SENCON
SENSING • TESTING • GAUGING

Master Series™

Automatic Front End Gauge

MASTER SERIES

Fully automatic measurement of can height, mid and top side wall thickness, and dome depth on un-necked, trimmed beverage cans.

The fully automatic Front End gauge, part of the modular Master Series™ gauging range, is available in a single probe variant which can measure up to 12 vertical and numerous radial positions in a single cycle. The multi-probe versions, on the other hand, offer rapid concurrent measurement for increased cycle speed.



- **Automatic measurement of critical features**
- **Multiple can sizes without change parts or adjustment**
- **No operator influence on results**
- **Well proven technology with excellent R&R**
- **Constant self monitoring/self calibrating**
- **Multi-probe versions for rapid or detailed side wall measurement**
- **A compact semi-automatic benchtop version is also available that uses the same advanced technologies**

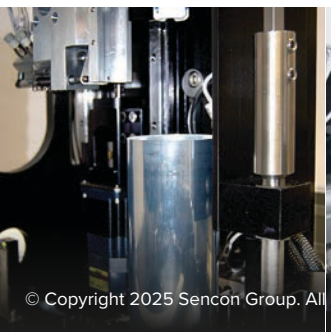
SINGLE PROBE VERSION: Measures the thickness of the side wall at multiple locations, with a maximum total of 255 readings. This includes up to 12 vertical locations (ranging from 40 mm below the bottom of the can) and numerous radial positions. The data obtained can be used for side wall modeling to determine the transition point. However, since the side wall measurements are taken after the can height and dome depth readings, the overall cycle time is slightly extended.

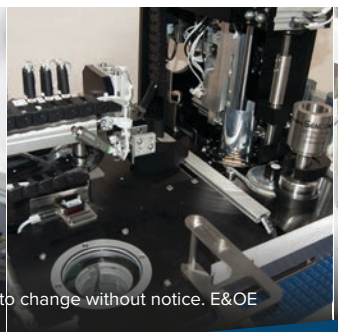
MULTI-PROBE VERSIONS: The Dual-Probe model measures the top and mid walls simultaneously at two fixed heights, thereby reducing the overall cycle time. The Triple-Probe model achieves the same reduction in cycle time by measuring the top and mid walls simultaneously at three fixed heights.

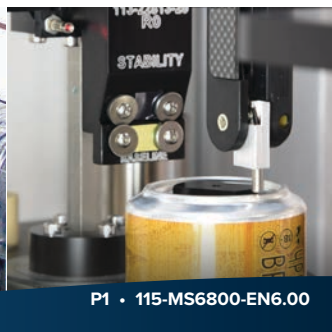
* Probe heights are specified by the customer at the time of ordering.

MULTIPLE CAN SIZES: Cans with different can diameters and heights can be measured with no need for change parts. So several standard can sizes and shapes can easily and quickly be tested with a single gauge.

ONE SETTING PIECE: Every measurement for every batch is automatically qualified using a single UKAS certificated setting piece (for all can sizes). The gauge constantly monitors its own performance and recalibrates if drift is detected. A single setting piece not only saves time and storage space, but also saves costs as only a single setting master requires annual certification. Sencon supply two identical setting pieces, so one can be used while the other is sent for certification.







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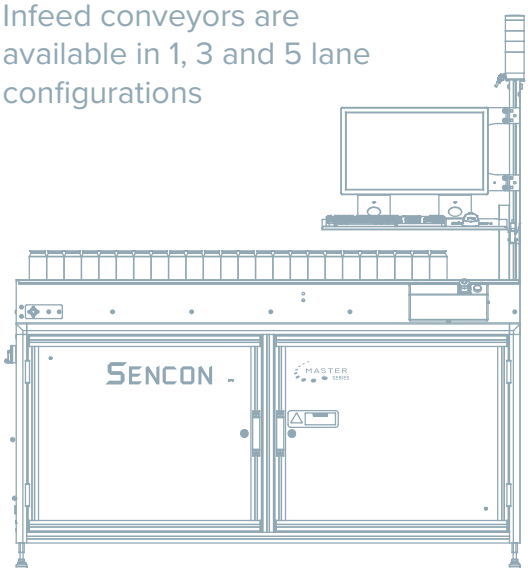
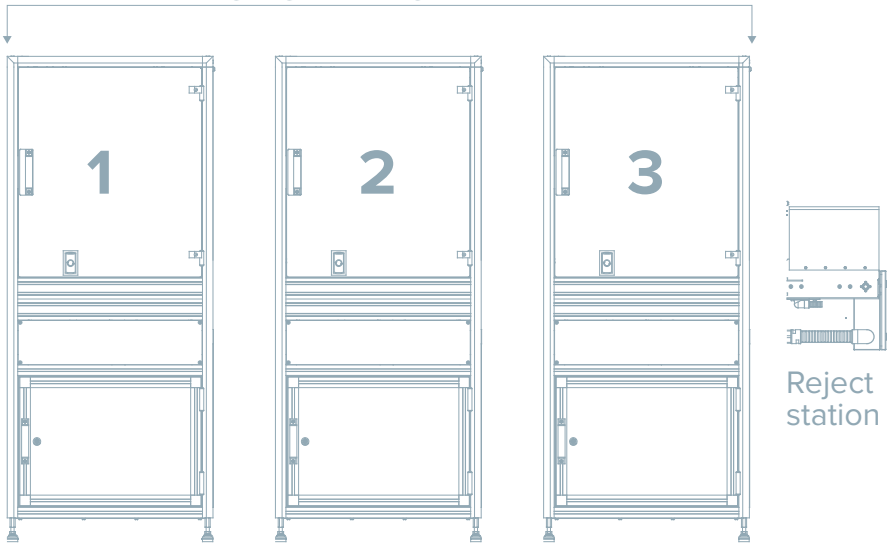
CREATE YOUR PERFECT GAUGING SUITE

Infeed conveyors are available in 1, 3 and 5 lane configurations



Up to 3 gauges configured in parallel



Reject station

Minimum configuration (plus reject station)

TYPCAL SYSTEM CONFIGURATIONS

Back End Suite: Back End + Axial Load + Buckle

Coatings Suite: Film-Scan™ + Enamel Rater

Ordering Information

DESCRIPTION	CAN SIZE	HEIGHT
Master Series™ Front End Gauge: Standard – Single Probe	202 to 211 automatic adjustment	87mm to 196mm automatic adjustment
Master Series™ Front End Gauge: Standard – Dual Probe	202 to 211 automatic adjustment	87mm to 196mm automatic adjustment
Master Series™ Front End Gauge: Standard – Triple Probe	202 to 211 automatic adjustment	110mm to 196mm automatic adjustment
Master Series™ Front End Gauge: Large can – Single Probe	300 single size	87mm to 196mm automatic adjustment
Master Series™ Front End Gauge: Large can – Dual Probe	300 single size	87mm to 196mm automatic adjustment
Master Series™ Front End Gauge: Large can – Triple Probe	300 single size	110mm to 196 mm automatic adjustment

Core Module & Conveyor Options

CODE	DESCRIPTION
210-22215-00	Master Series™ Core Module with Single Lane Conveyor
210-22240-00	Master Series™ Core Module with 3 Lane Conveyor
210-22250-00	Master Series™ Core Module with 5 Lane Conveyor

Each lane has a capacity of 24 cans (211 diameter). Automatic in-line feed is possible as special option on all lanes. Conveyor extensions are also possible.

Options & Accessories

CODE	ITEM	DESCRIPTION
395-16151-00	Bodymaker ID Camera	Optional ID camera for identifying the Bodymaker mark on the can. This is typically installed on the first Master Series™ module of a multi-gauge system.
096-24090-00E	Spray ID Camera	Optional ID camera for identifying the Spray Machine mark on the can. This is typically installed on the first Master Series™ module of a multi-gauge system.
OPC	OPC-UA Plug-in	Adds OPC-UA fuctionallity to Process Master ™ gauge software for machine-to-machine (M2M) communication within the Industry 4.0 digital factory.

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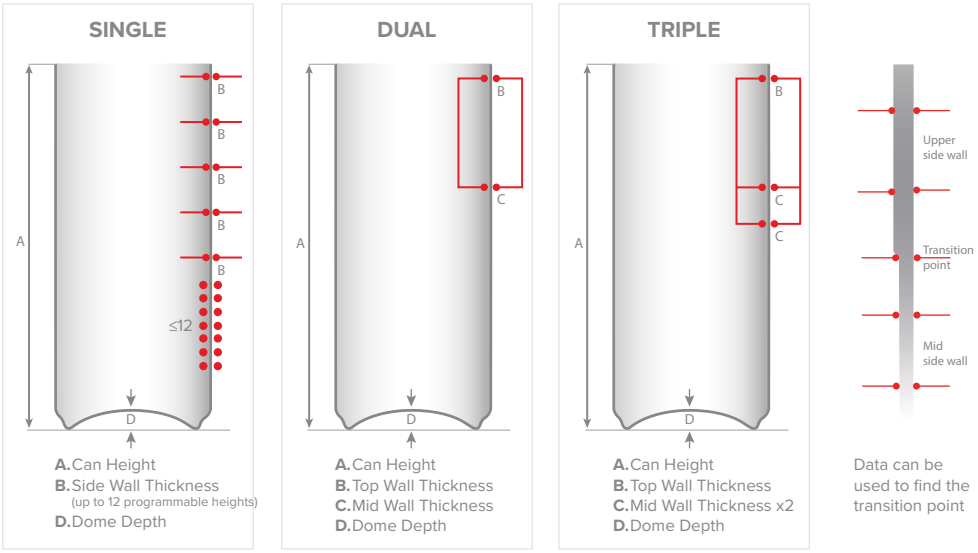
TECHNICAL SPECIFICATIONS

Can Material:	Aluminium and Steel
Maximum Batch Size:	255 cans (auto fed), 24 cans (manual fed)
Accuracy:	Can Height: ±0.01mm (±0.39 thou) Side Wall Thickness: ±0.001mm (±0.039 thou) Dome Depth: ±0.01mm (±0.39 thou)
Measurements:	Capabilities for single, dual and triple probe variants.



A. Can Height
B. Side Wall Thickness (up to 12 programmable heights)
D. Dome Depth

A. Can Height
B. Top Wall Thickness
C. Mid Wall Thickness
D. Dome Depth

A. Can Height
B. Top Wall Thickness
C. Mid Wall Thickness x2
D. Dome Depth

Data can be used to find the transition point

CONTROL	
Controller:	Process Master™ gauge software running on an integrated PC within the Conveyor module
Measurement Reporting:	Batch results displayed on PC screen and optionally sent as report to network storage or network printer.
Loading:	Automatic
OPERATING PARAMETERS	
Temperature Range:	Ambient temperature: 10 to 40 0C (standard variant) 10 to 50 0C (extended temp variant, see end note 9)
Relative Humidity:	Relative humidity: 0% to 80% non-condensing
Ingress Protection:	IP20
Weight:	230kg (507lb) Gauge only
Dimensions:	Gauge cabinet (including rear chute) **Width:** 1053 mm (41.45”) **Depth:** 780 mm (30.70”) **Height:** 1840 mm (72.44”) For full system, add the following to the width: **Reject station:** 375 mm / 15.0” **Single Lane Conveyor:** 1941 mm (76.42”) **3 or 5 Lane Conveyor:** 2401 mm (94.53”)
MAINTENANCE AND CALIBRATION REQUIREMENTS	
Maintenance:	Routine user maintenance: see user manual Service interval: 1 year Wear parts: refer to spares and servicing lists
Calibration:	Integral stability check performed at start of each batch (unless disabled). Gauge re-baselines using supplied setting piece when stability check shows it is necessary. Annual calibration of setting piece and re-validation of gauge accuracy is strongly recommended
DESIGN STANDARDS AND SAFETY	
Compliance	**CE:** Complies with relevant EU product directives UKCA: UK Conformity Assessed
Safety:	Red, amber and green beacons to indicate system status from a distance Relay outputs for flexible triggering of external (customer) warning systems

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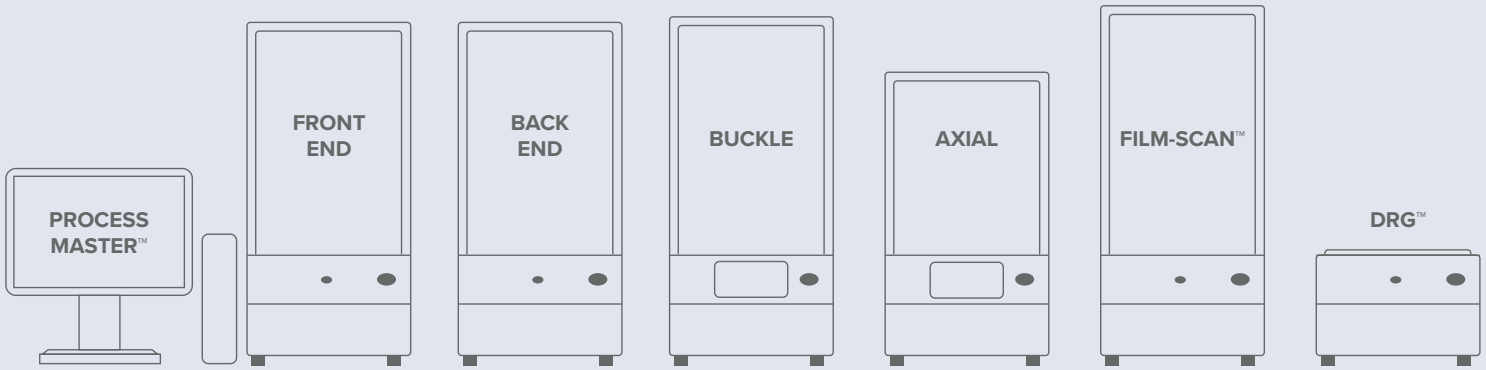
BENEFITS OF MASTER SERIES™

The modular design of our highly flexible and fully automatic Master Series™ gauges allows you to create the perfect combination of gauges to suit your individual requirements. This cost effective solution is the perfect fit for the modern can plant, saving time and floor space.

MULTI-SIZE CAPABILITY AS STANDARD: The gauges can handling system has been designed to accept standard beverage can sizes without change parts.

MODULAR SYSTEM: Allows gauges to be purchased individually or as integrated groups. Individual gauges can be added at a later date to increase throughput or add test features.

- Fully automatic, operator-free measurement
- Sampling on time or production basis
- Fully self-checking
- Data available on screen and exchanged via local area network
- Uses well-proven measurement techniques
- Modular design for cost effective expansion
- Future-proofed for changing requirements – easily update and reconfigure at any time
- Multi-lane capability – universal infeed conveyor



BIG ON CAPABILITY, SMALL ON SIZE

The Benchmark™ range of semi automatic benchtop gauges for the modern can plant

WORLDWIDE SUPPORT YOU CAN TRUST

We are committed to providing the best customer support worldwide with service engineers based in North and South America, Europe and Asia backed up with technical support from experienced industry specialists based at three technical support centers – you can trust Sencon.

Technical support is easily accessible through our 'Quick Assist' QR codes which offer support via WhatsApp*, email, web chat and telephone. Additionally, our online knowledge base provides support resources for all Sencon products.

*only available in Europe, Asia, Africa and Oceania



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