

# DEWE-ORION-1616-10x DEWE-ORION-3216-10x

- 16 (32) simultaneous sampled single-ended channels at 100 kS/s each
- 16-bit resolution
- 1.6 (3.2) MS/s data throughput
- Two 32-bit synchronous counter / encoder
- 16 synchronous digital inputs
- 8 digital outputs
- Optional: two high speed CAN 2.0B controller, additional digital I/O and counter/encoder channels



### Recommended Usage:

- NET Solution
- Data Recorder
- Dynamic Signal Analyzer
- Transient Recorder
- Power Network Analyzer
- Combustion Analyzer

### Online Information:

[www.dewetron.info/orion](http://www.dewetron.info/orion)

| Model               | Analog input channels | Max. sampling rate / channel | Digital input channels | Digital I/O | Ext. Clock | Ext. Trigger | Counter Encoder TTL | Counter Encoder DIFF | CAN |
|---------------------|-----------------------|------------------------------|------------------------|-------------|------------|--------------|---------------------|----------------------|-----|
| DEWE-ORION-1616-100 | 16                    | 100 kS/s                     | 2 (8*)                 | 8           | 1          | 1            | 2                   | -                    | -   |
| DEWE-ORION-1616-101 | 16                    | 100 kS/s                     | 2 (8*)                 | 8           | 1          | 1            | 2                   | -                    | 2   |
| DEWE-ORION-1616-102 | 16                    | 100 kS/s                     | 10 (40*)               | 8           | 1          | 1            | 2 + 8               | -                    | -   |
| DEWE-ORION-1616-103 | 16                    | 100 kS/s                     | 10 (40*)               | 8           | 1          | 1            | 2 + 8               | -                    | 2   |
| DEWE-ORION-1616-104 | 16                    | 100 kS/s                     | 10 (40*)               | 8           | 1          | 1            | 2                   | 8                    | -   |
| DEWE-ORION-1616-105 | 16                    | 100 kS/s                     | 10 (40*)               | 8           | 1          | 1            | 2                   | 8                    | 2   |
| DEWE-ORION-3216-100 | 32                    | 100 kS/s                     | 18 (24*)               | 8           | 1          | 1            | 2                   | -                    | -   |
| DEWE-ORION-3216-101 | 32                    | 100 kS/s                     | 18 (24*)               | 8           | 1          | 1            | 2                   | -                    | 2   |

\* Without using counter inputs

| DEWE-ORION-1616-10x Series          |                                       |                                       |  |
|-------------------------------------|---------------------------------------|---------------------------------------|--|
| <b>Analog input</b>                 |                                       | <b>Counter / digital inputs</b>       |  |
| Number of channels                  | 16 (opt. 32) simultaneously sampled   | Counter modes                         | Simple event counting<br>Up/down counting<br>Gated event counting<br>Single period measurement<br>Pulse width measurement<br>Two pulse edge separation<br>Encoder input (X1, X2, X4 or up/down)<br>Frequency measurement |
| Input configuration                 | Single ended with remote sense        | Resolution                            | 32-bit   |
| Resolution                          | 16-bit                                | Time base                             | 80 MHz   |
| Effective number of bits            | 14.7                                  | Specification of Counter/Encoder TTL  | Level compatibility: TTL/CMOS<br>Maximum input frequency: 40 MHz   |
| Type of ADC                         | Successive approximation (SAR)        | Specification of Counter/Encoder DIFF | Input configuration: Differential<br>Input trigger level: Programmable from 0 to 40 V<br>Input coupling: DC or AC (HPF 1 Hz)<br>Voltage range: -40 V to 60 V<br>Maximum input frequency: 5 MHz                           |
| Sampling rate                       | 1 S/s to 100 kS/s per channel         | <b>Environmental</b>                  | Operating temperature: 0 to 50 °C<br>Storage temperature: -20 to 70 °C<br>Relative humidity: 10 to 90 %, non condensing<br>Maximum altitude: 2000 m<br>Pollution degree (indoor use only): 2                             |
| <b>Amplifier characteristics</b>    |                                       | <b>Power requirements</b>             | +3.3 V <sub>DC</sub> : 220 to 300 mA (depending on model)<br>+5 V <sub>DC</sub> : 710 to 1300 mA (depending on model)<br>+12 V <sub>DC</sub> : 0 mA  |
| Input ranges                        | ±1.25, ±2.5, ±5 or ±10 V              | <b>Physical</b>                       | Dimensions (not including connectors): 175 x 107 mm (6.9 x 4.2 in.)<br>Analog I/O connector: 68-pin SCSI-II PCB male   |
| Analog bandwidth (-3 dB)            | 100 kHz                               |                                       |  |
| Input impedance                     | 10 MΩ in parallel with 30 pF          |                                       |  |
| Overvoltage protection              | ±30 V                                 |                                       |  |
| Channel separation (cross talk)     | > 90 dB @ f <sub>in</sub> 1 kHz       |                                       |  |
| <b>Transfer characteristics</b>     |                                       |                                       |  |
| Gain (amplitude accuracy)           | ±0.02 %                               |                                       |  |
| Offset (residual DC)                | ±0.01 % of range, ±150 μV             |                                       |  |
| Gain drift (typ)                    | ±8 ppm/K                              |                                       |  |
| Offset drift (typ)                  | ±5 ppm/K of range                     |                                       |  |
| <b>Dynamic characteristics</b>      |                                       |                                       |  |
| Signal to noise                     | 89 dB                                 |                                       |  |
| THD (f <sub>in</sub> = 1 kHz)       | -86 dB                                |                                       |  |
| Crosstalk (f <sub>in</sub> = 1 kHz) | 93 dB                                 |                                       |  |
| Inter channel gain mismatch         | ±0.015 %                              |                                       |  |
| Inter channel phase mismatch        | 0.02° * f <sub>in</sub> (kHz) + 0.08° |                                       |  |
| <b>Maximum working voltage</b>      |                                       |                                       |  |
| Channel-to-ground                   | 10 V, installation category I         |                                       |  |
| Channel-to-channel                  | 10 V, installation category I         |                                       |  |
| <b>CAN</b>                          |                                       |                                       |  |
| Specification                       | CAN 2.0B                              |                                       |  |
| Physical Layer                      | High Speed                            |                                       |  |
| <b>Trigger / Clock I/O</b>          |                                       |                                       |  |
| Clock frequency range               | DC to 500 kHz                         |                                       |  |
| Level compatibility                 | TTL/CMOS                              |                                       |  |



DEWE-ORION-1616-102 with additional digital inputs



DEWE-ORION-3216-10x 32 channel PCI A/D board (1616 with additional inputs)



ORION-CAN-PANEL 9-pin DSUB connectors for CAN channel 0 and 1



ORION-1616-SYNC Synchronisation of PC based instruments with DEWE-ORION-xx16 cards



DEWE-ORION power supply connector for MDAQ modules