

imc C1

the ultra-compact measurement data acquisition box
with all-purpose measurement channels

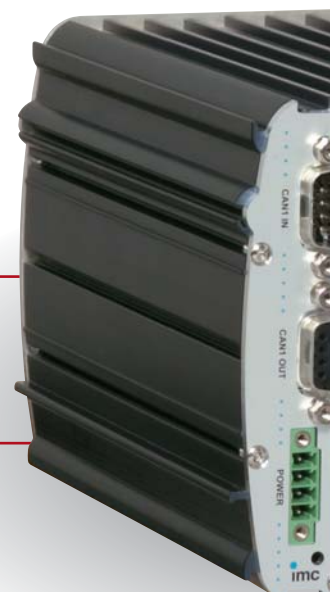


imc C1 – THE ULTRA-COMPACT MEASUREMENT DEVICE

with 8 measurement channels for voltage, current, temperature, etc.



Display Connection



Wireless LAN

imc C1 is a surprisingly affordable, versatile and ready-to-measure data acquisition device. It can operate either PC-aided or independently as a smart data-logger for diverse applications in physical measurement engineering. Each of its eight channels is equipped as a fully conditioned all-purpose input. Along with voltage and current, thermocouples, PT100, resistance and strain gauge measurement bridges can be connected directly.

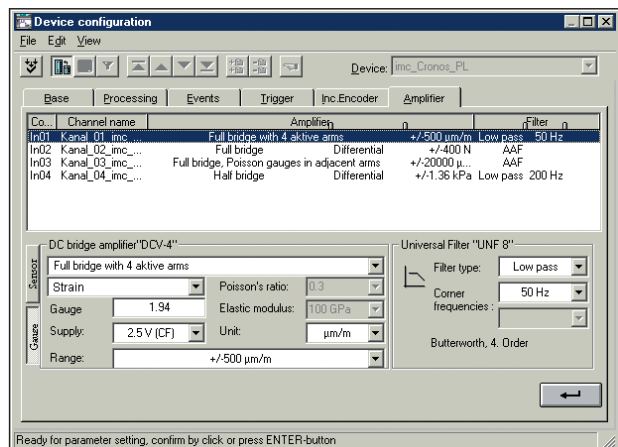
imc C1 provides a selection of supply voltages for sensor feeding, which can be set by software between 5 V and 24 V. Additionally, imc C1 comes with a CAN-Bus interface with which measurement and status channels can be read out of the CAN-Bus. Up to two CAN nodes can be connected. A maximum of 512 analog and digital channels can be recorded in parallel and synchronously.

Simple, complete and real-time compatible

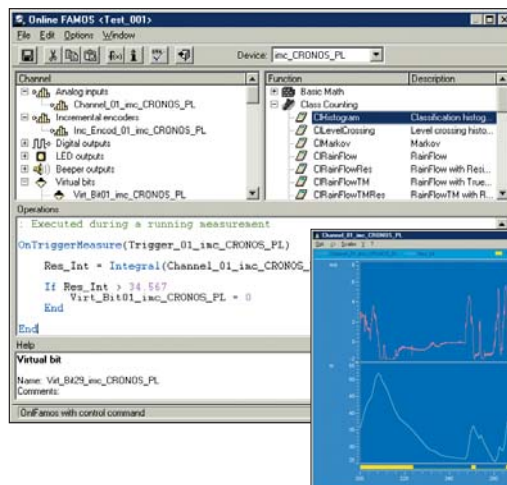
imc's C1 is equipped with the operating software imc Devices, which completely covers the tasks of setting parameters and capturing, displaying, and storing data. If display of measured data during a running measurement is required, it can be performed by freely-configurable curve windows.

The Personal Analyzer

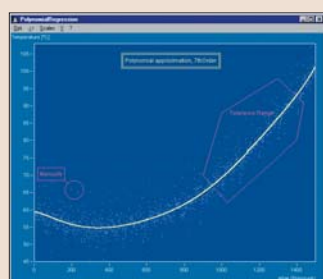
imc C1 comes standard with Online FAMOS, which makes the device a Personal Analyzer. Any kind of mathematics or statistics calculations can be carried out on measurement channel data in real-time. Typical tasks such as min, max, mean value or limit monitoring can be performed at the push of a button. But even much more complex algorithms or control functions can be realized. Complete measurement documentation can be achieved using the built-in Report Generator.



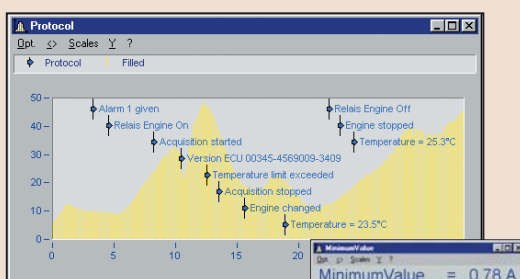
imc operating software



Calculation and control instructions defined in plain language. Carried out in real time with simultaneous display of results

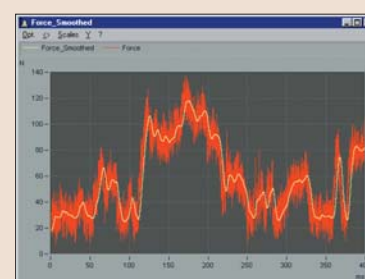


Measurement curve derived from single values by polynomial approximation, with tolerance band



Measurement curve with report data

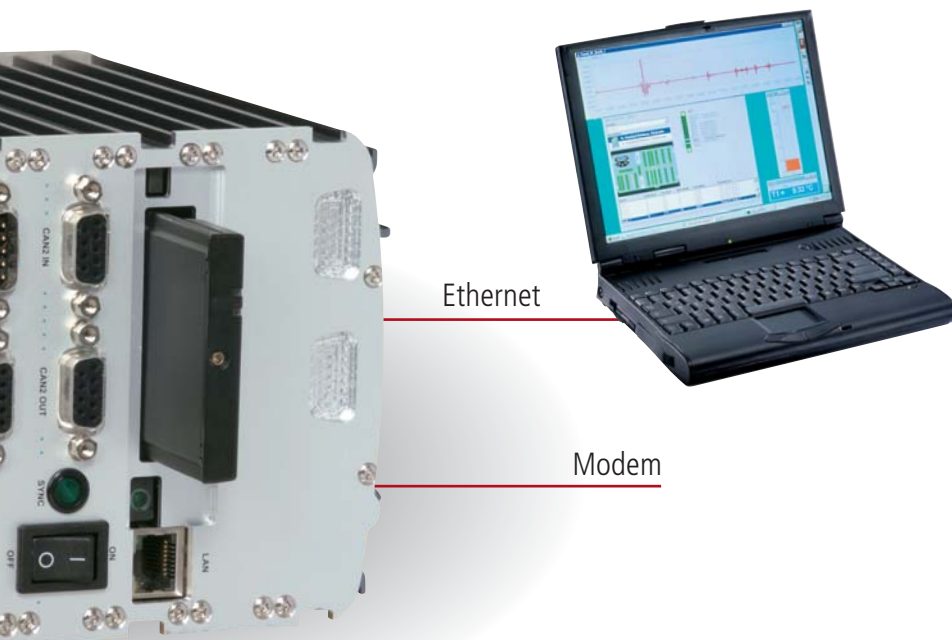
Single values
MinimumValue = 0.78 A
MaximumCurrent = 1.38 A



Multiple curves in a window

MEASUREMENT DATA ACQUISITION BOX

Temperature and strain gauges, plus CAN-Bus interface



- imc C1 advantages**
- Intelligent data logging (also without PC)
 - Compact and rugged
 - Immediate readiness for measurement
 - 8 universal input channels for voltage, current, temperature, resistance and strain gauges
 - Sensor supply
 - CAN-Bus interface
 - Multiple devices can be networked

Maximum operating reliability with "Plug & Measure"

"Plug & Measure", imc's measurement concept based on TEDS (Transducer Electronic Datasheet), provides maximum operating reliability. It extends the IEEE P1451.4 from smart sensors to any sensors. Upon request, clip-on TEDS memory chips can be connected onto any sensor connection cable. imc C1's parameters are then set automatically either directly from the TEDS or using the sensor database built into the operating software.

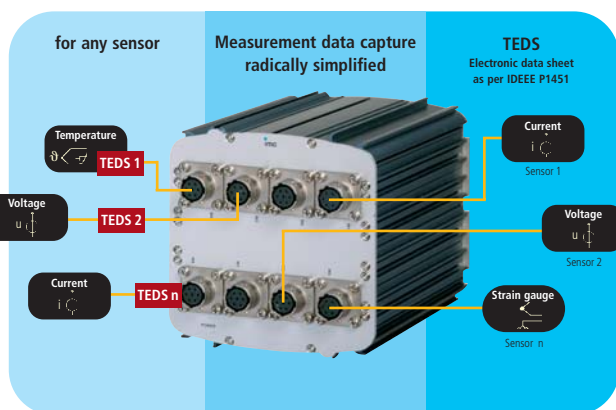
Special strengths in mobile applications

The imc C1 is a very rugged, intelligent data-logger for tough mobile applications. "Plug & Measure" makes it extremely reliable and simple to handle measurement tasks. Its high shock resistance and its optional extended temperature range, with condensation protection, offers resistance to mechanical and temperature stresses.

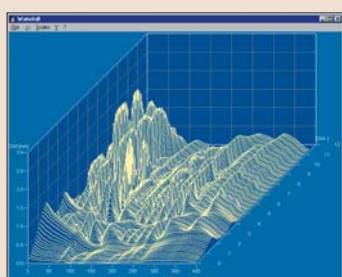
In PC-independent operation, as a smart data-logger, imc C1 requires less than 25 W (including sensor-supply). It is connected via a wide-band 9 - 36 V DC power unit with a backup battery. Short current outages are buffered. If an outage lasts longer, imc C1 discontinues measurement, closes the measurement file automatically and goes on standby. imc C1 has the ability to start itself and resumes operation automatically when a long power outage ends.

imc C1 is also compatible with remote operation in conjunction with a directly connectible external modem. imc C1 comes with its own memory, which is independent of the PC. In PC-independent operation, imc C1's data are stored internally on a removable drive (PCMCIA flash card).

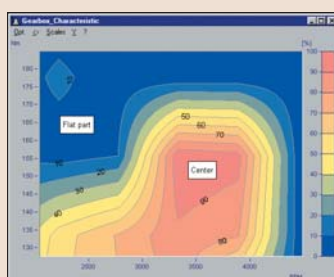
The data format is fully documented so that data export into any program can be achieved. For more advanced analysis of measurement data, we recommend FAMOS, which wins users over with its power and user-friendly operation.



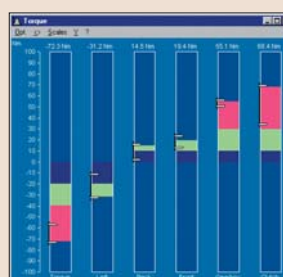
imc C1 finds use in vehicles, plants and machinery, test stands and laboratories.



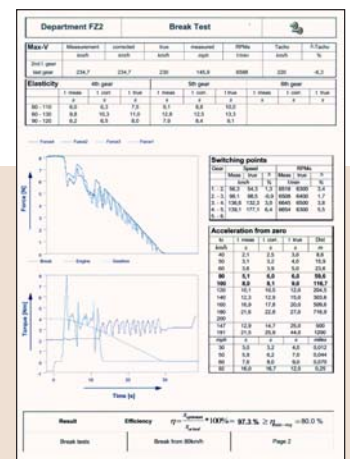
Waterfall display



3-D ISO contours



Bar charts with slave pointers



Manual, partly or fully automated generation of measurement reports

Technical specs

Housing, interconnections

- Compact, highly rugged housing, 95 x 111 x 185 (WxHxD in mm)
- Weight typ. 1.0 kg
- PC-connection via Ethernet TCP/IP 10/100 M bit
- CAN-Bus connection (2 nodes) via DSUB connectors
- Analog signal connection to device via eight robust Litton VEAM sockets as per MIL-C-26482
- 8 x connector terminal sets for eight channels, Litton Veam crimp (solderable) contacts, cable glands for cable diameters of up to 3 mm. Additionally, eight PT100 units (which can be soldered into the connector), for precise thermocouple measurements in fast fluctuating ambient temperatures
- Extra DSUB-connectors for an optional modem, DCF or GPS radio clock and external hand-held terminal
- SMB-connectors for synchronization of multiple devices (imc C1 or other imc devices). Any number of imc devices can be operated in parallel and fully synchronized via an Ethernet TCP/IP network.

Current supply, operating conditions

- 10 - 36 V DC-supply with backup battery (USV) or 110 V/230 V via included mains adapter
- USV buffer duration 30 s
- Automatic measurement operation with Autostart after power outage
- Automatic charging control
- Automatic data saving upon power outage
- Power consumption < 25 W (including sensor supply)
- 5 - 40° C, 5 - 95 % rel. humidity, shock resistance 30 g pk over 3 ms

Software package

- imc operating software "imc Devices" for setting parameters, visualization and data storage with curve windows for online visualization and Report Generator for composing measurement data documentation. For MS Windows '98, -2000, -XP
- Online FAMOS for extensive real-time, calculation and process control functions (Personal Analyzer)
- LabVIEW®, VIs

Measurement channels

- 8 differential, analog all-purpose inputs for the user's choice of: voltage, current, temperature, resistance, strain gauges.

Voltage: ± 5 mV to ± 50 V

Current: ± 100 μ A to ± 50 mA, ground-referenced with built-in shunt
Measurement uncertainty < 0.1 %

Pt100: - 200 to + 850 °C, I= 0.3 mA
Measurement uncertainty: < 0.1 %

Resistance: 0 to 1 kOhm
Measurement uncertainty: < 0.1 %

Thermocouples: choice of Types J, K, R, S, B, T, E, L, N
- 200 °C ... +1100 °C
(or depending on type, corresponds to input range of ± 50 mV)
Measurement uncertainty: < 0.5 K

Strain gauges: 1/4, 1/2 and 1/1 bridge with calibration resistor (shunt) and stabilized bridge excitation with ± 1 mV/V to 1000 mV/V. Quarter bridge by means of either internal 120 Ohm (alternatively: 350 Ohm) completion resistor or external completion

- **Per-channel anti-aliasing filter**
Low-pass, Butterworth, 6th order
10 Hz to 10 kHz, adjusted in 1-, 2-, 5-steps
- **CAN-Bus interface** for reading out measurement and status channels from the CAN-bus - 2 CAN nodes
- Synchronized and time-correct saving of all analog and digital channels
- Up to 512 channel can be administered

Errors and changes excepted

Sensor supply

- Sensor supply up to 3 Watt
5 V, 10 V, 12 V, 15 V, 24 V software-selectable

Measurement specs

- Sampling rates of up to 50 kHz per channel, selectable in 1-, 2-, 5 steps
- 14 kHz bandwidth
- Aggregate sampling rate 400 kHz
- 16-bit resolution (with internal 24-bit processing)
- Extensive, intelligent trigger functions
- Limit monitoring, min, max, mean value tracking and much more
- Personal Analyzer with built-in signal processor and Online FAMOS for extensive real-time-, calculation- and control functions

Data storage

- Choice of removable data carrier (optional) and/or on PC
- Any desired memory depth, limited only by hard drive, with pre- and post-trigger
- Circular buffer operation
- Synchronized, multiple-triggered data capture with different sampling rates for each channel
- Optional PCMCIA Flash removable drive

Miscellaneous

- "Plug & Measure" - capable signal inputs
- PC-independent measurement operations
- English manual
- Manufacturer's calibration certificate as per EN ISO 9001

Optional expansions

Services

- Extensive system maintenance options after purchase
- Commissioning and system introduction
- Calibration
- System inspections / revisions
- Software maintenance
- Device and topical training

Hardware options

- Additional connectors for 3 mm and 6 mm cable diameters
- Custom signal interconnections (upon request)
- Extended temperature range including condensation proofing
- External analog, GSM, ISDN modem (PPP) for remote measurement operation
- External terminal for display of measurement data and status messages
- DCF 77 or GPS real-time clock
- External GPS signal receiver
- Wireless LAN PCMCIA card instead of PCMCIA Flash removable drive

Software/firmware options

- Class-counting package (as device firmware or PC software)
- Order-tracking analysis package (as device firmware or PC software)
- Spectrum analysis package (as device firmware or PC software)
- Signal analysis software for PC
- Filter Design package
- Video-kit
- ASAM-ODS Browser
- COM Interface for programming in any programming language
- LabVIEW(r), interface

It would go too far to list the full range of available options and expansions. Contact us to learn if we can provide any other expansions you may want.