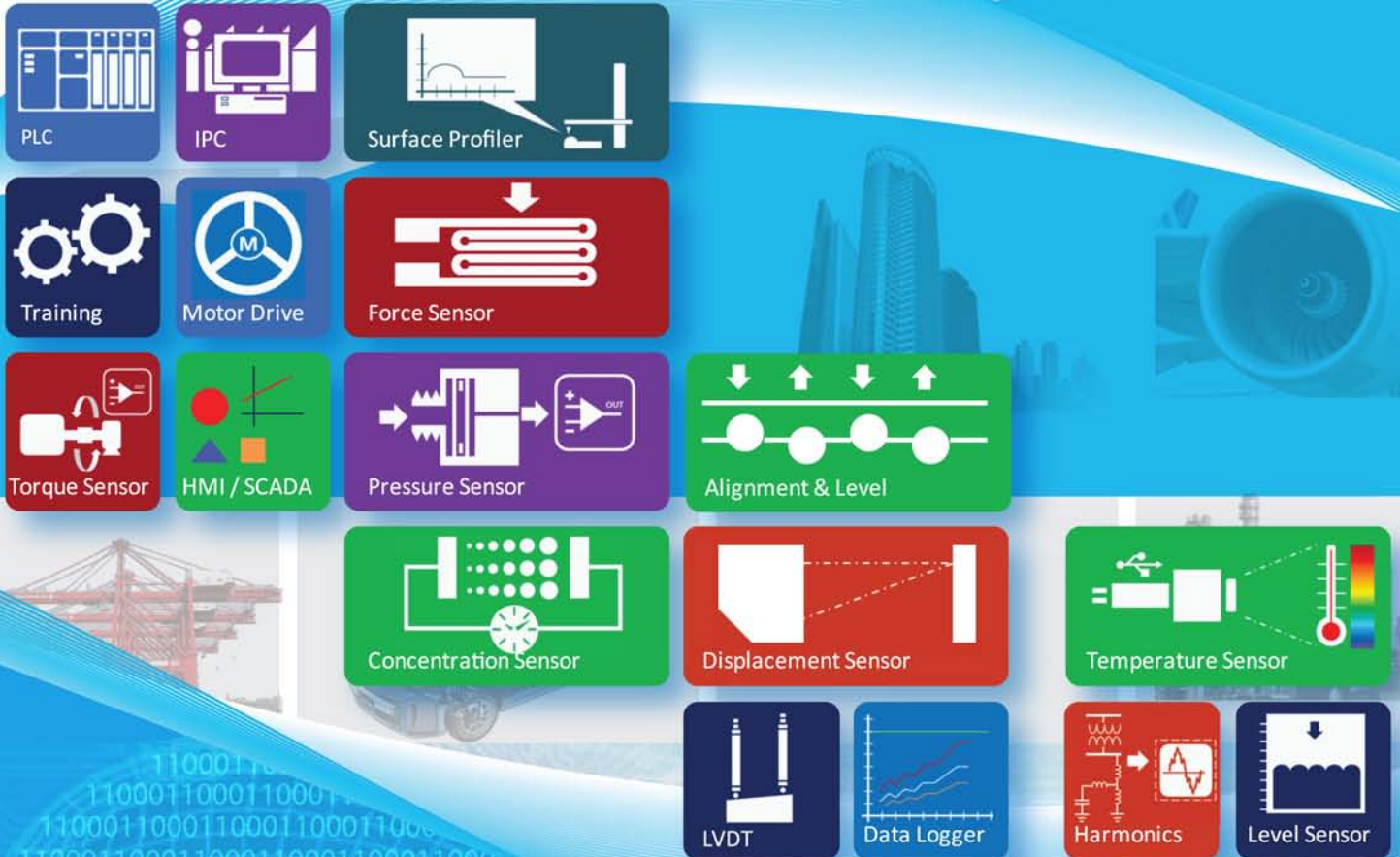


# Product Guide VIII



we measure  
display  
control





Meeting Customer Satisfaction As a Total Solution Supplier



# OUR CUSTOMER OUR MISSION

Endless Automation Systems, Wide Range of Solutions, Advance Technology,  
Cost effective, Free Application Consultation,  
Well-trained and dedicated engineers,  
Satisfaction Guaranteed, Free Demonstration.



\*For more information, please log on to <http://www.scigate.com.sg>

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**01**

## **HMI**

Graphic Touch Panel  
Graphic Logic Controller  
Industrial Computer & Flat Panel  
Data Logger

04-07

**02**

## **SCADA**

SCADA Solution  
Energy, Facility & OEE Solution  
Industrial Computer & Flat Panel  
Marine Computer  
Graphic Touch Panel (CE)  
Graphic Logic Controller (CE)  
Programmable Logic Controller

08-11

**03**

## **SENSORS**

Force Sensor / Weighing Solutions  
Force /  
Displacement Measurement Solutions  
Torque Sensor  
In-line Concentration / Density Monitor  
Level Transmitter  
Pressure Transmitter  
Pressure Switch  
Level Float Switch  
Flow Sensor  
Digital Panel Meter

12-14

15-20

**04**

## **DRIVE & CONTROL**

AC Drive / DC Drive  
Soft Starter  
AC Servo Drive / Motor  
Wide Spectrum Passive Harmonic Filter

21-26

**05**

## **METROLOGY**

Contact Displacement Probes  
Analogue & Digital Probe  
Non-Contact Measurement System  
Laser Scan Micrometer  
IR Thermo-sensor / Thermo Imager  
Color Sensor  
High precision roundness, roughness  
and contour measurement



# The GP4000 Series



**Pro-face**  
for the best interface



Touchscreen HMI with extensive simultaneous multi-control connectivity

SP5000

## The New Pro-Face Standard

*Bring your factory closer to your office*

By segmenting the network, Smart Portal makes it possible to connect factories and offices while ensuring the highest security.



Pro-Face LT4000M – HMI + PLC

DIO/AIO	Built-in DIO: Max. 20 inputs (include 2 fast inputs), Max. 10 outputs, Max. 2 fast outputs Built-in AIO: Max. 2 inputs, Max. 2 outputs, Max. 2 temperature inputs		Sensor, Motor, Lamp, Inverter, Switch, and etc...
CANopen (Master)	CANopen supported as Master: Max. 63 CANopen slave devices		Pro-face EX Module General CANopen devices
Ethernet Serial	Ethernet port and SIO (RS-232C / RS422 / RS485) port integrated		Actuator, Robot, Inverter, Motion Controller, PLC, etc...
USB	USB Type A available		EZ Series USB Devices

## Pro-face Remote HMI

Remote Monitoring Software For Mobile



Pro-Face Remote HMI can monitor and control Pro-Face HMI screen from a smart phone or tablet.



**SLIO**

SLIO – the intelligent, distributed I/O system. Value for money & efficiency are our main considerations in the development process.

## Pro-face USB Solution EZ SERIES

Flexible and user friendly solution.  
EZ Tower Light  
EZ Illuminated Switch  
EZ Numpad  
EZ Fingerprint Recognition Unit



Direct connection via our products to various devices enabled with our all-in-one software



Available a wide variety of high-quality sample screens of connecting devices for reduction of editing time.



## PS4000 Series *(Rugged, High Performance IPC)*

**Pro-face**  
for the best interface



### Dependable:

- Longer part life
- UPS Supported
- Corrosion resistant
- HDD mirroring

### Maintainable:

- Expandable
- Replaceable HDD
- Replaceable Fan

### Compatible:

- Rear mounting available
- Reuse HMI resources
- Industrial Monitor

### Reassurance:

- OS Long-Term Supply
- Safety Standard



UPS Available



Large Heatsink + Smart fan control



Sliding expansion Slot (Slide-in Slot)

HDD/SSD Slot (Slide-in Disk)

Easily Replaceable HDD Drive

## FP5000 Series *(Flat Panel Monitors)*

- ▶ Available in 12.1" ~ 15"
- ▶ Analog Resistive Touch Panel
- ▶ DVI-D
- ▶ IP67F
- ▶ Front USB2.0 port
- ▶ Flexibility in connection to CPUs



Scroll

Swipe

Pinch

Two-point touch

Flat Panel Monitor

### FP5000 SERIES

Industrial grade TFT display supporting gesture operation



Benefit from latest multi-touch operation support  
Hand gestures technology are being used for natural and intuitive human-computer interaction.  
Applying proven resistive touch technology reduce compromises on the choice of gloves or installation environment.

## PE4000B Series



**ECONOMIC, EFFICIENT, EMPOWERING**

### Specification:

- ▶ Serial COM ports x 06
- ▶ Ethernet ports x 03
- ▶ USB ports x 05
- ▶ 8 Points (Selectable I/O)
- ▶ Connect to multiple devices at the same time.



Powerful, Innovative, Intuitive (5.7" to 15")

**Fuji Electric**  
Innovating Energy Technology

# V9 Series



## Wireless Data Transfer



By connecting a PC to a V9 via wireless LAN, screen data can be upload / download wirelessly and ladder programs can be transferred to the PLC without physically connect the units, it is easy to debug programs on site.



PC



PLC

## Remote Connection from Tablet PCs

All types of the V9 series are equipped with VNC server function for remote monitoring and control of production from your table PC.



Monitoring  
Control



## Direct communication with your tablet PC

**V9 Advanced**

V9 Advance model incorporates an access point, which enables direct communication with a wireless device without an internal access terminal



No access point required for wireless LAN

## Zooming In and Out with Two Fingers **V9 Advanced**

The displayed image can be magnified up to 200% by pinching out the screen, and reduced to the original size by pinching it in.



Pinching in



Pinching out

Zoom up to 200%

\*2: the image can be scaled up and down by double tapping for V9 Standard / Lite.

## Widescreen LCD **V9 Advanced**

V9 Advanced models is equipped with a high-precision, high-resolution widescreen (16:9). Greater volume and variety of information can be displayed on the screen.



## TECHNOSHOT Series – Simple, Economical, Efficient (7.0" and 10.2")

Compact yet highly functional

**TS1070 series** 7 inches

WVGA 64K colors TFT LED Backlight 3ch Serial (2-wire) USB Master/Slave Ethernet



TS1070

Wide screen to display more information

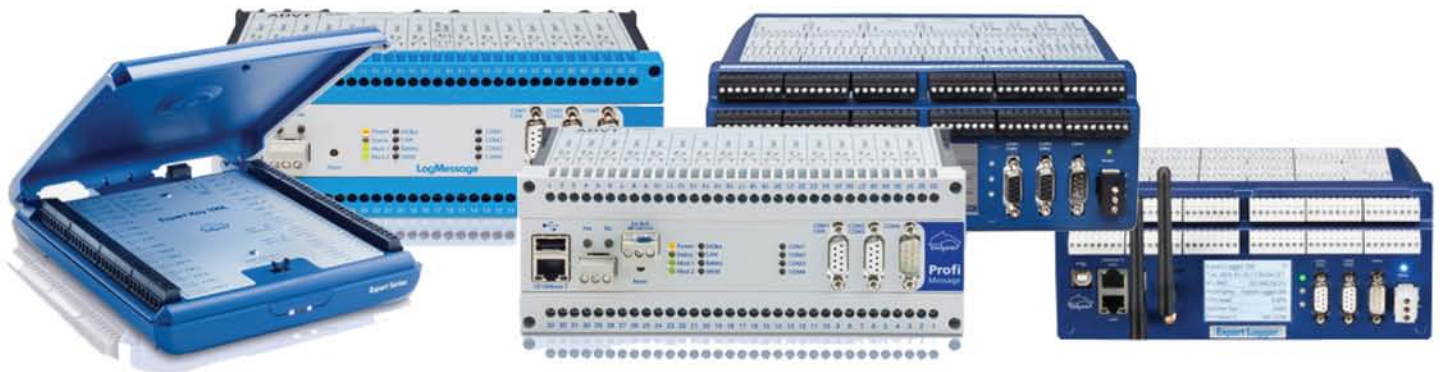
**TS1100 series** 10.2 inches

WVGA 64K colors TFT LED Backlight 3ch Serial (2-wire) USB Master/Slave Ethernet

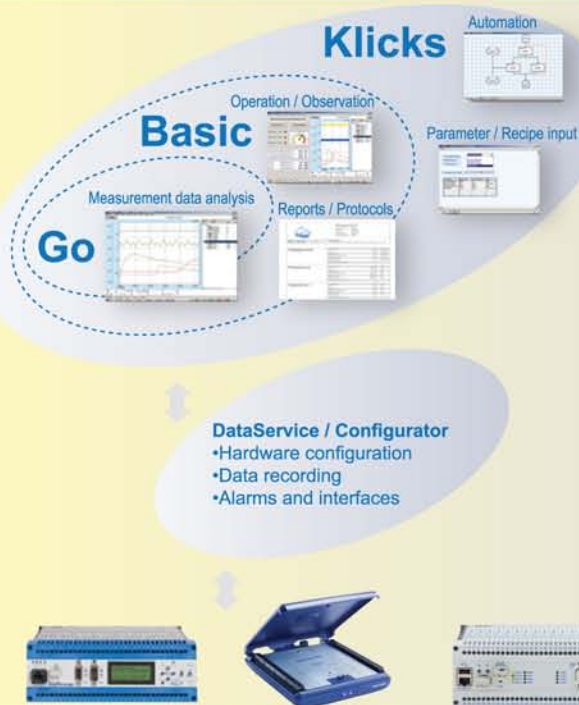


TS1100





Delphin with intelligent, universal data acquisition hardware and intuitive measurement software



## Overview of software modules:

### ProfiSignalGo :

ProfiSignal Go is a runtime system enabling measurement data to be displayed and analyzed in just three steps.

- Data acquisition and recording
- Data analysis and calculations
- Online and offline trending
- Data export

### ProfiSignal Basic :

ProfiSignal Basic is a developmental system for generating custom systems with visualization and trend functions.

- Operation and observation
- Process visualization
- Report generation

### ProfiSignal Klicks :

ProfiSignal Klicks is software for test automation and the programming of control systems.

- Automating test stands and process control system
- Automating evaluation and analysis functions
- Generating parameter graphs
- Selective frequency band evaluation



A Trend-App is available for the remote monitoring systems, experiments, trial and testing.



The universal measurement case is made of an extremely robust synthetic material and can cope with any bumps or knocks during transport or operation.





# GENESIS 64™

Hyper Historian™  
WebHMI™

EarthWorX™  
MobileHMI™



Powerful 64 bits solutions

Starting from 75 tags

Count active tags, once only



The Internet of Things:  
Access information from any device,  
anytime and anywhere.

MobileHMI

Tablet and Smart Phone



Multiple  
Remote Side  
Redundancy Collectors



Up to 2 TB RAM supported  
on Windows Servers

Historian with Redundancy solution



PLC and Controllers



Microsoft SQL Server

GEO SCADA –  
'Track dispersed /  
moving assets instantly!'

- 1 High end 64-bit computing technology that supports the full capability of a 64-bit Windows OS up to 512 GB RAM
- 2 Universal Connectivity – OPC UA server for PLC communication, BACnet (B-AWS), SNMP and databases.
- 3 High speed historian for large capacity data collections.
- 4 Supports IOS, Androids, Internet Explorer, Firefox, Safari and Chrome.







Microsoft Partner  
Gold Application Development



## Implement Multiple AnalytiX Solutions in One Central System!

- ▶ Productivity (OEE), Energy, Facility, Quality
- ▶ Servers, System interfaces, web / mobile accesses are shared.

Scalable OEE Solution – Benchmark, Analyse, Compare and Improve (reduce downtime)!

PLANT OPERATING TIME

PLANNED PRODUCTION TIME

PLANNED SHUTDOWN

OPERATING TIME

DOWNTIME LOSS

NET OPERATING TIME

SPEED LOSS

FULLY PRODUCTIVE TIME

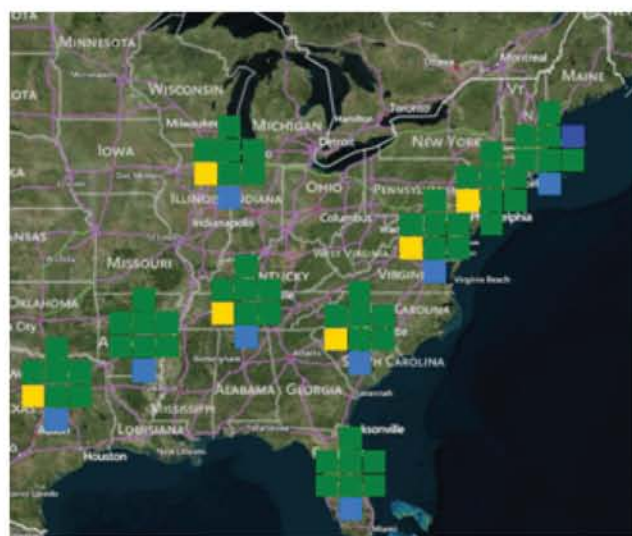
QUALITY LOSS



# AnalytiX™

## Productivity Analytics

- ▶ Leverage on Standard OEE Model
- ▶ Implement and compare with worldwide assets
- ▶ Greatly decrease labors and energy cost
- ▶ Use as downtime auditing tools



## Energy AnalytiX

Never too late to Save More Energy with ICONICS  
Energy AnalytiX, connect all types of energy meters

- ▶ Analyse cost, consumption and carbon footprint.
- ▶ Save time on implementation by directly using manufacturer data. Customizing calculations.



### Energy Management Program





# SLIO

The smart control and I/O system



**VIPA**<sup>®</sup>  
art of automation

1. Programmable with Speed7 Studio or Simatic Manager (Step7) and TIA Portal.
2. Ethernet interface for easy programming and communicating with touch panels and SCADA system.
3. Expandable work memory
4. Program and data storage using SD card
5. Configurable serial interface are Modbus RTU master / slave, MPI, ASCII etc.



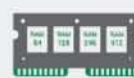
- 2 types of CPU (014 and 015).
- Use the same set of I/O modules. Interchangeable with VIPA SLIO CPU or VIPA SLIO remote coupler.

1  
**CPU**

014

015

2  
**Work memory**



3  
**Fieldbus**

master

slave

**EXOR**  
INTERNATIONAL

**ICONICS**

**Pro-face**  
for the best interface

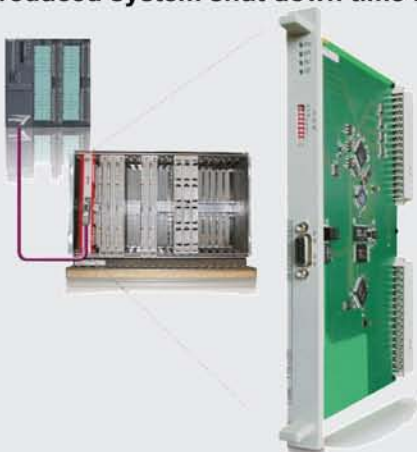


HMI touch-panels, SCADA



Up to 126 Profibus-DP slaves, 64 I/O modules per DP slave

## S5 Conversion - Upgrade existing Simatic S5 to SPEED7 solution 'Greatly reduced system shut down time for conversion!'



- From continuous 2 months shut down periods to several shut down, with each period of only 1~3 days.
- Successive conversion at minimum downtime.
- System roll-back is possible.

1. Use VIPA IM 306 DP slave for integrating S5 racks into S7 environment via Profibus-DP.
2. Compatible for 115U, 135U and 155U series.
3. Power supply replacement for 115U



# JMobile Studio

the human machine interface



**EXOR**  
INTERNATIONAL



## HMI + PLC Solution for eTOP 500/600 series



Available in Profibus, Can-Bus Expansion  
Multifunction I/O: 20DI, 10DO, 8AI and 4AO and PT100  
Compact I/O: 8DI, 6DO, 1 Relay  
CODESYS Module for ladder programming



- ▶ From 4.3" inch to 15" inch
- ▶ 64K LED Color Display
- ▶ Ethernet, USB, serial ports and MPI Integrated
- ▶ Support SD Card
- ▶ PLC (CODESYS) Optional Integrated
- ▶ SD Card Slot
- ▶ Protection class IP66 (Front)
- ▶ DNV, Class 1 Div 2

## Application in Marine, Oil & Gas and Hazardous Industry

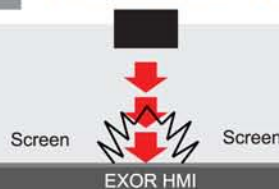


SERIES  
**500**  
GLASS  
NO LIMITS HMI



### HEAVY DUTY

Object Force: 69 to 100 Kgcm-2



- ▶ 7" inch and 15" inch
- ▶ 64K LED Color Display
- ▶ True Glass Projected Capacitive
- ▶ Protection class IP69K (Front)
- ▶ DNV, ATEX, Class 1. Div 2
- ▶ Ideal solution for extreme, outdoor, marine
- ▶ UV resistant
- ▶ Temperature range -20 °C to +60 °C

**600 SERIES**  
**TRUE GLASS HMI**

## True Glass Technology

**NEW**  
PRODUCT



coming soon..!

- ▶ Projected Capacitive: " True Glass " Touch screen
- ▶ From 5" inch to 21.5" inch
- ▶ Scratch & Harsh Chemical Resistant Surface
- ▶ UV Resistant
- ▶ Coating on all Electronic Boards
- ▶ Protection class IP66 (Front)
- ▶ DNV, ATEX, Class 1. Div 2





# UNIDRIVE M

AC and Servo Drive Family for Manufacturing Automation  
0.25 kW - 1.2 MW Heavy Duty  
100 V | 200 V | 400 V | 575 V | 690 V



**CONTROL  
TECHNIQUES**

www.controltechniques.com



M100

Up to 7.5 kW (10 hp)



M200

Up to 22 kW (30 hp)



M300

Up to 110 kW (150 hp)



M400



M600

Up to 1.2 MW (1600 hp)



M700

Open loop vector or V/Hz induction motor control

Enhanced open loop Rotor Flux Control for induction motors (RFC-A)



Open loop permanent magnet motor control (RFC-S)

Active Front End (AFE) power quality convertor

Closed loop Rotor Flux Control for induction motors (RFC-A)  
(M600 requires SI-Encoder option)

Closed loop permanent magnet/servo motor control (RFC-S)

## Mentor MP High Performance DC Drive

25A to 7400A

400V/575V/690V

Two or four quadrant operation



**On Board PLC**  
Easy to use onboard ladder logic PLC at zero cost, ideal for simple applications requiring extra drive functionality. Configured using SyPTLite.

**Applications with PLC or Motion functionality**



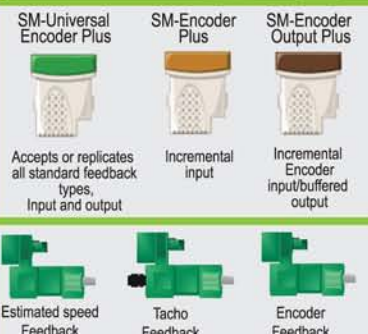
**SM-Applications Lite V2**  
Powerful automation controller using a dedicated microprocessor giving full drive parameter access. Configured using SyPTLite or SyPTPro software.



**SM-Applications Plus**  
Powerful automation controller with drive to drive networking and full motion capability. Configured using SyPTPro software.



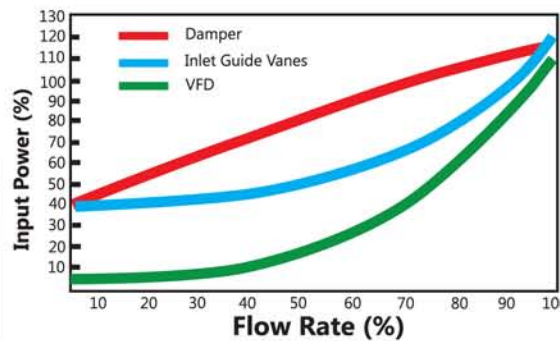
**SM-Register**  
High speed motion and registration control. Configured using SyPTPro software.





## HVAC/ACMV OPTIMUM COMBINATION

Reduces  
Harmonics  
to 5%



Affinity Law states flow, pressure and power proportionality to speed. VSD adjust fan speed to control flow and pressure. Reducing speed dramatically reduces power consumption and noise.



### U SERIES MATRIX CONVERTOR DRIVE

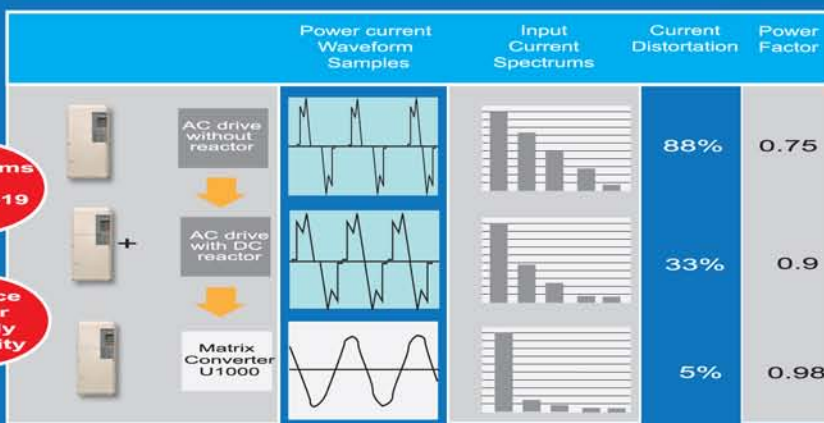
- Conforms to IEEE519
- Achieving 0.98 Power Factor
- Efficient Energy Usage by regenerating energy to Mains supply
- Foot Prints downsized without the needs for Harmonic filters, AC reactors to save panel size
- Switching to and from commercial power without contactors, phase detectors etc



### E SERIES HVAC DRIVE

Setting	Application
00	General-purpose
01	Water Supply Pump
03	Exhaust Fan
04	HVAc Fan

3.7- 630KW



Confirms to IEEE519

Reduce power supply capacity

### POWER REGENERATIVE UNIT

#### R1000



- 200V(3.5-105KW), 400V(3.5-300KW)
- Reuse waste energy to save energy
- Suitable for Crane, Lifters, Lifts, etc
- Reliable for ten years of durable performance due to careful selection of electronic components.
- More Braking Power
- 54% Energy Savings applicable to Lifts

#### E1000 Terminal Block



- Application preset function for easy setup
- 400V class 3.7KW-630KW
- Monitor power consumption via 4-20mA output
- Components carefully selected and designed for 10 years life expectancy
- Products compiled to CE,UL,cUL & EU's RoHS directive
- Power ride through of 2s possible
- Removable Terminal Block for parameter Transfer



# Wide Spectrum Harmonic Filter



Frees up system capacity by restoring VSD to near unity power factor

The most energy efficient harmonic solution for VSD's

Low capacitive reactance ensures generator compatibility

Meets harmonic limits for both land and marine VSD applications

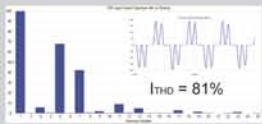
**Apply LINEATOR wherever Variable Speed Drives and 6-Pulse Rectifiers are used**

- Oil and Gas industry
- Water and Waste Water
- Irrigation systems
- HVAC systems
- Mining operations
- Marine vessels
- Printing presses
- Elevators and escalators
- Pulp and paper processing

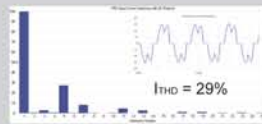
## Improves VSD Performance

Other applications include:

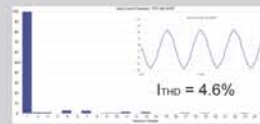
- Induction furnaces
- Industrial rectifiers
- Welding operations



VSD Input Current Waveform and Spectrum with no reactor.



VSD Input Current Waveform and Spectrum with AC reactor.

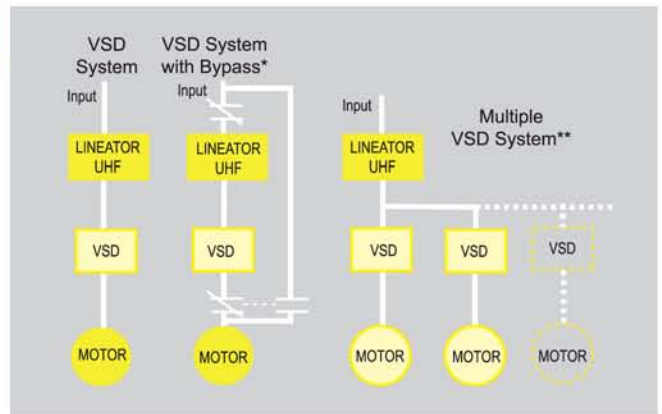


VSD Input Current Waveform and Spectrum with LINEATOR AUHF.

## Performance Comparison on 60 HP PWM VSD LINEATOR™ vs Other Passive Treatments

	Input Current			Power Factor
	Waveform	Spectrum	THD	
6-Pulse Rectifier, PWM VSD			72.9%	.79 lag
With 3% AC Line reactor			35.6%	.90 lag
12-Pulse VSD			9.3%	.98 lag
With MIRUS LINEATOR™			5.8%	.99 lag

## LINEATOR™ Application



High impedance L1 winding

Multiple windings on a common core

Compensation winding L2 lowers through impedance reducing voltage drop

Input tuned below 5th to prevent importation of upstream harmonics

Output tune near 7th to remove load side harmonics

Unique reactor design allows for smaller cap bank to reduce voltage boost and reactive power at no load.

Lineator™ Internal Connection Diagram



Factory



Data Centre



Vessel

Installations

Real-world performance for real-world loads.

Making non-linear loads linear.

A history of innovation



# Load Cell, Torque

## Force & Instrumentation



**FUTEK**  
ADVANCED SENSOR TECHNOLOGY

Y-M-F-A-M-I-L-E-C-E-D-A-O-L



Miniature Family



Load Button Family



S-Beam Jr. (LSB200)



Thru-Hole Family



ISO 17025



In-Line Load Cell Family



S-Beam Load Cell Family



Rotary Torque Family



OEM Solutions



ANSI Z540-1

Samples in Seconds

USB Load Cells

Load Cells



LCA Series (Compression)  
Canister  
USB Load Cell



LCB Series (Tension/Compression)  
Rod End  
USB Load Cell



LLB Series (Compression)  
Load Button  
USB Load Cell



LCF Series (Tension/Compression)  
Pancake  
USB Load Cell



LSB Series (Tension/Compression)  
S-Beam  
USB Load Cell



TAT Series (Reaction)  
Screw Driver  
USB Torque Sensor



TAT Series (Reaction)  
Socket Extension  
USB Torque Sensor



TDF Series (Reaction)  
With Flange USB  
Torque Sensor



TFF Series (Reaction)  
Thru hole USB  
Torque Sensor



TRD Series (Rotary)  
Rotary USB  
Torque Sensor

Torque Sensors

SENSIT



IPM650  
Intelligent Panel



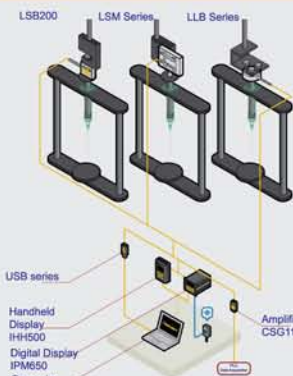
CSG110  
Strain Gage Amplifier  
Enclosed w/ Din Rail Mount



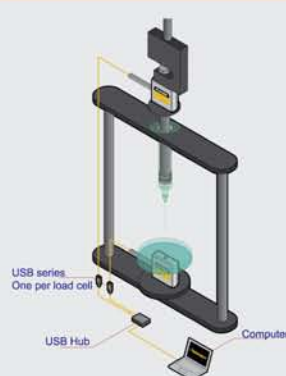
IHH500  
Intelligent Digital  
Hand Held Display



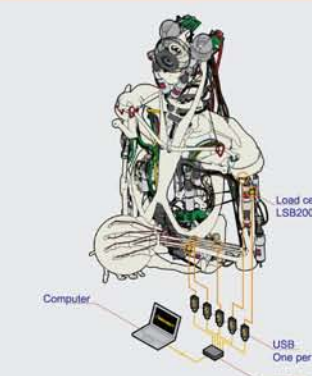
USB220  
External High  
Resolution/Speed USB Output Kit



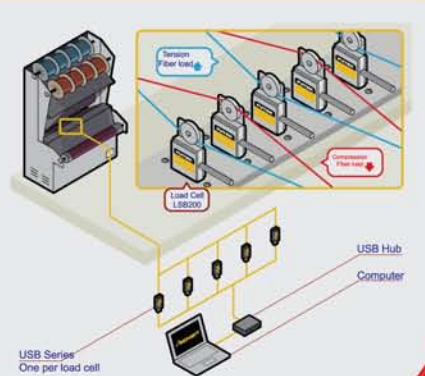
OEM Test Stand



Syringe Test Stand



Humanoid Robot Load Cell



Wire Tension Measurement



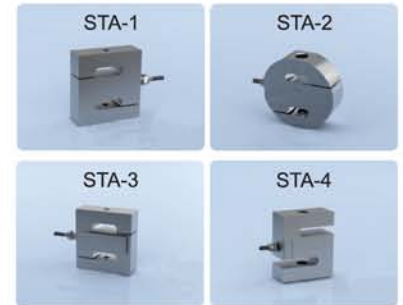
# Compression Load Cell



**LCM SYSTEMS**  
SOLUTIONS IN LOAD CELL TECHNOLOGY



	Wireless Output (120m)			
	Strain Gauge Output			
	Dual Strain Gauge Output			
	In-Cell Amplifier (4~20mA)			
	4~20mA Output			
	Digital Load Cell (18Bits ADC)			



## Application :

- Hanging Scales
- Material/ Tensile test
- Engine Dynamometer
- Process Weight
- General force measurement



Standard Load Pins

- 500kg to 1500te
- Stainless steel
- IP67
- Simple to install

Custom Design Load Pins

- 100kg to 1500+ te
- Stainless steel
- Many design options
- ATEX version

Shackle Clevis Load Pins

- 1te to 1500 te
- Stainless steel
- IP67
- Special version available

Magtrol Type Load Pins

- Magtrol 210 alternative
- 2.5 to 1250KN
- Stainless steel
- IP67



IECEX, ATEX Approval for Exd Zone 1  
Ups to 1500 ton, with free design.

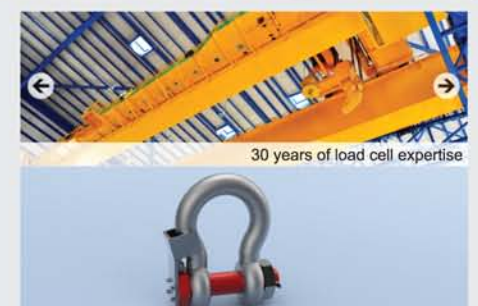
				<b>Tension Compression</b>
				<b>Load Links</b>



Load cells for all applications & environment



Innovation in load cell technology



30 years of load cell expertise

Marine Winches

Crane safety work load monitoring

Lifting Hoist load monitoring



Automation

Crane

Oil & Gas

Civil

Aviation

Process

Yachting

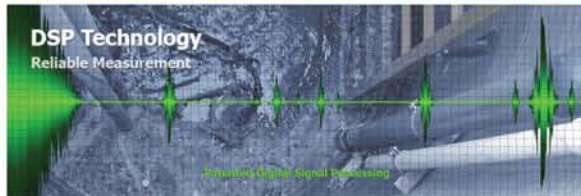
Automobile



# We Do Your Level Best®

## Measurement, Automation & Safety

**FLOWLINE**  
We Do Your Level Best



### Corrosive Level Measurement

- 0.2% accuracy with little or no degradation over the range
- Auto-adaptive signal output filtering smooth liquid agitation
- Narrow 2" beam width for installation near walls or obstacles
- Tight 2" dead band optimizes the filling capacity of small tanks

### Ultrasonic Level Transmitters



EchoSafe	EchoTouch	EchoSpan	EchoSonic	EchoPod
	<ul style="list-style-type: none"> <li>• Level measurement range: 1.25...10m</li> <li>• Output signal: 4~20mA</li> <li>• Pressure up to 2bar</li> <li>• Material: PVDF</li> </ul>			<b>Application:-</b> <ul style="list-style-type: none"> <li>• Bulk storage</li> <li>• Chemical feed</li> <li>• Cooling tower</li> <li>• Day tank</li> <li>• RO/DI water</li> <li>• Waste sump</li> <li>• Life science</li> <li>• Lift station</li> </ul>

### Level Switch Sensors - Ultrasonic, Vibration, Capacitance, Optic & Buoyancy



#### Level Switches

- Output signal: SPDT / SPST switch output
- Up to 80 °C process temperature
- Suitable for high corrosive media
- High velocity / coating media
- PP, PVDT & PFA material

### Level Switch Packages - Ultrasonic, Vibration, Capacitance & Buoyancy



- Level measurement range: up to 3m
- Function: Auto fill, Empty, Hi & Lo Alarm
- Contact: 1...4 SPST
- Material: PP, 316SS, PFA
- Points: Fixed & Adjustable

Smart Trak	Switch-Pak	Fluid-Point	Switch-Pro
------------	------------	-------------	------------

### Display & Relay Controllers



PodView	DataLoop	Commander	DataPoint	DataView
---------	----------	-----------	-----------	----------

- Display: LCD & LED
- Function: Hi & Lo Alarm
- With repeater
- Relays output
- Input: 4~20mA





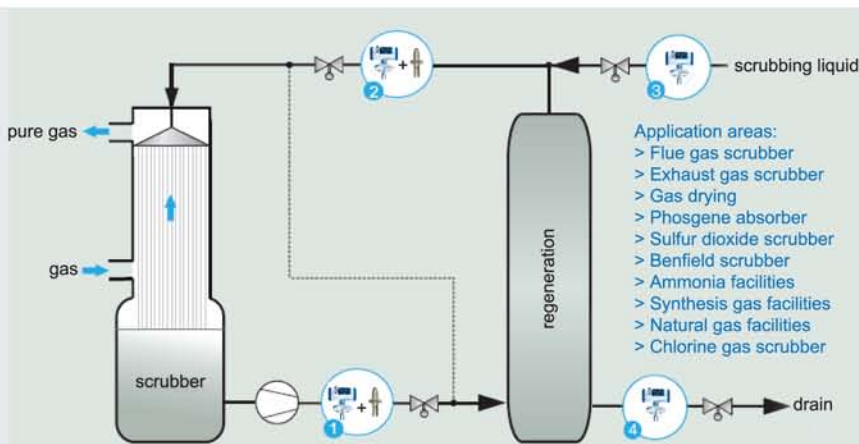
## Ultrasonic Liquid Concentration Sensor



**Absolute dedication:  
We are the application specialists.**

- ▶ Concentration and density measurement
- ▶ Phase interface detection
- ▶ Product receipt monitoring
- ▶ Neutralization
- ▶ Gas scrubbers
- ▶ Evaporators
- ▶ Polymerization monitoring
- ▶ Crystallization monitoring

**Your industry, your applications.  
From the complex to the extraordinary.**



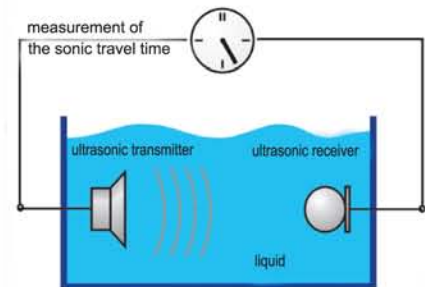
**SensoTech**  
In liquids, we set the measure.



**Improve quality, productivity and save resources.  
It's not a miracle, it's SensoTech.**

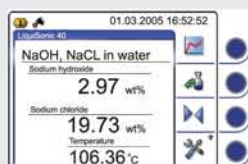


**LiquiSonic®. The measuring system  
that sets new standards.**



- ▶ independent of the color, conductivity and transparency of the process fluid
- ▶ measuring accuracy up to 0.1 wt%
- ▶ high respond in measurement rate.
- ▶ installation directly in pipelines or vessels
- ▶ bypass-free installation
- ▶ robust sensor design without gaskets or moving parts, maintenance-free.
- ▶ Field application use temperature from  $-90^{\circ}\text{C}$  to  $200^{\circ}\text{C}$
- ▶ integrated temperature measurement
- ▶ use at pressure up to 500 bar

**Real Time Monitoring.**





# Pressure Transmitters



**STS**  
global.sensor.excellence

**Your partner in  
Water Management**

**Able to customize  
according to your needs.**

- Pressure type
- Pressure range
- Process connection
- Electrical connection
- Signal output
- Accuracy
- Temperature range

## Available Option

Pressure measuring range: 100mbar...1000bar

Accuracy: 0.05%, 0.1%, 0.25% FS

Output: 0...5VDC, 0...10VDC, 4-20mA

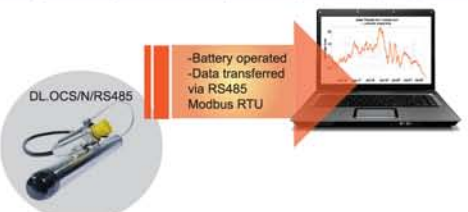
Operation temperature: -40°C...85°C

Process temperature: -25°C...150°C

Special calibration range available upon request

Material: Stainless steel, Titanium, Hastelloy

Type: Gauge, Absolute (Vacuum), Sealed gauge



**Data Logger**

Pressure and Temperature Transmitters			Submersible & temp transmitters	



**Water Treatment**



**Desalination**



**PTM/N/RS485**  
Programmable submersible level and temperature transmitters

PC Configuration Software



Modbus RTU

High Accuracy

Lightning Surge Protection



**Aviation**



**Shipbuilding & Marine**





### Budget Indicator & High Accuracy

#### Input

Encoder

Vibration

Resistance

Pressure

Strain Gauge

Thermocouple

RTD

LVDT



#### Output

TTL Logic

PWM

Voltage

24 Linearization

Current (mA)

Serial Modbus

Alarms Output

Contact Closure



Tracker 211  
Universal Input, 0.05% Accuracy  
4 Digit Display



Tracker 212  
24 points user linearization, 0.05%  
Accuracy 5 Digit Display



Tracker 220  
Universal Input, 0.02% Accuracy  
Modbus communications



#### Rotary



SWN-8B Standard  
Flange Type

#### Rotary



NL-8B Standard  
Flange Type

#### Vibration



KVK-111 High  
Sensitivity Type  
Screwed Joint Type

#### Vibration



KVK-111  
Standard Type

#### Diaphragm

KF-500  
Flange Type \* Detection Pipe Type



#### Capacitance

P2-17  
Teflon coating Type,  
Flared Straight Electrode



#### Capacitance

B1  
Standard Type, Straight Electrode



#### Capacitance

B440  
Super-sensitivity Type,  
Straight Electrode



#### Capacitance

B410.H3  
Ultra Heatproof Type,  
Straight Electrode





# Precision Driven



## Contact / Non-contact displacement measurement

### orbit3

Solartron Metrology have a wide range of gauging "pencil" probes and instruments, each designed with specific, customer driven advantages.

- ▶ Pneumatic and Spring available from 0.5mm to 20mm range
- ▶ Up to 0.05% F.S accuracy, 0.05µm repeatability, 0.01µm resolution
- ▶ Ø8mm, Ø6mm and Ø3mm probes available
- ▶ Smaller size and range probes for tight space
- ▶ Down to 3 gram tips force

#### Standard DP Spring Push

- 0.5, 1, 2.5, 10 and 20mm
- measuring ranges
- 0.7 N Tip Force
- IP 65 Rating

#### DT Feather Touch

- As low as 0.18 N Tip Force
- Ideal for glass, electronics and delicate surfaces
- 2, 5, 10 and 20mm measuring ranges
- Available in both spring and pneumatic

#### DW Ultra Feather Touch

- Low 0.03 to 0.06 N of tip force
- Idea for delicate surfaces
- 10mm measuring range
- Available in both spring and pneumatic
- Not ideal for side-load applications



### orbitACS

A modular systems based on modbus protocol for easy low cost connections into PLC or Automation. You can combine gauging probes, Orbit LT, Orbit LTH on the same stack of modules.



### orbit3 Bluetooth®

Wireless interface module .The Wireless Interface Module (WIM) allows communication between any PC with a Bluetooth® connection and the Orbit® sensor network. It is possible to connect up to 150 sensors to the WIM. It can take up to 25 static readings per second for up to 8 modules and is the best way to optimize readings using the read burst command.



## Orbit® 3 Digital Measurement System

## orbit3 Digital Network

## Connect To Third Party Sensors



UFT checking a cell phone screen



Gap Time Feature



UFT checking Hard Disk Drive casing



UFT checking semi-conductor water



# More Precision

**Non-contact sensors** for displacement and position



## Laser Triangulation sensor

- Suitable for most material
- Varies models for selection
- Special model for long standoff applications
- Patented technology for surface compensation

## Chromatic Confocal Sensor

- Possible to measure multi-layer coating thickness
- Miniature probe,  $\varnothing 4\text{mm}$
- High speed sampling up to 70kHz
- Resolution, 16nm



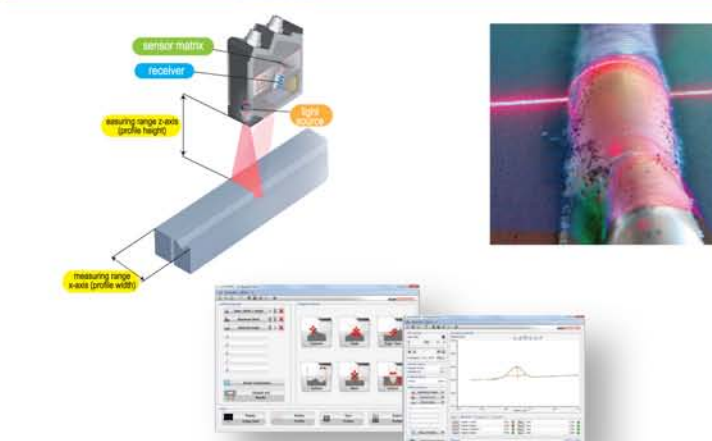
## Capacitive Sensor

- Single or multiple channel models available
- Up to  $\pm 0.05\%$  Linearity, 0.000075% resolution
- Operation temperature up to  $+200^\circ\text{C}$
- Suitable for both laboratory and factory operation



## Eddy Current Sensor

- Up to 400 sensors for selection
- Immunity to oil and dirt, moisture etc
- Excellent temperature range and stability
- Suitable for industrial applications



## 2D/3D Profile Laser Scanner

- High accuracy and profile frequency
- High performance signal processor
- Different types of output for integration
- Suitable for gap, step height profile measurement



## Optical Micrometers

- Models with Laser or LED light source
- High speed model available
- Suitable for gap, diameter, edge and presence



## optoNCDT ILR:

Compact laser distance sensors



Compact and reliable

- 200 - 50000mm
- ± 20mm
- 10ms

State of the art sensor with high precision

- 100-150,000mm
- ±2mm
- 20ms



Compact and fast distance sensors (no reflector)

- 200-10000mm
- ±8mm
- 12ms

High-performance distance sensor

- 0.5-3000m
- ±20mm
- 0.5ms

## thermoMETER

Non-contact IR temperatures sensors



- 1 High-Performance IR sensor with double laser aiming
- 2 Infrared sensor for general purpose applications
- 3 Compact infrared temperature sensor for OEM applications
- 4 Handheld devices

## colorSENSOR // Colour Sensors, LED Analyzers



- ▶ Compact color sensors
- ▶ Standard color sensors
- ▶ High-end color sensors
- ▶ Optical fibers

Magneto-inductive sensors for non-contact linear displacement measurement



Benefits of the measuring principle

- ▶ Selectable measuring ranges up to 55mm
- ▶ Linear output signal
- ▶ High basic sensitivity and temperature stability
- ▶ Completely non-contact
- ▶ Wear-free
- ▶ High dynamics



Measuring through non-ferromagnetic materials

# Draw-wire

displacement and position sensors



Example of draw-wire sensor



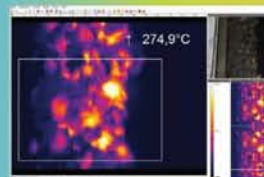
- ▶ Measuring ranges to 50,000mm
- ▶ Resolution quasi infinite
- ▶ Compact overall design
- ▶ Easy mounting for any application
- ▶ High reliability and long life cycle
- ▶ Analog and digital outputs

## thermoIMAGER TIM

Compact Thermal Imager



- ▶ Automatic hot spot detection
- ▶ Fast measurements
- ▶ Easy process integration
- ▶ Software Features
- ▶ BI-SPECTRAL technology



TIM Cooling jacket (length 228mm, ø89mm) with adjustable mounting bracket TM-JAB-TIM; recommended high temperature cable TM-USBC5H-TIM (up to 180°C)

## Industrial endoscopes for defect detection and quality assurance



Rigid endoscopes – ELTROTEC borescopes



Flexible Endoscopes - ELTROTEC Flex



Video Endoscopes - ELTROTEC Video



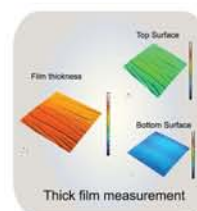
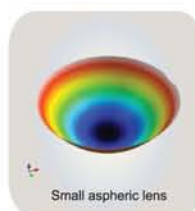
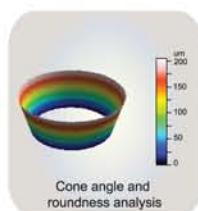
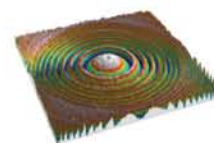
Endoscopy accessories



# CCI—Coherence Correlation Interferometry 3D Non-contact Surface Optical Profiler



- ▶ Breakthrough method, measure smooth and rough surface in single scan
- ▶ Low noise level < 0.02nm
- ▶ Single scan range of 2.2mm
- ▶ Stitching of 3D part up to 25mm
- ▶ Optional software to do film thickness application
- ▶ Selectable model with high measurement points of up to 2048 X 2048
- ▶ High speed model available

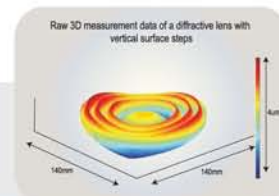
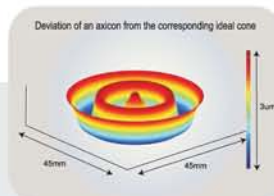
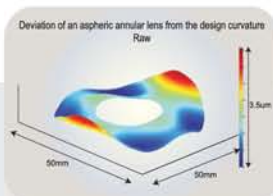
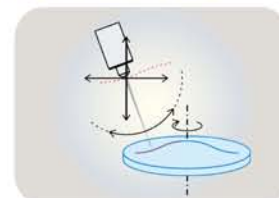


## LUPHOScan

### Multi-WaveLength Interferometer (MWLI) Fast Non-Contact 3D Form measurement of Aspheric Optics



- ▶ High speed 3D measurement
- ▶ Ultra high, reproducible accuracy,  $\pm 50\text{nm}$
- ▶ Works for almost every material
- ▶ Measure up to  $90^\circ$  slope
- ▶ Measure up 120mm, 160mm or 240mm



## Alignments and Autocollimators

### Clinometers



For Precision angle measurement

### Talyvel 6



For precise level flatness measurement

### Alignment Systems



For Straightness, Alignment, Verticality, Parallelism, Squareness and Level

### Ultra Dual Axis Digital Autocollimator



For measuring angle, straightness, flatness, squareness and parallelism



# Surtronic product range



## Portable Roughness Tester

- ▶ 9 roughness parameters to choose from
- ▶ Diamond stylus and piezoelectric pick up
- ▶ Repeatability of 2%, Accuracy of 5% + noise
- ▶ Easy to use

DUO

S100 series

## Portable Roughness Tester

- ▶ Evaluation length up to 25mm
- ▶ Up to 400µm gauge range
- ▶ Heavy-duty Li-poly battery up to 2000 measurements
- ▶ Able to measure at right angle



INTRA Touch

## Surface finish and contour

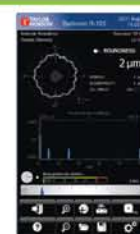
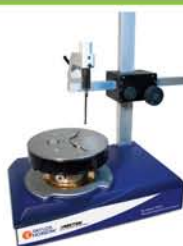
- ▶ 50mm traverse length with 0.5µm data spacing
- ▶ 6nm gauge resolution at 1mm full range, 3nm at 0.2mm
- ▶ Straightness error of 0.4µm over 50mm
- ▶ Patented Ball calibration to ensure integrity of data



Surtronic R-Series

## Roundness

- ▶ Robust, fast & easy-to-use
- ▶ Max Diameter 300mm, Max weight 20kg
- ▶ 2mm Gauge range
- ▶ Up to 6nm resolution



## Form Talysurf Range



- ▶ Up to 5mm gauge range
- ▶ Less than 8nm noise, Rq
- ▶ Pt error less than 0.25µm
- ▶ Resolution of 4nm



## Form Talysurf PGI



- ▶ Ultra precision surface form and finish system
- ▶ Varies model customized for different industries
- ▶ Selectable resolution based on requirement

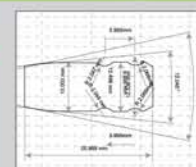
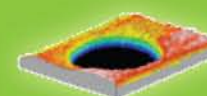
## Talyrond Range

**The Talyrond 500H**  
A new concept in roundness measurement

**Measurement System**

All in one

1. Roughness
2. Roundness
3. Contour
4. 3D Mapping





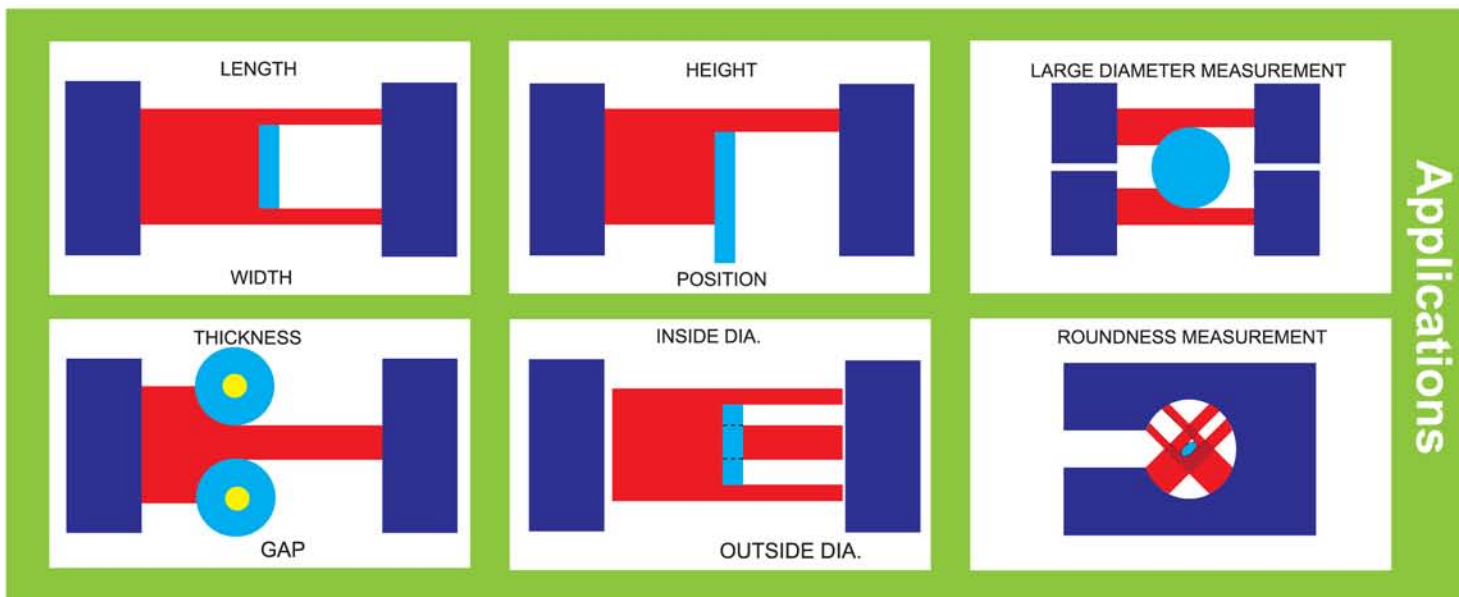
# Laser Scan Micrometer



STANDARD TYPE		
Model	Range (mm)	Accuracy
LDM-301H	0.02-1	$\pm 1 \mu\text{m}$
LDM-302H	0.05-5	$\pm 1 \mu\text{m}$
LDM-303H	0.3-30	$\pm 2 \mu\text{m}$
LDM-304H	0.5-90	$\pm 5 \mu\text{m}$
LDM-305H	1-180	$\pm 10 \mu\text{m}$
LDM-306H	2-300	$\pm 30 \mu\text{m}$

DUAL AXIS		
Model	Range (mm)	Accuracy
—	—	—
LDM-302H-XY	0.05-5	$\pm 1 \mu\text{m}$
LDM-303H-XY	0.3-30	$\pm 2 \mu\text{m}$
LDM-304H-XY	0.5-90	$\pm 5 \mu\text{m}$
LDM-305H-XY	1-180	$\pm 10 \mu\text{m}$
LDM-306H-XY	2-300	$\pm 30 \mu\text{m}$

SEPARATE SCANNER		
Model	Range (mm)	Accuracy
—	—	—
—	—	—
LDM-303H-SP	0.3-30	$\pm 2 \mu\text{m}$
LDM-304H-SP	0.5-90	$\pm 5 \mu\text{m}$
LDM-305H-SP	1-180	$\pm 10 \mu\text{m}$
LDM-306H-SP	2-300	$\pm 30 \mu\text{m}$



Applications



LDM-110



LDM-110EX



LDM-210



LDM-1000

	LDM-110	LDM-110EX	LDM-1000	LDM-1000EX	LDM-210
No.Axes	For Single	Max. 2	Max. 5	Max. 3	For Single
Scanning cycle	400 time / sec	400 time / sec	400 time / sec	400 time / sec	2000 time / sec
No. of Averaging time	1 - 2048 (16 steps)	1 - 2048 (8 steps)	1 - 2048 (22 steps) LDM-1000LS 1 - 1024 (19 steps) LDM-1000XY		1 - 2048 (12 steps)



LDM-1000EX



# Product Training Facility

## Professional Training

Costs reduction  
and improved system designs through training

Hands-on,  
in-depth interaction with products in training class

Training availability in training centers across Malaysia & Singapore



## Product Repairs & Services

Providing local repairs and servicing for our customers

Helping customers to reduce cost and machine down time

Works are carried out by trained  
and experienced technicians  
Quick Services & Affordable!







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