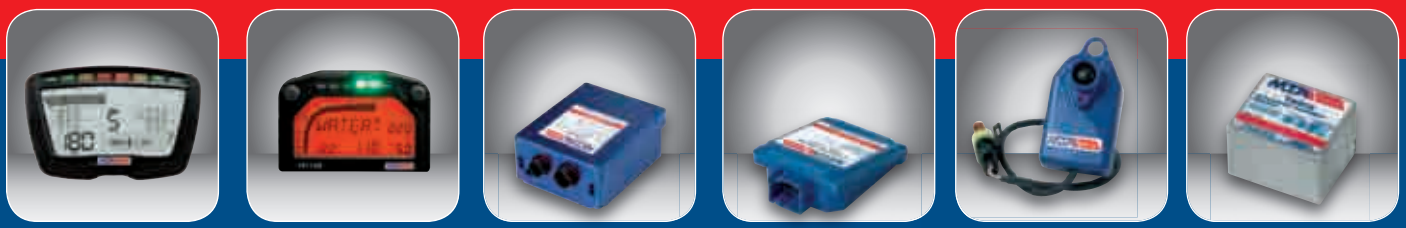
MTA corse

RACING PRODUCTS CATALOGUE



2010

MTA corse

È una lunga storia di successi quella che lega Digitek, azienda recentemente acquisita dal nostro gruppo, al mondo delle competizioni motoristiche a livello mondiale. E, proprio forte del patrimonio di conoscenze acquisite, nasce oggi MTA Corse e questo suo catalogo interamente dedicato ai prodotti destinati ai team delle 2 e 4 ruote. La prima attività nelle competizioni risale al 1984 con un sistema di visualizzazione dati sviluppato specificamente per le vetture di Formula 1. Il prodotto negli anni evolve e solo due anni dopo vede la luce il primo sistema al mondo di acquisizione, visualizzazione e scarico dati, noto come telemetria, per il mondo delle competizioni. Negli anni, i sistemi di telemetria sviluppati subiscono un costante miglioramento, diventando più compatti e leggeri e le funzioni di acquisizione vengono integrate sulla centralina controllo motore. È del 1996 l'inizio di un poderoso sviluppo atto a trasferire la visualizzazione di alcune funzioni sul volante, che porterà alla realizzazione di un volante computerizzato con il quale il pilota può monitorare tutte le funzioni della vettura e intervenire sul setup e sui parametri di funzionamento motoristici. Sono sempre di questi anni l'evoluzione della telemetria con l'utilizzo di radio-modem, i progetti relativi al traguardo ottico a infrarossi che permette alla sessione di acquisizione di essere suddivisa in laps per una migliore analisi dei dati e la nascita di moduli di espansione legati all'acquisizione.

Digitek, our Group's recent acquisition, has a long history of success marking its long-standing involvement in the world of motor racing. This huge knowledge base provided the foundation for the newly born MTA Corse and its dedicated product catalogue for automobile and motorcycle racing teams. Digitek's debut in the racing world dates back to 1984, when they developed a data display system specifically designed for Formula 1 cars. As the product evolved through the years, the world's first telemetry system for motor racing, which enabled data collection, display and download, surfaced as little as two years later. Over the years, telemetry systems underwent steady improvements with increasingly compact and lightweight design, and data acquisition was eventually incorporated into Engine Control Units. 1996 marked the start of massive development efforts aimed at relocating the display of certain functions at computerized steering wheels that would enable drivers to monitor all car's functions as well as adjust setup and engine parameters. The same period marked a further evolution of telemetry systems with the introduction of radio modems, electronic finish line projects using infrared technology to break down data acquisition sessions into individual laps for more accurate data analysis and the development of expansion modules for data acquisition.

Arrivati ai giorni nostri, possiamo affermare che MTA corse è oggi una realtà capace di sviluppare e produrre sistemi completi di acquisizione, visualizzazione e scarico dati dalle performance e affidabilità straordinarie, la cui tecnologia attinge ad un'esperienza ultraventennale. L'offerta, varia e modulare, sviluppata per andare incontro alle specifiche esigenze delle competizioni a tutti i livelli si compone di: acquisitori, video logger, cruscotti -utilizzabili sia stand alone che integrati nel volante-, moduli di espansione per l'acquisizione di parametri quali temperature, accelerazioni, velocità e RPM; moduli di interfaccia con la rete CAN della vettura; moduli GPS, tramite i quali è possibile la ricostruzione del percorso effettuato dai mezzi in pista.
A completamento dell'offerta, il pacchetto DataView specificatamente realizzato per lo scarico e l'analisi dei dati acquisiti.

Coming back to present days, MTA Corse now has the capability of developing and manufacturing full-blown data acquisition, display and download systems offering extraordinary performance and reliability, based on well-proven technology as a result of over two decades' expertise. Its exhaustive, modular range of products covers the specific needs of all kinds of competitions and includes: data loggers, dashboards - both stand-alone and integrated in the steering wheel-, expansion modules for recording such parameters as temperatures, acceleration, speed and RPM measurements; CAN network interface modules; GPS modules to plot the vehicle's path on the track.
To complete the offer, the DataView Kit, specifically realized to download and analyse the acquired data.


START
TRQ
RADIO
EXIT
PED
DRINK

PHOENIX

- **Special Functions:** Analogue/digital inputs, CAN and internal channels, Automatic Gear Recognition (Rpm/Speed), Lap Time, List Memo, Internal GPS, Data Acquisition in Full Mode
- **LCD:** Segment + Dot Matrix (144x48); 3 Pages
- **Communication Lines:**
  CAN 1, B/C std, sw cfg.baudrate,
  USB 1, 12 MBit/s
- **Track Marker Input:** TTL, rising edge, EMI filter
- **RPM input:** 1, 0÷5V, Max frequency 2kHz
  Sensor types: Hall effect / ignition coil sensor
- **Speed input:** 1, 0÷5V, Max frequency 2kHz
  Sensor types: Hall effect / ignition coil sensor
- **Accelerometer:** internal, 3 axis +/-6g
- **Digital inputs:** 4, 0÷5 V, 2 µs, 10KΩ, max 2000 Hz
- **Digital outputs:** 4, 0-5V
  Type: 2 Open Collector, Max 50 mA
  2 Low Side, Max 1 A
- **Analogue inputs:** 4, 10 bit (stand alone mode)
  8, 10 bit (full mode)
- **Voltage References:** 2, 5 Vdc, 50 mA , internal temperature sensor
- **Supply voltage:** 9÷16 Vdc, Typ. 215mA
- **Operating temperature:** -20 +70°C
- **Material:** PMMA/PC ABS
- **Protection Level:** IP64
- **Dimensions / Weight:** 161x104x52 mm / 200 g
- **Connectors:** DUO TWIN FCI 17284080
- **Note:** Tx elaborated data over CAN

PC software:	Easy or Standard(hw-key)
Max acquisition throughput	16 KB/s
Max laps length	2MB
Max channels	32 (up to 128)
Internal data Memory	16 MB (up to 64 MB)
Frequency range	1 Hz to 500 Hz

FALCON

- **Special Functions:** Analogue/digital Inputs, CAN and internal Channels, Automatic Gear Recognition (Rpm/Speed), Lap Time, List Memo
- **LCD:** Segment; 3 Pages
- **Communication Lines:**
  CAN 1, std B/ std C, sw cfg. baudrate (default: std C,1MBit/s)
- **Track Marker Input:** TTL, rising edge, EMI filter
- **RPM input:** 0÷3000 Hz, 4 µs resolution
  Sensor types: Hall effect / magnetic pick-up / ignition coil sensor
- **Speed input:** 0÷3000 Hz, 4 µs resolution
  Sensor types: Hall effect / magnetic pick-up / ignition coil sensor
- **Analogue inputs:** 10, (8 SE, 2 TCK), 0÷5 Vdc, 10 bit
- **Voltage References:** 2, 5 Vdc, 50 mA
- **Supply voltage:** 9÷16 Vdc, Typ. 215mA
- **Operating temperature:** -20 +70°C
- **Material:** PMMA/PC ABS
- **Protection Level:** IP54
- **Dimensions / Weight:** 168x111x34 mm / 405 g
- **Connectors (28pin):** AMPCPC207369-1 (male), AMPCPC206070-1 (female, flying)
- **Note:** Tx elaborated data over CAN
  It is also possible to require parts with custom lateral cable harness (in place of standard back-side connector).

EAGLE

- **Special Functions:** Analogue/digital inputs, CAN and internal channels, Lap Time, Data Acquisition
- **LCD:** Dot Matrix (128x112); 3 Pages
- **Communication Lines:**
  CAN 2, C and B standard, sw cfg.baudrate, hw cfg. termin.
  USB 1, 12 MBit/s (Communications operating temp. -10+70°C)
  Serial line ISO-4191 (K line)
- **Track Marker Input:** TTL, rising edge, EMI filter
- **RPM input:** 0÷5V, Max frequency 2kHz
  Sensor types: Hall effect / ignition coil sensor
- **Speed input:** 2, 0÷5V, Max frequency 2kHz (on request 1 digit output)
  Sensor types: Hall effect / ignition coil sensor
- **Digital outputs:** 1, 0÷5V, max 50mA, open collector
- **Analogue inputs:** 10, (5+4 specific SE, 1 TCK), 10 bit
- **Voltage References:** 1, 5Vdc, 100mA, internal temperature sensor
- **Supply voltage:** 9÷16 Vdc, Typ. 200 mA
- **Operating temperature:** -20 +70°C
- **Material:** PMMA/PC ABS
- **Protection Level:** IP64
- **Dimensions / Weight:** 108x100x29 mm / 200 g
- **Connectors:** AMP serie 040 12+16p
- **Note:** Tx elaborated data over CAN

PC software:	Easy or Standard(hw-key)
Max channels	32
Internal data memory	512KB
Max Acquisition throughput	4 KB/s
Frequency range	10 Hz

COUGAR

- **Special Functions:** Analogue/digital inputs, CAN and internal channels
- **LCD:** Segment; 3 Pages
- **Communication Lines: CAN** 1, standard C, 1MBit/s
- **Track Marker input:** TTL, rising edge
- **RPM input:** 10÷2000 Hz, 2 µs resolution
  Sensor types: Hall effect / magnetic pick-up
- **Speed input:** 10÷2000 Hz, 2 µs resolution
  Sensor types: Hall effect / magnetic pick-up
- **Analogue inputs:** 6, 0÷5 Vdc, 10 bit
- **Voltage References:** 2, 5 Vdc, 50 mA
- **Supply voltage:** 9÷16 Vdc, Typ. 190mA
- **Operating temperature:** 0 +65° C
- **Material:** PMMA/PC ABS
- **Protection Level:** IP64
- **Dimensions / Weight:** 168x103x30 mm / 330 g
- **Connectors:** AS1-12-35P
- **Note:** Tx elaborated data over CAN

VISUS

- **Special Functions:** Video Logger integrated with Data Logger System
- **Communication Lines:**
  CAN 1, no hw terminations
  Ethernet 1, 10/100 MBit/s
  Serial line 1 RS232
  USB Pen Drive min. 4GB
  USB 2.0 1
- **Video Flash Memory:** 4GB
- **Video input:**
  4 channels, standard NTSC / PAL, 1 Vpp (75 Ω)
- **Audio input:**
  1 channel, 1Vpp
- **Video Compression:**
  MPEG4
  ISO/IEC 14496-2, MPEG4 ASP@Level5
  NTSC - 352x240 a 120fps, 720x480 at 30fps
  PAL – 352x288 a 100fps, 720x576 at 25fps
- **Audio Compression:** 8bit 8KHz u-Law 64KBps
- **Precision:** <1 acquired video frame
- **Operating temperature:** -10+70°C
- **Dimensions / Weight:** 139x111x57 mm / 600 g
- **Material:** anodised aluminium
- **Protection Level:** IP64
- **Connectors:** DEUTSCH AS212-35PN, DEUTSCH AS214-35PN

SHARK

- **Special Functions:** Data acquisition , Analogue/digital inputs, CAN and internal channels, Lap Time ,GPS Management, Expansion PCMCIA Card
- **Communication Lines:**
  CAN 3, 1MBit/s, C standard, sw cfg.baudrate
  Ethernet 1, 10/100 MBit/s
  Serial line 1 RS232
- **Input captures:** 4, Max frequency 2kHz
- **Analogue inputs:** 16, SE or PT1000, 10 bit, hw filter 500Hz
- **Digital inputs:** beacon, marker, eject, Manchester, Power Latch
- **Max channels:** 1024
- **Acquisition flash disk:** 256 MB internal, Compact Flash Card external
- **Max Acquisition rate:** 128 KB/s internal + 80 KB/s Card (independent cfg.)
- **Frequency range:** 1Hz÷10 KHz
  Note: for standard chs: max 1KHz; for analogue chs: max 4@5kHz or 1@10KHz
- **Voltage references:** 3, max 50mA, internal temperature sensor
- **Supply voltage:** 9÷16 Vdc
- **Consumption:** Typ. 950mA
- **Operating temperature:** -40 +85°C (compact flash card excluded)
- **Dimensions / Weight:** 130x106x37 mm / 560 g
- **Material:** Anodised aluminium
- **Protection Level:** IP64
- **Connectors:** 8STOC-14-35PN, 8STOC-12-35PN
- **Telemetry:** 750 B/s, 1÷200 Hz, 128 chs, RS232
- **Note:** Tx elaborated data over CAN
  data acquisition is designed for future use of 2 ARCNet lines (10MBit/s)
  PC software:
  Easy(freeware) or Standard(hw-key),
  GPS management via CAN (VB10SPS o VBOXII®) or via RS232 (standard NMEA-0183: GPRMC, GPGGA types; in mutex vs. telemetry);
  SMS transmission (via DKMGSM) on programmable Event detection (Trigger In/Out, Beacon, Local Condition,…)

COBRA

- **Special Functions:** Data acquisition , Analogue/digital inputs, CAN and internal channels, Lap time ,GPS Management, Telemetry Real Time
- **Communication Lines:**
  CAN 2, 1MBit/s, C standard, sw cfg.baudrate
  Ethernet 1, 10 MBit/s
  Serial line 1 RS232, 1 RS485
- **Input captures:** 4, Max frequency 1,5kHz
- **Digital inputs:** beacon, marker
- **Analogue inputs:** 16, single ended, 12 bit
- **Max channels:** 288
- **Acquisition flash disk:** 64, 128 MB
- **Max Acquisition rate:** 40 KB/s
- **Frequency range:** 1÷1000 Hz
- **Telemetry (Real Time):** 500 B/s, 1÷200 Hz, 64 ch, RS232
- **Voltage references:** 3, max 50mA
- **Supply voltage:** 9÷16 Vdc
- **Consumption:** Typ. 160mA
- **Operating temperature:** -10 +70°C
- **Dimensions / Weight:** 117x105x40.5 mm / 380 g
- **Material:** Anodised aluminium
- **Protection Level**: IP64
- **Connectors:** SJT00RT-16-35PN
- **Note:** Tx elaborated data over CAN
  PC software:
  Easy(freeware) or Standard(hw-key),
  GPS management via CAN (VB10SPS o VBOXII®) or via RS232 (standard NMEA-0183: GPRMC, GPGGA types; in mutex vs. telemetry);
  SMS transmission (via DKMGSM) on programmable Event detection (Trigger In/Out, Beacon, Local Condition,…)

LIZARD

- **Special Functions:** Data acquisition , Analogue/digital inputs, CAN and internal channels, Lap Time ,GPS Management
- **Communication Lines:**
  USB 1, 12 MBit/s
  CAN 2, C and B/C standard, sw cfg.baudrate
  Ethernet 10/100 MBit/s

	Base	Plus	Plus Duo
• **PC Communication line:**	USB	USB	Ethernet and USB
• **Max channels:**	64	128	128
• **Internal data memory:**	8(1), 16(2) MB	16(2), 32(3) MB	64(3) MB
• **Max Acquisition rate:**	16 KB/s	16 KB/s	16 KB/s
• **Serial line:**	1 TTL	1 RS232	1 RS232
• **Analogue inputs(4):**	4, 10 bit	8, 10bit	8, 10bit
• **Digital inputs:**	Beacon	Beacon, Key, Pickup	Beacon, key, Pickup
• **Consumption:**	Typ. 160mA	Typ. 200mA	Typ. 230mA
• **Weight:**	180 g	200 g	200 g

- **Frequency range:** 1÷500 Hz
- **Accelerometer:** internal, 2 axis, +/-5G
- **Digital outputs:** 4, 0÷5V, max 50mA, open collector
- **Input captures:** 4, 0÷5V, Max frequency 2kHz
  Sensor types: IC1 hw config.: Hall effect (default) / Ignition coil (see datasheet)
- **Voltage references:** 1, max 50mA, internal temperature sensor
- **Supply voltage:** 9÷16 Vdc
- **Operating temperature:** -10 +70°C
- **Dimensions:** 118x84x42 mm
- **Material:** PA6GF20
- **Protection Level:** IP64
- **Connectors:** duo twin FCI 100840BKK
- **Note:** Tx elaborated data over CAN
  PC software:
  (1) Easy(freeware),
  (2) Easy or Standard(hw-key),
  (3) Standard
  Each 2 SE analogue inputs can be hw config. as differential input if requested (default: 8SE).
  Sw: GPS management via CAN (VB10SPS o VBOXII®) or via RS232 (standard NMEA-0183: GPRMC, GPGGA types)

DataView

DataView è un pacchetto software di analisi dati sviluppato appositamente per gestire i datalogger MTA Corse.
Dataview è il risultato di anni di esperienza a supporto dei principali team nelle più importanti competizioni motoristiche e costituisce uno strumento fondamentale per l'analisi delle prestazioni e il tuning dei veicoli.
Le evolute funzioni di analisi e di presentazione grafica dei dati ne fanno uno strumento ideale per l'utilizzo nelle sessioni in pista, dove sono fondamentali:

- la velocità nello scarico dati
- l'immediatezza nella presentazione dei risultati
- la flessibilità nella configurazione delle schermate grafiche.

DataView è indispensabile anche nelle fasi di analisi dati post gara in cui sono fondamentali le funzionalità di calcolo e di confronto diretto fra diverse sessioni dati, di volta in volta acquisite ed archiviate nel database di riferimento.
DataView è in grado di ricostruire la mappa del percorso elaborando i dati acquisiti, consentendo la correlazione fra ogni dato memorizzato ed il corrispondente punto del circuito.

Le principali caratteristiche di DataView sono le seguenti:

- Scarico dati automatico dai datalogger
- Archiviazione dati basata su struttura Session/Run/Lap
- Possibilità di confronto e/o sovrapposizione di giri diversi, anche acquisiti in sessioni diverse
- Calcolo traiettoria per ricostruzione percorso
- Suddivisione automatica del circuito in segmenti omogenei, con calcolo dei parametri di ingresso/uscita e percorrenza curve
- Elaborazione dati con funzioni matematiche programmabili da utente
- Telemetria Real Time
- Integrazione con video logger per analisi congiunta dati/video
- Possibilità di definire utenti diversi, ognuno con un proprio account
- Completa configurabilità di finestre grafiche e ambienti operativi per ogni utente

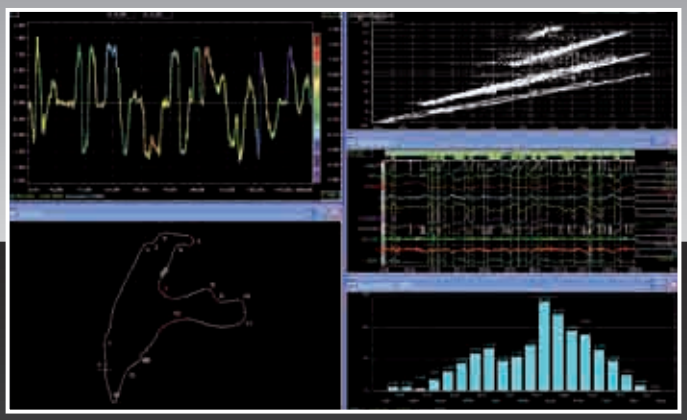
DataView è disponibile anche in versione Easy, con funzionalità semplificate, fornito in dotazione a tutti i Datalogger MTA Corse.

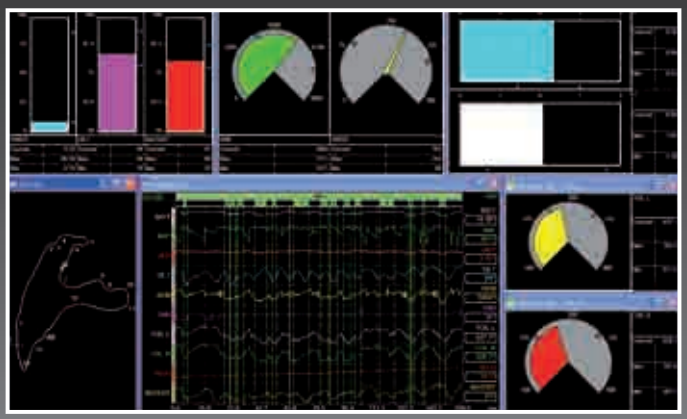
DataView is a data analysis software package specifically designed to manage the MTA Corse data loggers.
Dataview is the fruit of several years of direct experience in supporting the major teams during the most important motorcycle/car competitions and is a vital instrument for vehicle performance analysis and tuning.
Thanks to its advanced analysis functions and data graphic display, it is ideal for use during the track sessions where user needs:
- *quick data download*
- *immediate display of results*
- *flexible page layout.*

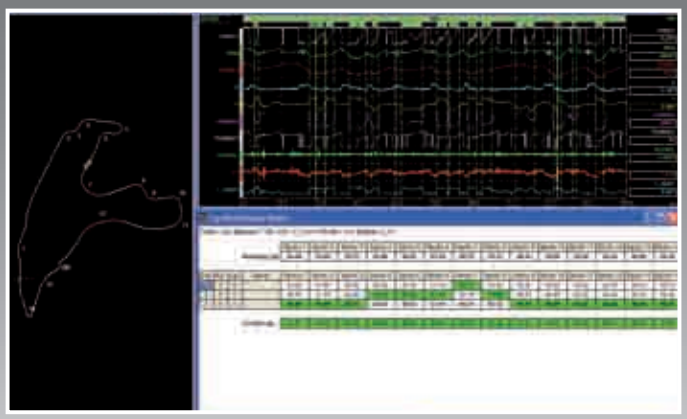
DataView is also indispensable for post-race data processing thanks to its calculation functions and possibility to directly compare data from different sessions, recorded from time to time and stored in the database. When DataView processes acquired data, it can also reconstruct the path, thus allowing user to correlate every stored value with the corresponding track point.

DataView key features include:
- *Automatic download from the data loggers*
- *Data storage according to a Session/Run/Lap format*
- *Chance to compare and/or overlap different laps, possibly acquired during different sessions*
- *Calculation of the trajectory for reconstructing the path*
- *Automatic splitting of the circuit in homogeneous segments, including calculation of the cornering and in/out parameters*
- *Data processing using mathematical functions programmable by the user*
- *Real Time Telemetry*
- *Integration with video logger for data/video combined analysis*
- *Chance to set up various users with own account*
- *Chance to fully edit all pages and operating environments according to user*

An Easy version is also available for DataView with simplified functions and is supplied as standard with all MTA Corse Data loggers.







DKM - D

- **Special Functions:** Differential input or thermocouple (TCK or TCJ)
- **Communication Lines: CAN** 1, 1 MBit/s
- **Analogue inputs:** 16, 0÷5 Vdc, 12 bit, differential
- **Frequency range:** 200 Hz (not configurable)
- **Supply voltage:** 8÷18 Vdc, 150 mA
- **Operating temperature:** -10+85°C
- **Dimensions / Weight:** 85x75x35 mm / 190 g
- **Material:** Aluminium
- **Protection Level:** IP64
- **Connectors:** SJT00RT-14-35PN
- **Note:** each input can be sw. config. as thermocouple (different sw version for TCK or TCJ to be chosen at order time).

DKM - A

- **Special Functions:** Analogue input Single ended
- **Communication Lines: CAN** 1, 1 MBit/s
- **Analogue inputs:** 16, 0÷5 Vdc, 12 bit, single-ended
- **Frequency range:** 200 Hz (not configurable)
- **Supply voltage:** 8÷18 Vdc, 100 mA
- **Operating temperature:** -10+85°C
- **Shock tested at 50g:** max. 10 ms
- **Dimensions / Weight:** 85x75x37 mm / 205 g
- **Material:** Aluminium
- **Protection Level:** IP64
- **Connectors:** SJT00RT-14-35PN

DKM - CC

- **Special Functions:** Can/Can Module
- **Communication Lines:**
  CAN 2, sw cfg.baudrate
  Transmission lines CAN1
  Tx datafrequency (1÷200Hz), CAN ID programmable
  Tx line bit-rate (bit/s) 125K, 250K, 500K, 1M (programmable)
  Receiving lines CAN2
  Rx line bit-rate (bit/s) 25K, 50K, 250K, 500K, 1M (programmable)
- **Frequency range:** 1÷200 Hz
- **Supply voltage:** 8÷18 Vdc, 60 mA
- **Operating temperature:** 0+70°C
- **Dimensions / Weight:** 91x57x24 mm / 150 g
- **Material:** Plastic
- **Protection Level:** IP64
- **Connectors:** Lemo EGG-0B-304-4PN, Lemo EGG-0B-304-5PN

TETRA

- **Special Functions:** Small 4 Analogue input
- **Communication Lines: CAN** C 1MBit/s (default)
- **Analogue inputs:** 2/4, 0-5Vdc, 10bit
- **Sampling Frequency:** 100Hz
- **Supply voltage:** 9-16Vdc, <100mA
- **Operating temperature:** -20+85°C
- **Dimensions / Weigh:** 38x33x21 mm / 80 g
- **Material:** Anodized aluminium
- **Protection Level:** IP67
- **Connectors:** not provided
- **Note:** Selectable CAN identifier (upon customer request)
  Selectable CAN termination (upon customer request)

MERCURY

- **Special Functions:** Small 3 axis Accelerometer
- **Communication Lines: CAN** C 1MBit/s (Mercury Plus)
- **Analogue outputs:** 3, 0-5V measurement range, ±6G
- **Sensor bandwidth:** 350Hz XY, 150Hz Z
- **Low pass filter bandwidth:** 7Hz
- **Current consumption:** Basic version <50mA @12VDC
  CAN version <100mA @12VDC
- **Supply voltage:** 9-16V
- **Operating temperature:** -20+85°C
- **Dimensions / Weight:** 38x33x21 mm / 70 g
- **Material:** Anodized aluminium
- **Protection Level:** IP67
- **Connectors:** not provided
- **Note:** Selectable CAN identifier (upon customer request)
  Selectable CAN termination (upon customer request)

GPS ARGO

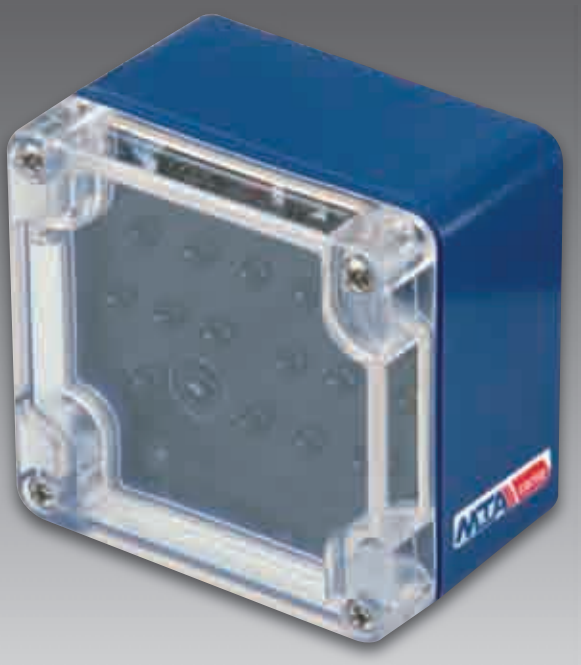
- **Special Functions:** CAN GPS module
- **Communication Lines:** CAN 1, 1 MBit/s
- **Data Tx Rate:** 5 Hz
- **Data Available:** Position, Speed, Heading, Lateral and Longitudinal Acceleration, Time, Radius of Turn, Roll Angle Estimate, Altitude
- **Supply voltage:** 8÷18 Vdc, 60 mA
- **Operating temperature:** -20+85°C
- **Dimensions:** 20x46x32 mm, external antenna
- **Material:** Plastic
- **Protection Level:** IP64
- **Connector:** Not provided
- **Note:** Selectable CAN identifier (upon customer request)

GPS VB10

- **Special Functions:** High Performance GPS CAN Module
- **CAN** std C, no termination
  Baudrate (sw. config.) default 1MBit/s
  Data Tx Rate 10 Hz
  Data Available Position, Vehicle speed, Heading, Lateral and Longitudinal Acceleration, Satellite Count, Time, Radius of Turn, Roll Angle Estimate, Altitude
- **Analogue outputs:**
  Output Type 0÷5 Vdc
  Output Data (sw. config.) Vehicle speed, Lateral or Longitudinal Accel. or Lap Beacon Marker
- **Digital outputs:**
  Output Type Low = 0v, High = 5v, 10÷1000 pulses/rev, Max freq. 4.4KHz
  Output Data (sw. config.) Digital Speed Pulse Output or Lap Beacon Marker
- **RS232:**
  Baudrate 115200bit/s
  Data Tx Rate 10 Hz
  Data Available NMEA $GPGGA and $GPVTG messages
- **Virtual Lap Beacon Output**
- **Antenna:** 3V active (included)
- **Supply voltage:** 8÷30Vdc, max 1.5W
- **Operating temperature:** -10+70°C
- **Material:** Aluminium
- **Protectional Level:** IP66
- **Connectors:** Deutsch Autosport
- **Dimensions:** 90x92x28 mm (connector not included)
- **Weight:** 200 g

DTX CHRONO

- **Special Functions:** Infrared Optical Transmitter
- **Communication Lines: Serial line** 1 TTL 0-5V
- **Range:** 1÷25 m
- **Transmission cone at a distance x:**
  - **x>15 m** ±6°
  - **5 m< x < 15 m** ±10°
  - **x <5 m** ±40°
- **Supply voltage:** 10÷15 V
- **Consumption (Vbat=13.2V):**
  - **High-power** 260 mA
  - **Low-power** 160 mA
- **Operating temperature:** -20+70°C
- **Dimensions / Weight:** 80x82x54,5 mm / 250 g
- **Material:** Plastic
- **Protection Level:** IP64



DRX CHRONO

- **Special Functions:** Infrared Optical Receiver
- **Range:** 1÷25 m
- **Output:**
  - **Voltage levels** 0->5->0 V
  - **Inhibition time** 10 s
  - **Red Led** indicating finish sensor code received
- **Supply voltage: 10÷15 V**
- **Consumption (Vbat = 13.2V):**
  - **With no signal** 12 mA
  - **With signal** 25 mA
- **Operating temperature**: 0+70°C
- **Dimensions / Weight:** 79.5x40x28.5 mm / 60 g
- **Material:** Plastic
- **Protection Level:** IP64
- **Connectors:** AMP Superseal 282087 (3 pin, female, flying)
  1 female 3-way

KIT CHRONO

Kit containing Optical Beacons Transmitter and Receiver

NAME	DESCRIPTION	P/N
DASHBOARDS		
PHOENIX	Standard	6100025
PHOENIX PLUS	With Data Acquisition	6100026
FALCON	RPM Scale 1000 - 10500	6100027
FALCON	With Customized RPM Scale	6100028
FALCON	With Customized RPM Scale With Exit Cables	6100029
EAGLE	Standard	6100030
EAGLE PLUS	With Data Acquisition	6100031
COUGAR	With Gauge and LCD Display	6100032
DATA LOGGERS		
VISUS	Video Logger with 4 Video Input	6200010
SHARK	Data Logger 1024 ch., 256MB for CARD - Dataview included -	6200011
COBRA	Data Logger 288 ch., 64MB - Dataview included -	6200012
COBRA	Data Logger 288 ch., 128MB - Dataview included -	6200013
LIZARD	USB Data Logger, 64 ch., 8MB - Dataview Easy included -	6200014
LIZARD	USB Data Logger, 64 ch.,16MB - Dataview Easy included -	6200015
LIZARD PLUS	USB Data Logger,128 ch.,16MB - Dataview Easy included -	6200016
LIZARD PLUS	USB Data Logger,128 ch.,16MB - Dataview included -	6200017
LIZARD PLUS	USB Data Logger,128 ch., 32MB - Dataview included -	6200018
LIZARD PLUS SPI	USB Data Logger,128 ch., 32MB, output SPI	6200019
LIZARD PLUS DUO	USB/ethernet datalogger, 128ch, 64MB - Dataview included -	6200020
SOFTWARE		
DATAVIEW	Data analysis software package	6900001
MODULES		
DKM - D	CAN Module 16 differential input	6200021
DKM - A	CAN Module 16 analogue input	6200022
DKM - CC	14 CAN / CAN bridge	6200023
TETRA 4	4 analogue input single ended	6200006
TETRA 2	2 analogue input differential	6200005
MERCURY	3axis accelerometer	6200003
MERCURY-PLUS	3axis accelerometer with CAN Line	6200004
GPS ARGO	GPS CAN 5Hz	6200024
GPS VB10	GPS CAN 10Hz	6200025
BEACONS		
DTX-CHRONO	Optical Beacon Transmitter	6200026
DRX-CHRONO	Optical Beacon Receiver	6200027
KIT-CHRONO	Kit with Optical Beacons Transmitter and Receiver	6200028

Drawings, specifications and reference numbers may be modified and changed.
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