ ± 0.2 V: 500 kHz (-3 dB)   |
| <b>CMRR</b>                   | ≥ 80 dB typical @ 80 Hz for all ranges   |
| <b>CMV Range</b>              | Ranges < ± 2 V: < 10 Vp<br>Ranges > ± 20 V: < 250 Vp<br>Other ranges < 100 Vp; all referred to amplifier ground                      |
| <b>Measurement Overrange</b>  | 5% above/below Full Scale  |
| <b>Recovery time</b>          | ≤ 10 μs to 0.03 % after a 200 % Full Scale overload  |

| ICP Support <sup>(1)</sup>                |  |
|---|--|
| <b>Excitation Current</b>                 | 1 to 15 mA, software selectable in 1 mA steps    |
| <b>Excitation Voltage</b>                 | 24 Volt nominal                                  |
| <b>Coupling Time Constant</b>             | 1 second   |
| <b>Input ranges</b>                       | 7 ranges from ± 0.2 V to ± 20 V in 1, 2, 5 steps |
| Current Shunt Support                     |  |
| <b>Accuracy<sup>(2)</sup></b>             | ≤ 0.2 % of FS ± 300 μA                           |
| <b>Ranges</b>                             | 5 ranges from ± 50 mA to ± 1 A in 1, 2, 5 steps  |
| <b>Measurement Shunt</b>                  | 0.2 Ω ± 1 %                                      |
| <b>Maximum Current</b>                    | 1 Ampère   |
| <b>Overload Protection</b>                | 1.6 Ampère resettable fuse, 0.1 Ω ± 20 %         |
| Isolation and Protection                  |  |
| <b>Maximum Input Voltage</b>              | ± 100 V, ranges < ± 2 V ± 250 V, ranges ≥ ± 2 V  |
| <b>Overload Protection</b>                | ± 250 Volt non destructive                       |
| <b>Channel-to-chassis</b>                 | 250 Volt peak isolation                          |
| <b>Channel-to-channel</b>                 | 250 Volt peak isolation                          |
| <b>Maximum Common mode voltage</b>        | 250 Volt peak with isolated common floating      |
| Error and Noise <sup>(2)</sup>            |  |
| <b>Overall Maximum Static Error (MSE)</b> | ≤ 0.1 % of Full Scale ± 100 μV                   |
| <b>Gain Error</b>                         | ≤ 0.1 % of FS ± 100 μV                           |
| <b>Offset Error</b>                       | ≤ 0.1 % of FS ± 100 μV                           |
| <b>Noise (RMS)</b>                        | ≤ 0.02 % of FS ± 120 μV                          |

| Acquisition  |   |
|--|---|
| <b>Sample Rate</b>   | From 1 MS/s to 0.1 S/s  |
| <b>ADC Resolution</b>  | 16 bit (0.0015 %)   |
| <b>Anti-Alias Filters</b>  | Bypass, Time-, Frequency-domain optimized   |
| <b>Time Domain</b>   | 7-pole Bessel: optimal step response, < ± 0.2 V: 185 kHz (-3 dB)<br>≥ ± 0.2 V: 220 kHz (-3 dB)              |
| <b>Frequency Domain</b>  | 7-pole Butterworth: extended frequency response<br>< ± 0.2 V: 300 kHz (-3 dB)<br>≥ ± 0.2 V: 350 kHz (-3 dB) |
| <b>Digital Decimation Filters</b>  | Off, IIR or FIR   |
| <b>Time Domain</b>   | 6-pole Bessel style IIR, sample rate divided by 10, 20, 40, 100   |
| <b>Frequency Domain</b>  | 12-pole FIR, sample rate divided by 4, 10, 20, 40   |
| Transient Memory   |   |
| Standard 256 MS per card, shared by enabled channels.  |   |
| <b>4 channels</b>  | 64 MS per channel   |
| Triggering   |   |
| Each channel has individual dual-level trigger detection; selectable hysteresis, modes and qualifiers. |   |
| <b>Pre- and Post-trigger</b>   | 0 to full memory length   |
| <b>Trigger Rate</b>  | Up to 200 triggers per second, zero re-arm time   |
| <b>Resolution</b>  | 16 bit for each level (= 0.0015 %)  |

| STATSTREAM Real-time Analysis   |  |
|---|--|
| Each channel includes real-time extraction of Max, Min, Mean, Peak-to-peak, and RMS values. |  |
| Acquisition Modes   |  |
| <b>Sweeps</b>   | Triggered acquisition to RAM without sample rate limitations; for single or repetitive transients or intermittent phenomena  |
| <b>Continuous</b>   | Direct storage to PC or mainframe hard disc without file size limitations; triggered or untriggered; for long duration recorder type applications with up to 1 MS/s rate per channel; (maximum aggregate rate pending from mainframe configuration and PC) |
| <b>Dual</b>   | Combination of Sweeps and Continuous; recorder type streaming to hard disc with simultaneously triggered sweeps in RAM   |



(1) ICP refers to internally amplified sensors - low impedance, piezoelectric force, acceleration and pressure type sensors with built-in integrated circuits. ICP<sup>®</sup> is a registered trademark of PCB Group, Inc., Depew, New York.  
(2) Errors are listed for amplifier with filter (IIR or FIR)

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