

Data acquisition - Data Logger - Monitoring of Process

FrontDAQ with 10 channels analogical insulated 500V Category 2 (EN61010-1: 2001)

The FrontDAQ serie represents a new generation of products merging Data acquisition, data Logger and DAQ interface for the process. management FrontDAQ has been elected Product of the year in France for 2004

(Groupe Tests / Mesures - n°766).

Three specificities distinguish FrontDAQ:

1. Until 7700 Samples per second and per analog Input.

The FrontDAQ = 10 channels + 1 (cold junction) / => 10+1 converters (1 converter per channel) In a compact and portable Instrument. Low and quick phenomenons can be measured in the same time with different frequencies, resolutions, start and stop conditions, types of Inputs...

2. Its ability to connect with the client Information System without the classical "constraints":

No driver, exe, DLL... to install thanks to a Web server solution, TCP/IP for data and setup transfers, Compact Flash extensions, monitoring via your applications with our XML protocol (LabView, Flexpro...), Internal memory (SDRAM)... You just need an Internet Navigator and an IP Address.

3. Its capability to offer specific extensions for applications (Advanced Package Software / ASP)

as Numeric data acquisition, PWM, Patterns producers, Debit meter, Incremental coders...



FrontDAQ is an ideal solution for laboratories, monitoring of process, quality assurance applications, embedded applications, on sites measurements needing an insulation > 400V Cat2 between channels.

KEY FEATURES

Analogic and numeric

* 10 synchronised differential analog inputs (500V Cat2 between channels - 400V Cat2 between each channel and ground).

They can be used each one with :

Voltage: Standard (+/-10V), Thermocouple (type K/T/J/N/E/R/S/B) plus cold solder compensation, strain gauges.

Input types: physical or electrical values, pre-regulated sensors.

Current: 0-20 and 4-20 mA.

Resistance: RTD temperature sensors (100, 500, 1000) 2 or 4 wires, Potentiometer (0-2500 Ohms)

* 4 analog outputs, 20 TTL inputs/outputs.

* 20 Analog to Digital Convertors (ADC) per analog input in maximum 24 bit of resolution.

* Cards of interface: 10 connectors 7 pins.

Software and ressources

* Integrated Web server software (Frontsoft) for setup, monitoring and exports (data and setup files).

* Standard software (FNM) for the IP adress management of the FrontDAQ.

* Time-stamping of files and data exports with a large range of formats (ASCII, CSV, Excel, simplified, XML..).

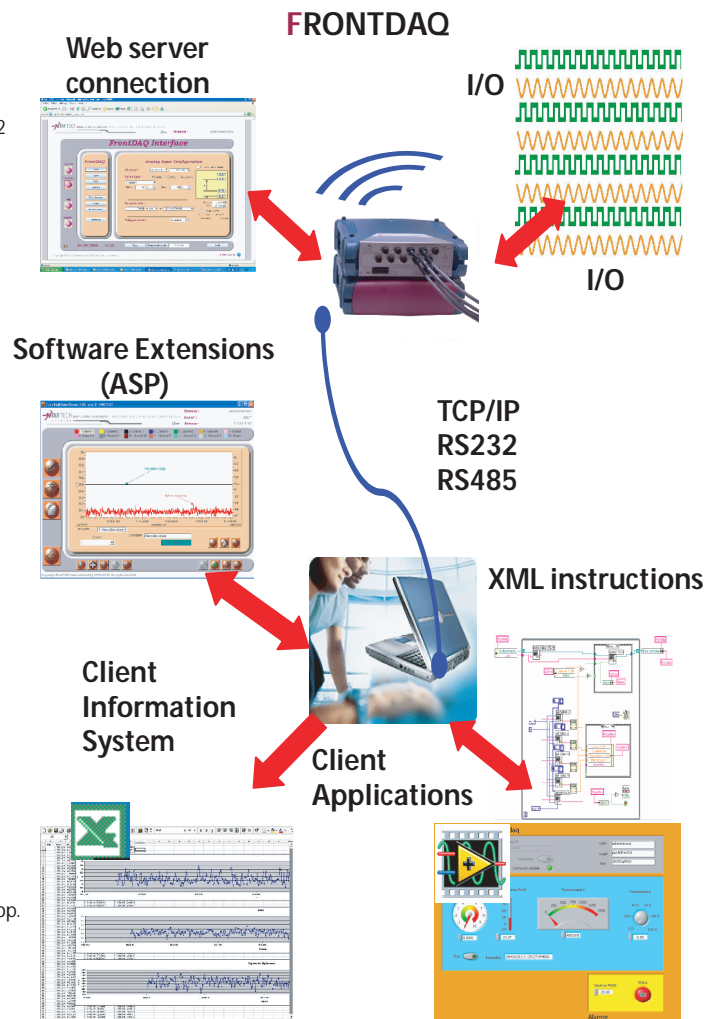
* Internal memory (SDRAM): up to 930 KSamples per channel (18.600.KSamples for 20 channels with 256 Mb).

* External memory extension: Compact Flash cards, Micro drive,...

* Readings can be scaled and viewed in real time on a Network Workstation or in laptop.

* Communication: TCP/IP (RJ45 10/100 T basis including WiFi stations...), RS232, RS485, USB, communication ports and Compact flash setting, GSM extension, GPS extensions, Wireless.

* Standard electric power supply or portable and rechargeable battery.



FrontDAQ Iso specifications



ANALOGIC INPUTS (20)		RANGE	PRECISION (50 SAMPLES / SEC BASIS)			FULL SCALE									
TYPE OF INPUTS		10 differential channels (+1 channel Cold Junction)													
COMMON MODE SAMPLE FREQUENCY (An ADC 24 Bits per channel)		500V Cat 2 between channel and 400V Cat2 between each channel and the ground.			<table border="1"> <tr> <td>Ranges</td> <td>Precision</td> <td>Resolution</td> </tr> <tr> <td>±15 mV</td> <td>±10 µV</td> <td>100 nV</td> </tr> <tr> <td>±10 V</td> <td>±100µV</td> <td>50 µV</td> </tr> </table>	Ranges	Precision	Resolution	±15 mV	±10 µV	100 nV	±10 V	±100µV	50 µV	
Ranges	Precision	Resolution													
±15 mV	±10 µV	100 nV													
±10 V	±100µV	50 µV													
FREQUENCY (An ADC 24 Bit per channel)		Until to 7680 Sample/Sec per channel. Channels are synchronized between them.			From 13 to 18 Bit according to the sampling frequency.										
DATA TIME-STAMPING		YYYY/MM/DD/HH/mn/ss:000000													
VOLTAGE		Range 1: From ± 15mV to ± 1 V in 7 ranges. Range 2: From ± 1V to ± 10 V in 4 ranges.			<10 µV	From ± 20mV to ± 1,25 V From ± 1,25V to ± 10V									
IMPEDANCE		Range 1: 100 kOhms . Range 2: 14 kOhms .													
THERMOCOUPLES															
J (Iron – copper / nickel)		from -180°C to 750°C			± 1,2°C										
K (Nickel chromium / nickel aluminium)		from -180°C to 1300°C			± 1,1°C										
T (Copper – copper / nickel)		from -250°C to 400°C			± 0,9°C										
N (Nickel - chromium silicon / nickel silicon)		from -270°C to 1300°C			± 1,7°C										
E (Nickel - chromium / Copper - nickel)		from -40°C to 900°C			± 0,7°C										
Others thermocouples available with FrontDAQ : R, S, B															
STRAIN GAUGES (1/1, 1/4, 1/2)		Cf. Range of Voltage			± 50 µStr. + 5 µStr. of drift / °C.										
RTD (100, 500, 1000)		RTD100 (from -200 to 850°C) - RTD500 (850°C) RTD1000 (400°C)			RTD100: ±0,01°C - RTD 500: ±0,05°C RTD1000: ±0,03°C										
RESISTANCE		From 35 to 2400 Ohms in 7 ranges			±0,1 Ohm From ±38,5 to ±2500 Ohms										
ANALOGIC OUTPUTS (4)															
TYPE OF OUTPUTS		0-10V / 16 Bit			0,5%										
TTL I/O (20)		"0"			"1"										
TTL in Input: Max of Current: *0,5V /+7V		0,8 V			2 V										
TTL in Output: Max of Current: * ± 20mA		0,1V à 50 µA 0,36V à 8 mA			4,4V à 50 µA 3,9V à 8 mA										
TRIGGERS															
TYPES 5 types of triggers available. Their setup is non-depending of the analog input setup. Mono or multiple releases per channel															
Numeric Trigger		The conditions are checked according to the frequency associated with each channel													
Analogic Trigger		Channel 20 coupled with an Analogic output for a reference voltage standard													
TTL I/O		Among 20 TTL I/O - Power supply provided													
Counters		Among the 4 analogic outputs													
Pre, PostTrigger conditions		Parameter setting independent of the triggers - defined per channel													
Trigger parameters		Falling and rising edge, duration of sampling, number of samples,...													
COUNTERS Dedicated counters (shared with TTL I/O) / 4 counters 12 bit each. Connected in serie : a counter 48 bit.															
CLOCK Precision: 3,85 10 ⁻⁰⁷ (from 0°C to 50°C)															
POWER SUPPLY 12-28 V (9-32V)		POWER CONSUMPTION 15 Watts per hour out of sensors feeding			HR 85% max without condensation										
OPERATING ENVIRONMENT -10°C to + 50°C															
MEMORY															
INTERNAL (SDRAM) Stop when full or overwrite		128 Mb: 763.000 Samples per channel 256 Mb: 1.690.000 Samples per channel			EXTERNAL Compact flash cards 3,3V - Type 1, 2, 2+										
DIMENSION AND WEIGHT		W211,5 x D194,7 x H57 mm - 1200 grams approx.			ENCLOSURE MATERIAL ABS (UL V0)										
ANALOG-DIGITAL CONVERSION TYPE: Sigma-Delta RESOLUTION: from 18 bit efficient (until 150 Samples per sec and per channel) to 13 bit (7680 Samples per sec and channel)		PROCESSOR INTEL PXA 255 - 400 MHz			OPERATING SYSTEM Embedded Linux										
					SERVER WEB Apache										
COMMUNICATION		TCP/IP (SMTP, DHCP) / WiFi (802.11g)/USB/ RS232, RS485 Compact flash setting in standard			Compact flash extensions for communication (with ASP option): GSM, GPS										
FILTERS ANTI-FOLDING UP AND BAND-WIDTH Band-Width for 7680 Samples/sec: BW-3db= 2,2 KHz Numerical Filters anti-folding up: SIN ³ cardinal + FIR 22 stages adjusted with approximately 30% of the sampling rate.															
SOFTWARE (STANDARD) FrontSOFT - Server Web soft in the FrontDAQ memory. - Access via an Internet Navigator - Available without driver, DLL,...). - SetUp, monitoring, import-export data files - Exports: ASCII, CSV, Excel, XML... - Available for Windows, Linux, MacOS. FrontDAQ Network Monitoring (FNM) - TCP/IP monitoring through IP address (Network, standalone workstations). - Available for Windows NT, 2000, XP. XML protocol to use with clients' applications.		SOFTWARE (OPTIONS) FrontDAQ Data Viewer (FDV) - Tracer multicurves. - Limited version with 1 curve and all functions in standard. - Available for Windows NT, 2000, XP. Advanced Program Software (ASP) - Library of extensions for specific needs: * PWM, Patterns producer. * Acquisition of numeric data. * Evoluted counters, debitmeters, incremental coders, ... * Compact flash monitoring			ACCESSORIES - Externable rechargeable battery (10h00 - Nimh). - Wires: 1,5 meter (secured), for integration (extra flat). - Male connectors 7 pins - RTD 100 for Cold soldering. - Additional power supply unit. - Transportation box. - Device to fix FrontDAQ in an equipment (as unit of tests...).										
					CONFORMITY - CE compliant. - Tests and calibration certificates (COFRAC external laboratory).										