imc CRONOS*flex*

FRAMELESS MODULAR MEASUREMENT SYSTEM FOR ELECTROMECHANICAL TESTING

Expandable
Flexible
Fast

imc

integrated measurement & control

imc CRONOS*flex* – Flexible Modularity for Mechanical Test and Measurement

Flexibility for multi-channel, mixed-signal recording in-vehicle, including CAN-bus

Flexibility for the ever changing demands of day-to-day testing in the field or on the bench

Flexibility for remote monitoring in both centralized and Ethernet distributed networks

FLEXIBILITY UNLEASHED

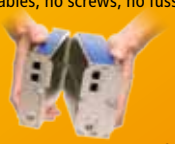
- Frameless modular system easily adapts to changing test requirements
- Centralized or distributed, portable or stationary, put the pieces where you need
- Simultaneous recording of analog, digital, and vehicle-bus data, plus video
- Integrated signal conditioning for most physical sensors
- High precision, 24/16-bit resolution synchronous digitizers
- Extensive real time processing capabilities, including synchronized open and closed-loop measurement and control
- Networked connectivity (Ethernet, WiFi/WLAN, 3G/4G wireless), or standalone operation
- Graphical, menu-driven operation & configuration – no programming required
- Streamlined configuration through user defined sensor and layout databases
- Real time state-based measurement and control framework for test automation
- Automated workflow, from configuration and operation, to analysis and test reports
- Workgroup ready with user-level group access permissions and administration
- Flexible single-user and volume licensing for software elements

Frameless Expansion = *Flexible Modularity*

imc CRONOS*flex* combines the stability of imc's proven data acquisition platform, with an unprecedented frameless expandability: simply click-on additional input modules as you need them. Or connect distributed modules via standard Ethernet cables. Or both.

SIMPLY CLEVER:

The Click Mechanism for the imc CRONOS*flex* is appropriately named: simply "click" additional modules to expand your system – no cables, no screws, no fuss!



Through imcStudio, CRONOSflex automatically recognizes the additional channels, and alters the setup screens accordingly.

imc CRONOS*flex* gives you a degree of flexibility never before possible!

From test stand and bench top, to mobile testing environments, imc CRONOS*flex* provides you with the versatility you need for day-to-day changes, over a diverse range of measurement and control tasks, but without the need to make any sacrifices of performance or ease of use.

With sample rates of up to 100 kSps per channel, a system throughput of up to 2MWords/s, and the ability to seamlessly synchronize multiple imc instruments, the possibilities are nearly limitless - from 4 to over 4,000 channels.

And at its heart, the scalable imcStudio software: providing intuitive system configuration, simple to implement graphical display and reporting, and both real time and PC-based calculation power... Flexibility Unleashed!

REAL TIME POWER:

Built-in Connectivity
- CAN-bus
- LIN
- FlexRay
- ARINC

Synchronous Control
- Digital Inputs
- Digital Outputs
- Speed / Incremental Encoder
- Analog Output
- PID Control

Centralized or Distributed? Why not both?

Both are possible when you are using a modular hardware and software design platform with virtually unlimited possibilities.

The flexibility of imc CRONOS*flex* starts with the system topology: modules may be clicked together to form a unit, or may be distributed via standard Ethernet cabling. Or both!

With no loss of throughput, synchronization, or capabilities, a centralized, distributed, or hybrid imc CRONOS*flex* system gives you the power of a conventional chassis-based system, but with the frameless adaptability to add, replace, or relocate modules wherever it is convenient for you, your signals, and your testing.

Based on the EtherCAT standard, interconnection between the imc CRONOS*flex* Modules is both fast and synchronous. Remote modules may be powered via the standard CAT5 Ethernet cabling and located up to 100 m away (or further with fiber optic extenders).

Voltage & High Voltage | Current | Strain Gauge | IEPE/ICP Acceleration | Audio | Temperature | Frequency Speed/Angle | Digital Input/Output | Analog Output

UNPLUGGED: STANDALONE MODE

- PC independent startup and data logging operations
- Onboard data storage: flash card or external USB drive
- Single "autostart" or operator selected startup configuration from internal or removable flash storage
- Intelligent power supply with optional short (UPS) or long-term power (LiIon Battery), for reliable operation and no data loss, even in the event of power failure

INTELLIGENT: IMC ONLINE FAMOS

- Data reduction, advanced digital filters and smoothing
- Limit/target monitoring, event triggering and alarms
- Signal analysis, FFT-analysis, statistical reduction,
- Open and closed-loop control, including PID
- Advanced computations including rotational order analysis, fatigue classification and class-counting, real time mechanical and electrical power measurements

UNIVERSAL: SIGNAL CONNECTIONS

By integrating signal conditioning with digitizers, imc CRONOS*flex* Modules support direct connectivity of virtually any electromechanical transducer today, plus

- imc's unique breakout connectors provide quick connections for any sensor in the lab or the field, and optional support for automatic sensor recognition (TEDS)
- High resolution quadrature incremental counter inputs for the measurement of frequency, RPM, angle, displacement, velocity, including resolver signals
- Synchronous recording of Field bus signals including CAN-bus (including OBD-II, CCP, KWP2000, and other ECU protocols), FlexRay, LIN, ARINC, XCPoE and other speciality data buses

imcStudio - Testing Your Way

SIMPLIFY DAQ:

At Your Fingertips
- Easily Tailored GUI
- Tiered Access Control
- Workflow Automation
- Complete Test Control
- No Programming Required

Everything You Need
- Hardware Configuration
- Intuitive Live Data Displays
- Test Automation
- Signal Processing & Analysis
- WYSIWIG Test Reports

Once upon a time, running a test meant turning a few knobs, and watching a couple of gauges. Test Reports were simple. Software tools came along giving us more features, but at the cost of exponentially increasing complexity.

Take back control! **imcStudio** offers a comprehensive solution which relieves you from complex programming, while providing a quick and easily customizable user experience, fully integrated into **imc CRONOS*flex***.

Whether you are a development engineer gathering your own data in the field, a test engineer creating a multi-user test cell operator interface, or an engineering manager responsible for enterprise level measurement and control strategy, **imc** provides a cross-application, multi-use & balanced solution all under one roof: **imcStudio**.

Additional information: **www.imc-berlin.com/cronosflex**

HOTLINE

Questions on Setup and Operation, Repairs, Updates, Calibrations, and System Upgrades

APPLICATIONS

Project Consultation, Development Planning, Application Support, Test Stations, Integration and Custom Hardware and Software Solutions

TRAINING

General and Special Topic Product Training and Seminars

SALES

Application Consultation, Product Configuration, Proposals and Quotations

INTERNATIONAL CONTACTS

www.imc-berlin.com/distributors

imc Meßsysteme GmbH

Voltastraße 5
13355 Berlin
Germany

Telephone +49 (0) 30-46 70 90-0
Fax +49 (0) 30-46 31 576
E-Mail info@imc-berlin.de

www.imc-berlin.com

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