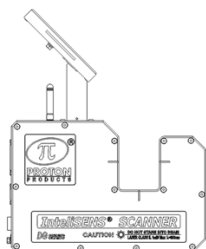# InteliSENS®
DG1000 Series
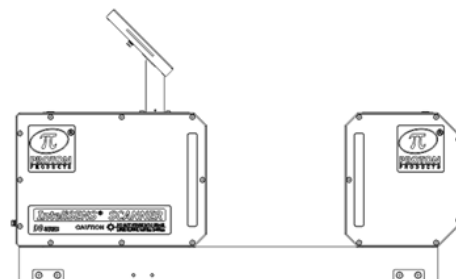
*DG1000 Series*

| DG1030 i4	DG1060 i4	DG1130 i4

The InteliSENS® DG i4 Series of laser scanning diameter gauges provides fast, accurate and repeatable measurements for products manufactured within critical tolerance limits. Robust industrial design ensures reliable operation in the most challenging of production environments.   The compact design and use of advanced Digital Signal Processing electronics make these gauges extremely easy to integrate. The gauge head features RS232, RS422, RS485, Ethernet and CANbus as standard; Profibus, Profinet, Ethernet/IP and Wifi are an available option. Analogue and contact closures are provided in the optional PSU-BOB-DG, and CS3G-C units. These NEXiS® series control systems enable cost effective and accurate process control for manufacturers of wire, cable, tubing, piping and many other continuously produced materials.
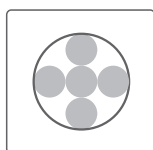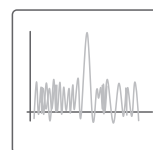
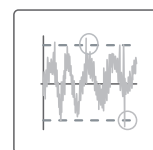## MEASUREMENT MODES AND FEATURES
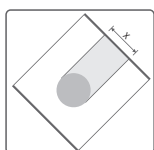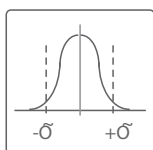
X - DIAMETER	SPC	HELIX	FFT	SSFD

TECHNOLOGY

- Scan Time (ST) is a function of the Scan Velocity (SV) and the Gate Size (GS).

$$ST = \frac{GS}{SV}$$

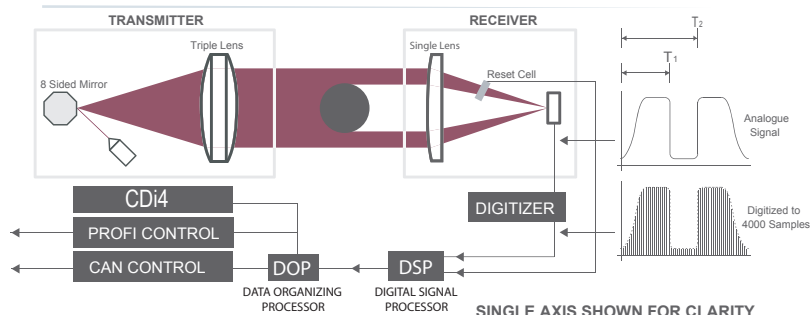- Edge Position (EP1) is Scan Velocity (SV) x Time T1

$$EP1 = SV \times T1$$

- Edge Position (EP2) is Scan Velocity (SV) x Time T2

$$EP2 = SV \times T2$$

- Product Dimension

$$OD = EP2 - EP1 \text{ or } (T2-T1)$$

TRANSMITTER — Triple Lens — 8 Sided Mirror — CDi4 — PROFI CONTROL — CAN CONTROL — DOP — DATA ORGANIZING PROCESSOR

RECEIVER — Single Lens — Reset Cell — DIGITIZER — DSP — DIGITAL SIGNAL PROCESSOR

T_2 — T_1 — Analogue Signal — Digitized to 4000 Samples

SINGLE AXIS SHOWN FOR CLARITY

BENEFITS

- 600 Scan/sec
- Single Scan Analysis
- Non-Contact Measurement
- Multiple Measurement Modes
- Eliminates Operator Measurement Error
- 100% Qualty Inspection
- Advance DSP Technology
- Unaffected by Speed and Vibration
- Excellent Resistance to Dust and Dirt
- Compact, Robust Design
- IP65, NEMA4 Protection
- Intelligent Sensor
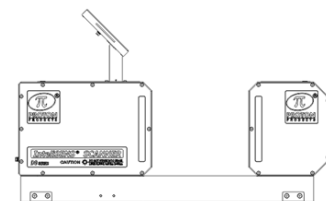- Ethernet in Gauge head as Standard

SPECIFICATIONS
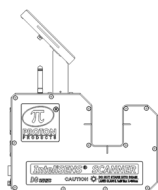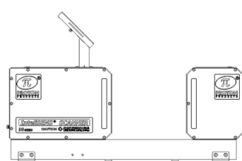
Model	DG1030 i4	DG1060 i4	DG1130 i4
Gate Size	30mm (1.181inch)	60mm (2.362inch)	130mm (5.118inch)
Minimum Size	0.1mm (0.004inch)	0.2mm (0.008inch)	0.5mm (0.0197inch)
Maximum Size	27mm (1.063inch)	57mm (2.244inch)	130mm (5.118inch)
Accuracy : 0.008%	0.001mm (0.00004inch)	0.0015mm (0.00006inch)	0.01mm (0.0004inch)
Resolution	0.001mm (0.00004inch)	0.001mm (0.00004inch)	0.001mm (0.00004inch)
Gauge Dimensions	290 x 63 x 175mm	550 x 140 x 375mm	722 x 140 x 280mm
Gauge Weight	5kg (11lbs)	8kg (17.6lbs)	10kg (22lbs)

Measurement Rate	600 scans / second
Units of Measurement	mm,inch
Gauge Power	24Vdc 1 Amp
Temperature Range	5°C-45°C(41°F - 113°F)
Relative Humidity	90% 38°C (105°F)
Degree of Protection	IP65,NEMA4

Gauge Head Serial I/O	**Standard:** RS232, RS422,RS485, CAN-bus, Profibus, Profinet, EtherNet/IP **Options:** WiFi

Digital Inputs	Reset, Print Activation (User Configurable)
Relay Outputs	Gauge ok, Upper Tol, Lower Tol, SMFD (User Configurable)
Line Speed Inputs	Analogue Input (0-10 Vdc user scalable), Speed pulse input (250Khz$_{max}$,30V/50V$_{max}$ pulse, user scalable)

Optional	
Analogue Outputs	-/+10V$_{dc}$ outputs of diameters or errors (User scalable)
PI feedback Controller	Proportinal Integral Feedback Controller
Statistics	Maximun, minimum,mean,standard deviation, Cp, Cpk
SPC	Statistics Process Control Automatic set point for PI feedback controller(requires PI feedback controller option)
FFT	Fast Fourier Transform analysis for amplitude and frequency of periodic diameter variations
SMFD	Single Measurement Flaw Detection (Lump and Neck detection)

COMMUNICATIONS

Standard: in all DG gauge heads

Option: in DG Gauge Head

CAN ETHERNET RS232 & RS422/485 PROFIBUS PROCESS FIELD BUS PROFINET INDUSTRIAL ETHERNET EtherNet/IP

WiFi DeviceNet

ACCESSORIES

KAL 30, KAL 60
Calibration Kits

GRS 30
Guide Rollers

SiDi-CDi4
Gauge Head Indicator

PSU-BOB-DG
Power Supply Unit and
Break-out box

DB25 interface
DB25 pin cable between
Gauge to PSU-BOB-DG

HST-3

DG1000 Series

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