

TraNET® FE 408 DP



The family of modular TraNET data acquisition instruments provides turnkey solutions to many complex measurement problems. TraNET data acquisition systems are flexible, compact and portable. They can be used to solve in situ problems in many different applications like blast, ballistics, automotive, power or transportation systems. With the Continuous Data Recorder mode, a long duration event can be stored to disk, gap free in real-time, and analysed later. If applications require complex triggering across many channels, TraNET can help you capture sequential blocks of data, without any loss, using the unique ECR Event Controlled Recording mode. The powerful application software TranAX not only helps to quickly configure

many acquisition channels, but also provides the right post-processing tools to analyse complex waveforms.

The TraNET FE 408 DP is the largest device of the TraNET family and allows device configurations up to 32 channels in a very compact chassis. The Dust Proof (DP) chassis is optimized for dusty and muddy environments which makes it very suitable for outdoor blast measurements. The TraNET FE 408 DP can be equipped with up to four TPCE-8016-8S-DP or TPCE-2016-8S-DP data acquisition boards.

General Specification

Connection	Ethernet 1 GBit, RJ45 front connector
Harddisk	200 GB SSD
Power Supply	10 - 36 V DC Powerplug: SFV 40 0 (IEC 60130-9)
Power Consumption	~ 30 - 60 W (depend on the installed DAQ card)
Operating Condition	0 .. 35 °C Higher temperature possible when free air flow is applied over the instrument. Rel. Humidity: - Up to 31°C: < 80% , - 31°C ..45°C: decreasing to < 50% Max. Operating Elevation: 2'000m
Storage Temperature	-20 .. 60 °C
Channel Configuration	8 / 16 / 24 / 32 single ended
Recording Modes	Scope, Multi Block, Continuous, Event Controlled Recording (ECR), Dual Sampling Rate (with ECR only)
Digital IO's (TTL)	Trigger In, Trigger Out, External Timebase In, Disarm In, Armed Out, SyncClock Out Optional: 8 Digital Marker Inputs
Synchronisation	SyncLink Port, Pulse per Second Sync Optional: GPS
Software	TranAX 4 LE, TranAX 4 LabVIEW Instrument Driver C++/C#/Python API
Mechanical Specification	330 x 115 x 289 mm 6.1 kg (32 channels)

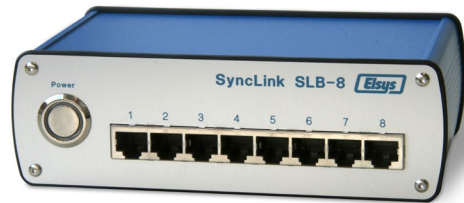


TraNET FE 408 DP Rear Side

The TraNET FE 408 DP has no fans to the outside and is completely passive cooled. Heat spreaders on the top and on the backside helps to keep the device temperature low.

The DC power input range is 10 to 36 V. This allows to power the device from a 12 V car battery or a standard 24 V power supply.

For even larger systems than 32 channels, several TraNET FE devices can be synchronized over the SyncLink synchronization interface.



SyncLink Synchronization Box

TranAX 4

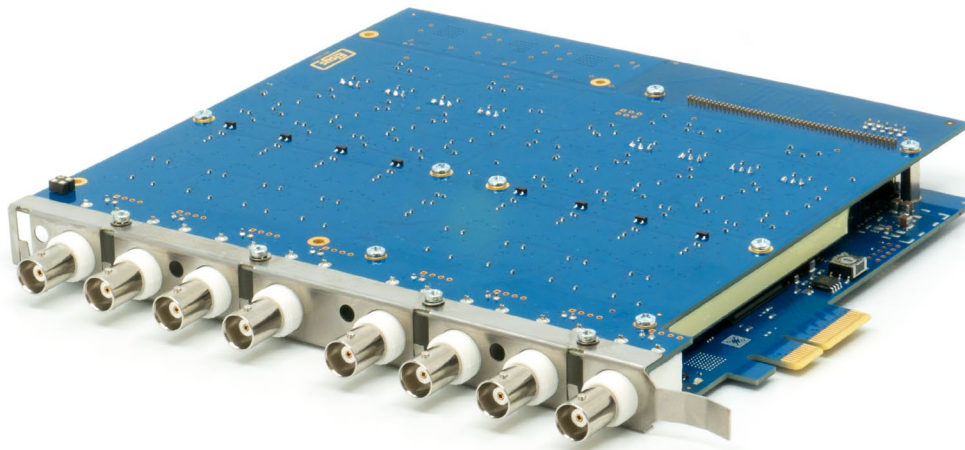
TranAX 4 is the universal data acquisition software from Elsys designed for all types of data acquisition cards and the turnkey TraNET data acquisition instruments.

Key Features

- Configures quick and easy many analog input channels, no programming required
- Data visualization in Multi-Waveform displays
- Several cursor for easy data readout and reporting
- X-Y data display
- FFT Analysis
- Measurement data - video synchronization
- More than 40 scalar functions to measure any significant waveform parameter on time or FFT curves
- Powerful formula editor for more than 60 mathematics functions, syntax highlighting, for-loops, array calculations, string manipulations, etc.
- Curve fitting (Polynomial regression)
- Autosequence-macro's for easy to set up, fast automated measurements
- English, German and Chinese version



Data Acquisition Cards



TPCE-2016-8S-DP & TPCE-8016-8S-DP

The data acquisition cards TPCE-2016-8S-DP and TPCE-8016-8S-DP are specially designed for the 408 Dust Proof device. They are optimized for low power consumption which is necessary for the dust proof chassis and high channel count of up to 32 channels.

Each channel is equipped with a programmable ICP/IEPE current source for powering active pressure or acceleration sensors. A status LED beside each BNC input indicates if ICP/IEPE is turned on and if a sensor is connected properly.

The DP series data acquisition card is available with either 20 MS/s or 80 MS/s sampling rate per channel and 14/16 bit resolution. The input range of each input can be configured individually from ± 100 mV up to ± 25 V or 0–200 mV up to 0–50 V. The on-board memory size is 64 MS per channel. For long time measurements, the signal can be streamed directly to the hard disc with the help of the continuous measurement mode. More complex triggered long time measurements with even dual time base can be done with the Event Controlled Recording mode (ECR).

Specification

	TPCE-2016-8S-DP		TPCE-8016-8S-DP	
Number of Input Channels	8			
Max. Sampling Rate (all channels are sampled simultaneously)	20 MS/s		80 MS/s	
Amplitude Resolution	16 Bit		16 Bit up to 20 MS/s 14 Bit up to 80 MS/s	
Memory per (Module)	8 x 64 MS			
Input Amplifier				
Input Ranges	± 100 mV, ± 200 mV, ± 500 mV, ± 1 V, ± 2.5 V, ± 5 V, ± 12.5 V, ± 25 V Offset Settings: 0 - 100 %			
Input Impedance	$1\text{M}\Omega$ (± 0.2 %) // 42 pF (± 5 %)			
Input Coupling	DC / AC / ICP (IEPE)			
ICP / IEPE Current Settings	4 - 20 mA software settable per channel			
Bandwidth	10 MHz		20 MHz	
Slew Rate (10 – 90 %)	50 ns		12.5 ns	
Low Pass Filter	100 kHz / 1 MHz 2nd Order Low Pass, software selectable per channel			
DC Range Error (\pm)	< 1 ‰ (after autocalibration)			
Offset Error (\pm)	< 1 ‰ (after autocalibration)			
Offset Drift (\pm)	< (0.100 ‰ + 0.1 mV) per °C			
Input Noise (\pm 100 mV Range) @ max. Sample Rate @ 5 MHz Sample Rate @ 1 MHz Sample Rate @ 100 kHz Sample Rate @ 10 kHz Sample Rate	< 50 μ Vrms < 30 μ Vrms < 20 μ Vrms < 9 μ Vrms < 5 μ Vrms		< 100 μ Vrms < 30 μ Vrms < 20 μ Vrms < 9 μ Vrms < 5 μ Vrms	
Signal to Noise Ratio SNR: @ max. Sample Rate @ 10 MHz Sample Rate @ 5 MHz Sample Rate @ 1 MHz Sample Rate @ 100 kHz Sample Rate @ 10 kHz Sample Rate	± 2.5 V 69 dB 72 dB 74 dB 80 dB 85 dB 87 dB	± 5 V 66 dB 69 dB 71 dB 76 dB 81 dB 81 dB	± 2.5 V 63 dB 72 dB 74 dB 80 dB 85 dB 87 dB	± 5 V 61 dB 69 dB 71 dB 76 dB 81 dB 81 dB
Channel Crosstalk @ 1 MHz	> 74 dB		> 74 dB	

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