

A Complete Range of Solutions

CORRSYS

DATRON

Sensorsysteme GmbH



for

Dynamic Vehicle Testing

2008

CORRSYS-DATRON

provides a comprehensive range of technologies for accurate measurement of vehicle dynamics, including:

- **Non-Contact Optical Sensors**
- **Global Positioning Systems**
- **Innovative Mechanical Sensors**

Our mission is to supply the technology that precisely fits your testing needs.

Please feel free to contact us for information about the many additional sensor technologies we offer...

Non-Contact Sensors

- Optical
- Microwave
- GPS



Onboard Data Acquisition Systems



Innovative Mechanical Sensors

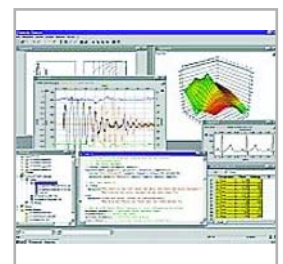


Fuel Flow Meters

- Gasoline
- Diesel
- Alcohol
- Bio-Diesel



Software



and a wide range of Accessories

CORRSYS-DATRON

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Optical Non-Contact Sensors

1-axis Optical CORREVIT® Speed & Distance Sensors

for slip-free measurement of longitudinal dynamics

L-350 Aqua



LFII P



Working range	350 mm ± 130 mm	200 mm ± 70 mm
Speed range	0.3 ... 250 kph *	0.5 ... 250 kph *
Measurement deviation	< ± 0.2% **	< ± 0.2% **
Distance Resolution	1.5 mm	1.9 mm
Digital output	1 ... 1000 pulses/m	1 ... 1000 pulses/m
Analog output	0 ... 10 V	0 ... 10 V
Temperature range	-25 ... +50° C	-25 ... +50° C
Power supply	10 ... 28V; 32W ***	10.5 ... 24V; 28W
Weight	500 g (sensor) 1100 g (electronics)	250 g (sensor) 490 g (electronics)



CORREVIT® L-350 Aqua Sensor during a brake test on wet track. Front mounting with suction holder.

2-axis Optical CORREVIT® Speed & Distance & Slip Angle Sensors

for slip-free measurement of longitudinal and transversal dynamics

S-350



SFII P



Working range	350 mm ± 100 mm	180 mm ± 50 mm
Speed range	0.5 ... 250 kph *	0.5 ... 250 kph *
Measurement deviation	< ± 0.2% **	< ± 0.2% **
Distance Resolution	2.47 mm	2.08 mm
Digital output	1 ... 1000 pulses/m	1 ... 1000 pulses/m
Analog output	±10 V	±10 V
Temperature range	-25 ... +50° C	-25 ... +50° C
Power supply	10 ... 28V; 40W ***	10.5 ... 24V; 28W
Weight	500 g (sensor) 1100 g (electronics)	250 g (sensor) 490 g (electronics)

Sensorsystem S-350 & Gyro



CORREVIT® S-350 Sensor with new electronics and gyro for **automatic calculation of sideslip angle relative to the vehicle's center of gravity.**

 Product Update

**Special Racing Versions of
CORREVIT® Sensors available!**

* optional: calibrated up to 400 kph

** with calibration on the test surface

*** L-350: from serial number 639-083100
S-350: from serial number 640-084100

**FIA Homologation:
SFII / SFII-P / S-350 Racing**

Optical Non-Contact Sensors

Optical Laser Height Sensors

for non-contact distance measurement

	HF-250C	HF-500C	HF-750C
Working range	100 mm ... 350 mm	125 mm ... 625 mm	150 mm ... 900 mm
Resolution	0.1 mm	0.2 mm	1.5 mm
Relative Accuracy	±0.5 mm	±1 mm	±1 mm
Linearity	±0.2 %	±0.2 %	±0.3 %
Max. Sampling rate *	1 kHz	1 kHz	8 KHz
Outputs	analog, RS232, CAN	analog, RS232, CAN	analog, RS232, CAN
Light Source	Laser < 5mW **	Laser < 5mW **	Laser < 5mW **
Wavelength	660 nm (red)	660 nm (red)	660 nm (red)
Weight	155 g	155 g	155 g

 New Product

Optical Laser Height Sensors & Accessories building Sensor Systems

for dynamic camber angle measurement / pitch & roll measurement

	DCA-System	Pitch & Roll System	UC Processor
Working range	205 mm ± 125 mm	100 ... 900 mm***	Input voltage: 10V ... 30V DC
Resolution	0.04°	0.1 ... 1.5 ***	Sensor inputs: CAN V2.0B for HF-xxxC Sensor CAN V2.0B for Correvit® Sensors
Relative Accuracy	<0.5°	±0.5 ... ±1 mm ***	CAN Output: CAN V2.0B user-specific config. possible
Linearity		±0.2 ... ±0.3% ***	PC-Interface for configuration: USB 2.0 full speed
Max. Sampling rate *	250 Hz	1 ... 8 KHz ***	Indication LED for: CAN Bus busy indication Power supply connected indic. Reverse polarity indication
Outputs	analog, RS232, USB, CAN	analog, RS232, USB, CAN	Update rate: 250 Hz
Light Source	Laser < 5mW **	Laser < 5mW **	
Wavelength	660 nm (red)	660 nm (red)	
Weight	Sensor: *** Electronics: 850g	Sensor: *** Electronics: 850g	

 New Product

 New Product

* Sampling rates up to 8kHz are possible on surfaces with high reflection

** Laser class 3R (IEC 60825-1)

*** Depends on sensor configuration

Non-Contact

Gyro Modules

for dynamic yaw-rate measurement



FS Sensitivity ±150 deg/sec, 25 Hz	Transverse sensitivity Typ. 0.2 deg/sec/g	Unpowered shock survival > 2000 g	NEW (see page 2): CORREVIT® S-350 + Gyro for automatic calculation of sideslip angle relative to the vehicle's center of gravity
FS Span: ±0.2 V DC	Temperature range -40°C ... +85°C	Custom configurations available!	

MicroSAT® GPS Sensor

for measurement of vehicle speed and distance travelled



Positioning stand alone	Speed measurement range 0 ... 1854 kph	Speed accuracy * 0.1 kph	Distance accuracy * 0.05 % (< 50 cm/km)
Position accuracy * 1.8 m ... 2 cm CEP	Update rate 20 Hz	Output: digital, analog, CAN, RS232	Internal memory self-logging

* depending on number and distribution of visible satellites / CEP = **Circular Error Probability**: defines the radius of a circle that represents a 50 percent probability of a position lying in a circle.

Pedal Force Transducer

for measurement of force exerted on the brake pedal during brake tests



Measurement range 0 ... 1500 N	Accuracy 3% average, 7% maximum	Dimensions Digital display unit: 80x160x65 mm
Analog output 1 mV/N	Linearity 0.1%, 0.7% with integrated signal option	Weight of sensor element approx. 350 g

RV-4 Wheel Vector Transducer (car version)*

for simultaneous measurement of all wheel positions and orientations



	X [mm]	Y [mm]	Z [mm]	camber [°]	steer [°]	
Measurement range	±150	±150	±200*	±10	±60	Power supply 10 ... 28V
Accuracy	±1	±0.7	±1	±0.2	±0.1	Moving Mass
Reproducibility	±0.5	±0.5	±0.5	±0.1	±0.05	(without holder and cables) 2500 g

* optional truck version available

* If the entire measuring range of the z-axis (±200 mm) is utilized, the maximum measuring ranges of the y- and x-axis will be restricted.

Mechanical

WPT Wheel Pulse Transducer

for acquisition of wheel rotation




Rotational speed maximum 6000 rpm continuous operation 3000 rpm	Available pulse values standard: 1000 pulses/rotation 1 ... 3600 pulses/rotation on request	Output digital = TTL
	Supply voltage 5 ... 30 V	

MSW/S Measurement Steering Wheel

for non-contact measurement of steering speed and angle



Steering torque ranges ±10/±50 Nm passenger car ±50/±250 NM light truck	Steering rate max. 1000°/sec	Power supply 10 ... 36 V DC	 New MSW Adapter see page 7
Steering torque linearity typical ±0.2%	Resolution up to 7200 p/rev (with MSW Processor)	Temperature range -20 ... +60°	

MSW/S Processor

electronics interface for CORRSYS-DATRON measurement steering wheels



Sensor input for direct connection to the MSW/S	Input voltage 10 ... 36V DC	PC-Interfaces RS232 USB 1.1	Adjustable Filter time 8 ... 512 ms or unfiltered
Outputs Analog, digital, CAN	Angle resolution 0.05°	DA converter resolution ≤ 0.008 Nm, 0.04°, 0.04°/s	Data update rate: 250 Hz

Many further sensors available, i.e. accelerometers, gyros, pressure sensors, etc.

DFL1x-5bar / DFL-WTx-5bar

for fuel consumption measurement



Measurement range 0.5 ... 150 l/h	Temperature range -20°C ... 70°C	Accuracy ±0.5%	Weight DFL-1: 2 kg DFL-WT: 6 kg
Media diesel, gasoline, alcohol, bio-diesel	Operating Voltage DFL1: 10 ... 29 V DC DFL-WT: 10 ... 15 V DC	Reproducibility ±0.2%	Dimensions DFL-1: 183 x 106 x 94 mm DFL-WT: 247 x 193 x 119 mm

DFL3x-5bar

for fuel consumption measurement



Measurement range 1.5 ... 150 l/h	Temperature range -20°C ... 70°C	Accuracy ±0.5%	Weight approx. 9 kg
Media diesel, gasoline, alcohol, bio-diesel	Operating Voltage 10 ... 15 V DC	Reproducibility ±0.2%	Dimensions 350 x 195 x 125 mm

DFL Processor

for processing data from fuel consumption measurement



Operating Voltage: 10 ... 28 V	Digital Output 1.)Actual consumption 2.)Flow rate	Analog Output 1.)Flow rate	Can Output: Actual consumption Flow rate
Temperature Range: -20°C ... 50°C	Stand alone display (proportional to Digital 1)		

DAS-2A

for measurement of longitudinal dynamics



Software CeCalWin	Frequency counter inputs 2	Sensor excitation +5/+12 VDC	Connections LCD-Display LED-Display
Analog Inputs 8 max. (differential)	Switch/digital inputs 2	Interface RS232	Resolution < 5 mV

DAS-3

for measurement of longitudinal dynamics



Inputs: 8 analog, 16 Bit (expandable to 16 inputs) 6 counter, 2 switch 1 sensor input CAN	Sensor excitation +5/+12 VDC	Interface/Software RS232/CeCalWin
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DAS-3 Modules

for expansion of the DAS-3 data acquisition unit



DAS-3 Analog Module 8 Diff, 8 Counter	DAS-3 Printer Module 24 col 144 dpl 58 mm standard paper	DAS-3 Strain gage Module	DAS-3 Thermocouple Module *
DAS-3 Analog Module 2 8 Diff, 8 Counter	*New Product		

µEEP-11

stand-alone high-performance data acquisition and evaluation system



Software TurboLab	Frequency counter inputs 8 / 16 possible	Sensor excitation +5/+12 VDC	Connections Ethernet, CAN, USB, RS232
Analog Inputs 48 max. (single-ended or differential)	Switch/digital inputs 4	Optional interfaces J1850, OBD II, temperature, strain gage	

Brake Switches & Light Barriers



Brake Switch Lemosa
Brake Switch 9 pin DSub



Light Barrier with 3pin Lemosa Connector
Light Barrier with 9pin D-Sub socket
Reflection tape

Distribution & Trigger Boxes



Power Distribution Box - SMALL
for power supply to sensors and data acquisition systems
Power Distribution Box - LARGE
for power supply to sensors and data acquisition systems

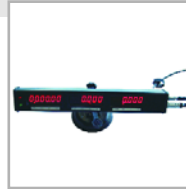


Triggerbox
Computer Interface box for CeCalWin and data acquisition via COM port (RS 232)

Monitors & Displays



Compact Display
for displaying velocity, etc.
Analog input 0 ... 10 V
conversion factor user selectable
max. 20 scaling points sensor linearization



Stand Alone Display
Calculation and Display Unit for Speed Sensors with digital (pulse) output and/or CDS-DFL Fuel Flow Measurement Systems

Mounting Equipment



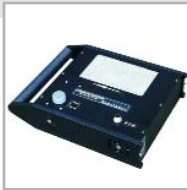
Adjustable Mounting Systems
for CORRSYS-DATRON Sensors

- suction holder mounting units
- magnetic plate mounting units
- wheel mounting units
- for vehicle side & rear, trailer coupling, towing lug



Laptop Car Mounting
Vehicle kit for standard laptops.
For measurement using Turbolab PRO and CORRSYS-DATRON Sensors by serial link

Simulators



Belt Simulator
for simulation of vehicle dynamics



DAS-1/2 Simulator
Handy digital and analog simulator with trigger function for testing input and output functions of CORRSYS-DATRON DAS data acquisition systems


Many additional accessories are available!

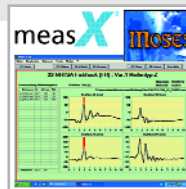
CeCalWin Pro



Configuration Software
for setting the digital and analog channels of optical sensors and for calibration on the test surface

MOSES

 New Product

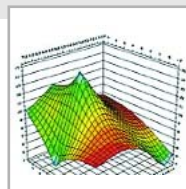


Software for Vehicle Dynamics Testing
Maneuve setup and planning, data acquisition and evaluation for driving dynamics tests.
Includes 40 predefined manoeuvres.

Turbolab



TurboLab Dynamics
Data acquisition software that provides a comprehensive solution for data acquisition, incorporating an intuitive user interface designed specifically for dynamic vehicle testing applications.*



TurboLab Analysis
professional analysis software with fast data browser and powerful graphical and mathematical tools.

* Windows** 2000 or XP required.

Mounting Options - Examples

We provide a wide range of mounting accessories for **quick and easy installation** of CORRSYS-DATRON Sensors.

The new CORRSYS-DATRON Magnetic Plate Mounting Unit makes mounting exceptionally easy:



Pre-assemble the CORRSYS-DATRON Magnetic Plate Mounting Unit



Position the Magnetic Mounting Unit parallel to the vehicle body, e.g. at the driver-side door. The magnetic plates will automatically hold fast to the (metal) vehicle door/body panel. Adjust the Mounting Unit perpendicular to the ground



Measure the sensor mounting height to be sure that the sensor is within the specified vertical operating range



Insert the included sensor mounting screws through the mounting holes in the sensor, then into the mounting holes in the heat sink/mounting plate and tighten the screws.



Connect the signal cable to the sensor.



Route the signal cable through the side window, into the interior of the vehicle and connect it to data acquisition, then secure the cable to the vertical mounting rod with a cable tie.

Your Sensor is ready for use in minutes!

Some other examples of CORRSYS-DATRON Mounting Equipment:



LFII-P / SFII-P mounted with a suction holder unit



HF & SFII P Sensor with magnetic plate holder



DCA System with SFII-P mounted at the wheel



RV-4 Sensor with 4-point suction mount



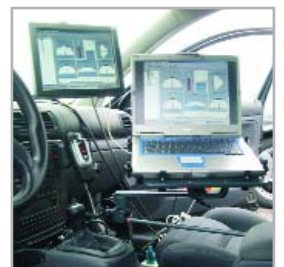
L-350 mounted with a magnetic plate



L-350 front mounting with suction holders



MSW/S Adapter Universal V3 with MSW/S



CDS Laptop holder

To learn more about the complete line of dynamic vehicle testing solutions and accessories from CORRSYS-DATRON visit www.corrsys-datron.com or contact your local representative.

References

AFRICA

SOUTH AFRICA

- Nissan
- Ford
- Toyota
- Volkswagen
- Daimler Chrysler
- SABS Eurotyp

AMERICA

USA

- Accident Science
- AMCI Marketing
- Arvin Meritor
- Autoliv
- BMW
- Borg Warner
- Bridgestone / Firestone
- Burke E. Porter
- Caterpillar
- Collision Research
- Consumer Rep./Cons.Union
- Automot. Test.
- Continental Teves
- Cooper Tire
- Daimler Chrysler Corporation
- Dana Corporation
- Delphi
- Delta Forensic Engineering
- Evernham Motorsports
- Exponent Failure & Analysis
- Fiat
- Ford Motor Corporation
- Freightliner Truck
- Gannassi Racing
- GE Global Research
- General Motors Corporation
- Geophysical Survey System
- GM Racing / Pratt and Miller
- Goodyear
- Goodyear Racing
- Hancock
- Honda
- Hyundai / KIA
- International Truck and Engine
- Joe Gibbs Racing
- John Deere
- Kawasaki
- Krohn Barbour Racing
- Link Engineering
- MAG Research
- Mazda
- Mercedes Benz
- Michelin
- Mitsubishi
- National Highway Safety Traffic Admin.
- New York City Transit
- Newman Haas Racing
- Nissan
- OptimumG
- Panther Racing
- Penske Racing
- Porsche
- Richard Childress Racing
- Robert Bosch
- Roush / Ford Racing
- Southwest Research
- Sypris Test & Measurement Tandy Engineering
- Toyota
- Toyota Racing
- Transportation Safety Tech.
- TRW
- U.S. Army
- Visteon
- Volvo
- Workhorse Custom Chassis
- Yamaha

MEXICO

- Automobile Magazine
- Daimler Chrysler de México
- Daimler Chrysler V. Comerciales
- Editorial Motorpress Televisa
- Ford Motor Company

- General Motors de México
- Instituto Mexicana del Petroleo
- Nissan Mexicana
- Volkswagen de México

ARGENTINA

- Fate
- Volkswagen
- Peugeot
- Iveco

BRAZIL

- Volkswagen
- Ford
- Fiat
- Peugeot
- Renault
- Pirelli
- Frax-Le
- Daimler-Chrysler
- Petrobras
- General Motors
- Volvo
- Iveco
- Honda
- Bridgestone
- Scania
- Toyota
- Bridgestone Firestone
- Continental
- TRW
- Magneti Marelli
- Cummins
- Robert Bosch

ASIA

CHINA

- Beijing Mechanical College
- ChangAn Ford Auto Company
- CHERY Auto Co.
- Chin.Inst.of National Automobile. Insp.
- Dong Feng Auto Co.
- FAW Volkswagen Automobile
- Jili Automobile Company
- SAIC
- Shandong Dongyue
- Shanghai Volkswagen Automobile
- Shenyang HuaChen-Brilliant Auto
- Zhengzhou Yutong Bus

INDIA

- ARAI
- Ashok Leyland Ltd.
- Bajaj Auto Ltd.
- Brakes India Ltd.
- General Motors India Pvt. Ltd.
- Hero Honda Motors Ltd.
- Hero Motors
- Indian Oil Corporation Ltd.
- JCB India
- JK Tyres Ltd. (Hasetri)
- Kalyani Brakes Ltd.
- Mahindra & Mahindra Ltd.
- Maruti Udyog Ltd.
- New Holland Tractors
- Sundaram Brake Linings Ltd.
- Sundaram Clayton Ltd.
- TAFE
- Tata Motors Ltd. Jamshedpur
- Tata Motors Ltd. Pune
- TVS Motor Co. Ltd.
- VRDE

INDONESIA

- PT Indomobil Suzuki Int

IRAN

- AIRIC
- Iran Khodro
- ISQI
- ITRAK
- Mega Motors
- TKC
- Zamyad

JAPAN

- Toyota Motor
- Nissan Motor
- Honda R & D
- Mazda Motor
- Suzuki Motor
- Daihatsu Motor
- Mitsubishi Motor
- Hino Motor
- Nissan Diesel
- Isuzu Motor
- Mitsubishi Fuso
- Bridgestone
- Sumitomo Rubber
- Yokohama Rubber
- ADVICS
- Toyota Shatai
- Aishin Seiki
- Denso
- Yamaha
- Kawasaki Motor
- Nihon University
- Keio University
- Kanagawa Institute Univ.
- BMW Japan
- Michellin Research Asia
- National Research Institute of Police Science

KOREA

- ADD
- Daewoo Bus
- Doosan Infracore
- Ssangyong Mo
- Hankook Tire
- Hyundai Mobis
- Hyundai Motor
- KATRI
- Kia Motor
- Kumho Tire
- Mando Corp
- Renault Samsung
- Ssangyong Motor

SINGAPORE

- Singapore Technologies Kinetics

TAIWAN

- ARTC
- FORD
- KENDA tire
- YATC

THAILAND

- Auto Alliance (Thailand)
- International Media Co.
- Toyota Motor (Thailand)

UZBEKISTAN

- Research Centre and testing

VIETNAM

- Hanoi Agriculture University
- Hanoi Technical University
- Institute Mechanical of Military
- Register Institute of Agriculture
- Machine
- Vietnam Register of Shipping

AUSTRALIA

- Accredited Test Services (Department of Defence)
- Bishop Innovation
- BMW
- Bosch
- Ford Motor Co of Australia
- Holden Ltd
- Mitsubishi Australia
- Nissan
- ProDrive
- Toyota Australia
- Victoria Police

EUROPE

AUSTRIA

- AVL
- Magna Steyr

BELARUS

- MAZ

BELGIUM

- Ford
- Nissan
- Toyota

CZECH REPUBLIC

- Karosa
- Skoda

DENMARK

- Brüel & Kjaer

FINNLAND

- Patria
- VTT

FRANCE

- Citroen
- Irisbus
- Michelin
- Peugeot
- Renault

GERMANY

- ARAL Forschung
- ATP
- Audi
- BMW
- Bosch
- Continental
- Daimler Chrysler
- Dekra
- EvoBus
- FEV
- FKFS
- Ford
- Goodyear Dunlop
- Honda
- Hyundai
- IPW
- Karmann
- MAN
- Mazda
- Mercedes AMG
- Mess und Eichwesen
- Multicar
- Opel Performance
- Porsche
- Siemens VDO
- Toyota F1
- TÜV
- Volkswagen
- ZF Lenksysteme

HUNGARY

- Knorr Bremse

ITALIA

- Alfa Romeo
- Aprilia
- Brembo
- Bridgestone
- Ducati Motor
- Ferrari F1
- Fiat
- Iveco
- Lamborghini
- Lancia
- Maserati
- Piaggio
- Pirelli
- Prototipo
- Alston
- Ansaldo Trasporti
- ATAC
- Auto
- CESAB
- Ferodo
- Galfer
- Quattroruote
- Same Deutz
- SOC Autostrade
- Tranbus

LUXEMBOURG

- Goodyear

NETHERLANDS

- DAF
- PDE automotive
- RDW
- TNO
- Vredestein

POLAND

- Lumag
- OBRSM "BOSMAL"
- STOMIL OLSZTYN

RUSSIA

- Autorevju
- GAZ
- KAMAZ
- VAZ
- Za ruljem

SPAIN

- Auto Bild
- Federal Mogul
- NTA
- Irisbus
- Michelin
- Nissan
- Seat

SWEDEN

- Haldex
- Saab
- Scania
- Volvo

SWITZERLAND

- BMW Sauber F1
- Dynamic Test Center
- Rieter automotive
- RUAG
- Tescon

TURKEY

- BMC SAN ve TIC A.S.
- Daimler Chrysler
- Ford Otomotiv San. A.S.
- Frenteknik Otomotiv San. Tic. A.S.
- Istanbul Technical University - Otam
- Temsa -Termomekanik Sanayi ve Ticaret A.S.
- TOFAS Türk Otomobil Fabrikasi A.S.
- Toyota Otomotiv Sanayi Turkiye A.S.

UKRAINE

- LuAZ

UNITED KINGDOM

- BAR Honda F1
- Jaguar
- Kumho Tires
- Landrover
- McLaren-Mercedes
- MIRA
- RedBull Racing
- Renault F1
- Williams F1

Do you miss your company in this list?

Please let us know by e-mail:
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