

Magnescale

SPEED X PRECISION

Magnescale

SPEED X PRECISION

Leading Edge Technology
for Leading Edge Manufacturing

Digital Gauge

Digital Gauge General Catalog



Magnescale Co., Ltd.

| | | | | |
|--------------------------------|---|------------------------|------------------------|--------------------------------------|
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Magnescale Co., Ltd.

摺動力。

The power of superior engineering design

Legendary reliability, quality and Magnescale technology are all part of the Digital Gauge products.

The Magnescale Digital Gauge products use a high-grade magnetic recording and detecting principle which has been developed over 50 years.

The Digital Gauge products embody the reliability and quality that Magnescale is known for. Magnescale Digital Gauges feature high resolution and high accuracy, along with environmental, shock and vibration resistance that are a unique feature to our magnetic detecting principle.

Sub-micron repeatability and improved torsion resistance comes from an innovative spindle design that enables environmental protection up IP67, allowing for a wide range of applications.



Detection Principle MR Sensor

- ▶ Unique magnetic detecting principle
- ▶ High speed sampling (20MHz)
- ▶ No thermal drift

Spindle Design Ball Spline Spindle Construction

- ▶ 250 Million cycles in testing
- ▶ 5 times greater radial load strength
- ▶ High shock and vibration resistance

National measurement standards Traceability

- ▶ Accuracy inspection and calibration to national standards completed on certified equipment.
- ▶ Calibration certificates issued on-site

■ Wide variety of PLC fieldbus interfaces available

■ USB interface gauge with free software

■ Wide product lineup for various applications

■ Nationwide service & support network

■ Excellent resistance to harsh environments **IP67 versions available**

The magnetic technology of the Digital Gauge makes it highly resistant to water, oil and condensation.

Leading Edge Technology
for Leading Edge Manufacturing

Digital Gauge

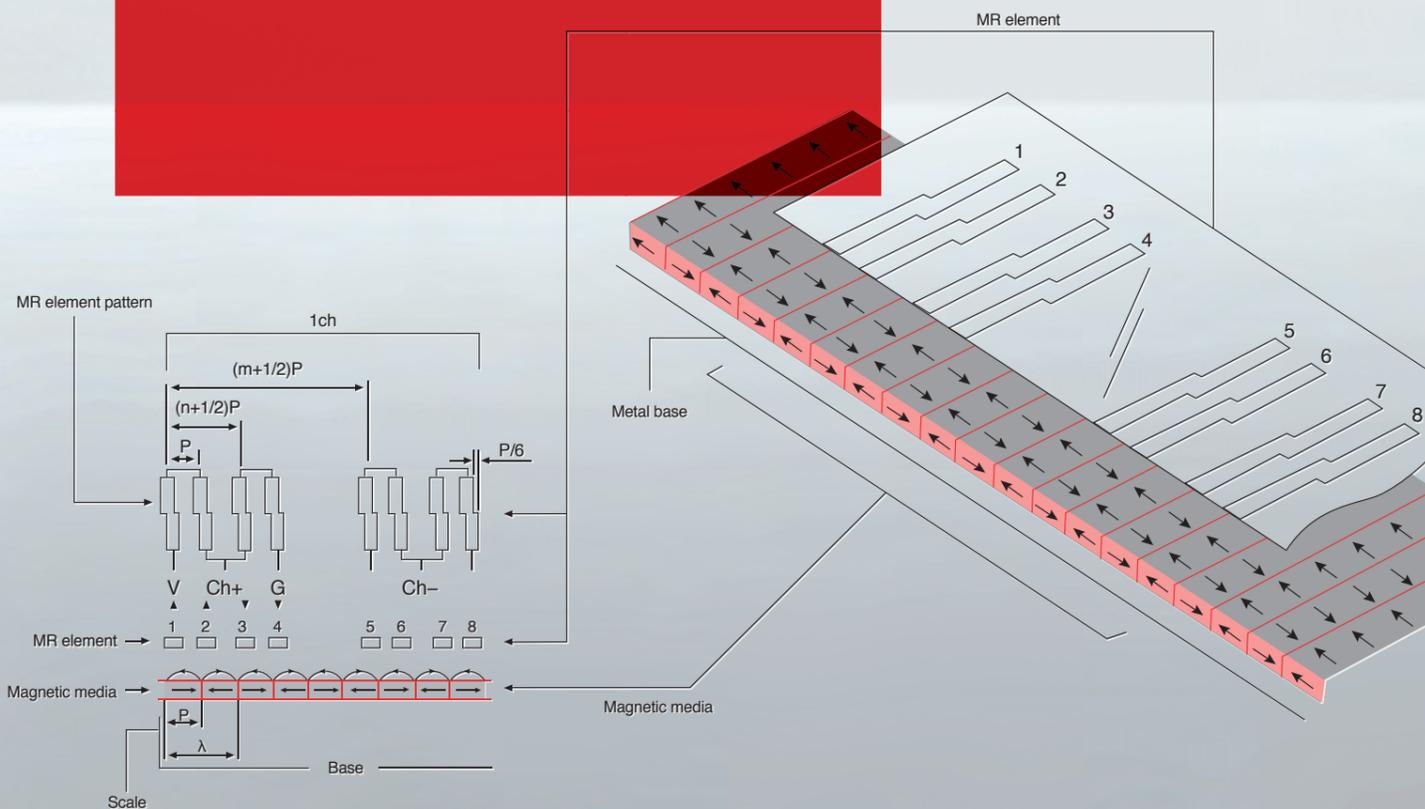
Using a magnetic detecting principle allows for both high accuracy and high environmental resistance.

<Detecting Principle>

MR Sensor

Precise magnetic recordings are applied to a special proprietary magnetic material.

Using a MR (Magneto Resistive) sensor with a unique detecting pattern allows for high accuracy, and also allows for high environmental resistance and strong resistance to temperature changes.



High Response Speed

- ▶ Over 20 million readings per second
- No tracking errors with high speed sampling

Repeatability of $\pm 0.1 \mu\text{m}$ or better (2σ)

- ▶ Uses a continuous processing circuit
- A quadrature signal (sine/cosine) from the sensor and processing via a proprietary sequential processing circuit fulfills $0.1 \mu\text{m}$ resolution and $\pm 0.1 \mu\text{m}$ repeatability.

No Calibration

- ▶ Digital signal processing
- The signal is processed digitally, which does not require signal calibration like an differential transformer method.

No warm up time

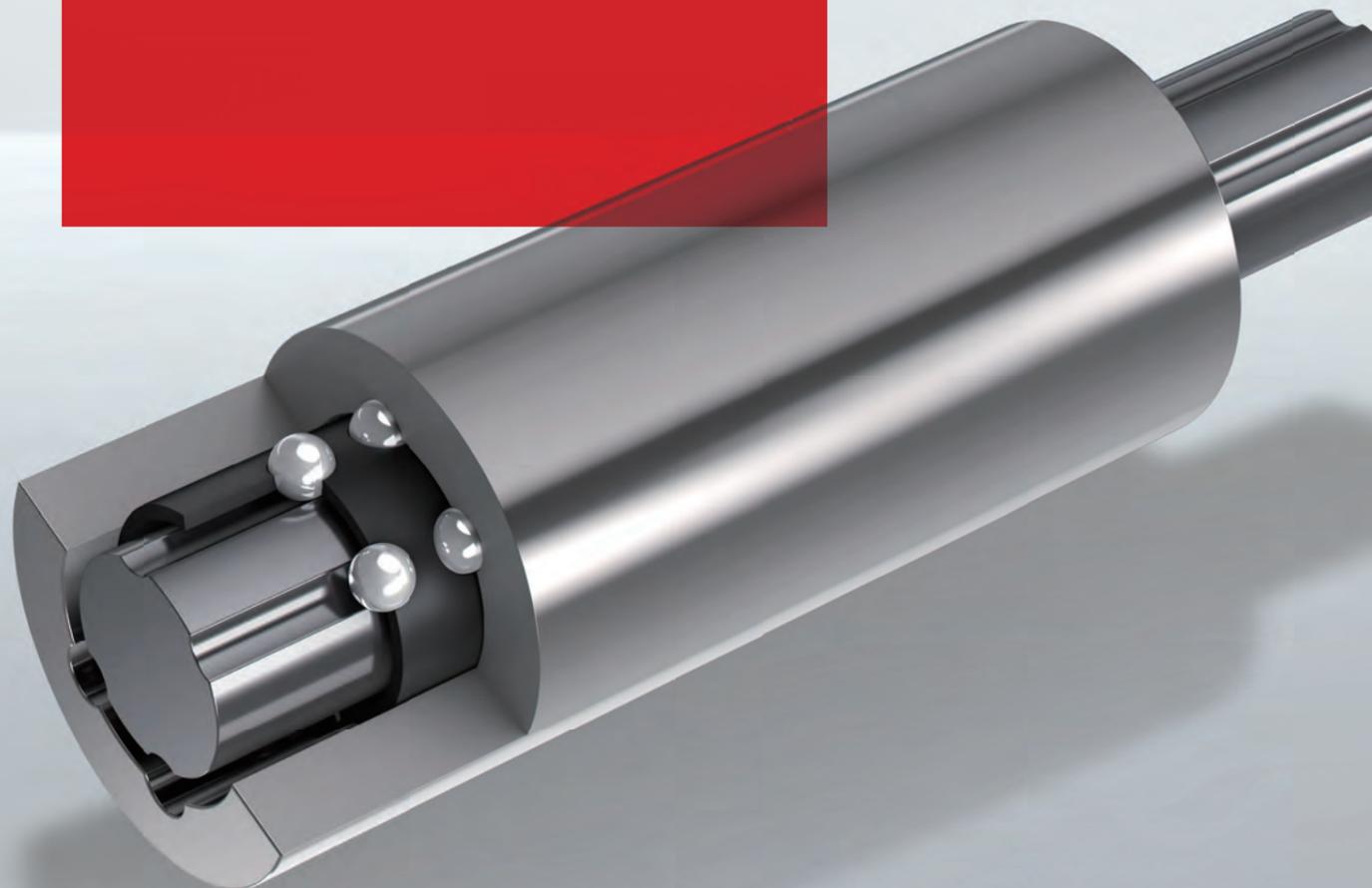
- ▶ Excellent temperature characteristics
- There is no required warm-up time or stand-by time. The Digital Gauge can be used immediately upon power-up.

<Spindle Design>

Ball Spline Spindle Construction

The Digital Gauge has been improved with both repeatability and spindle performance due to the ball spline spindle construction. Long operational life, with excellent shock and vibration resistance help reduce overall maintenance costs.

(As of May 2019, the gauges have reached 270 million strokes in an on going evaluation.)



Improved performance to 250 million cycles

High Durability

▶ Lower lifetime cost

The number of cycles has reached 270 million, with a theoretical value of 250 million cycles. High durability, excellent vibration and shock resistance, along with the ball spline spindle construction contribute to a long operational life for a wide variety of applications.

Lower the fluctuation of spindle resistance

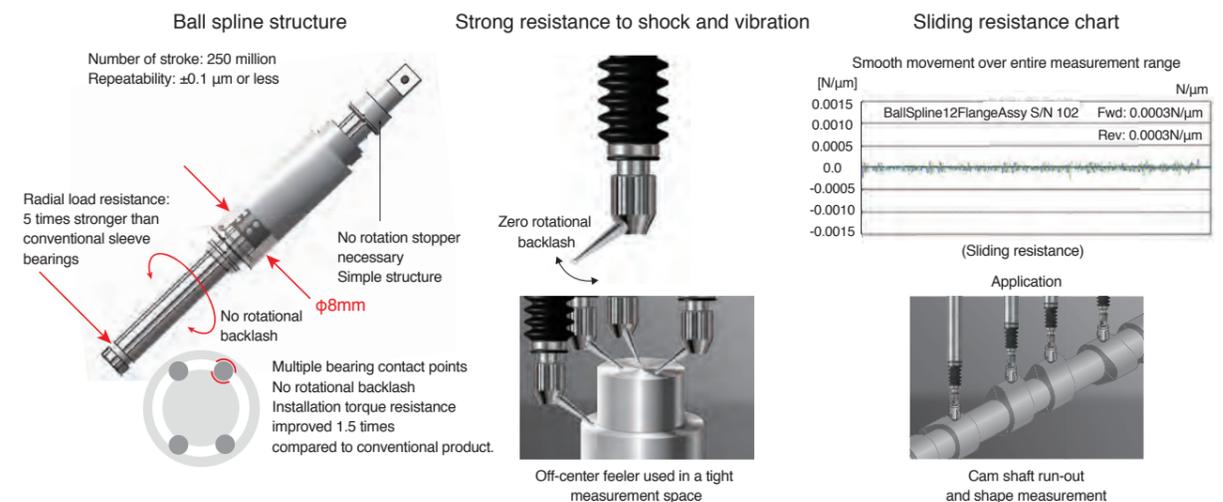
▶ Improve high repeatability by stable spindle resistance

Repeatability has reached $\pm 0.1 \mu\text{m}$ or better due to the ball spline spindle design with optimized pre-load control and precision cut groove.

Strength against radial loads

▶ The bearing structure strengthens the entire spindle

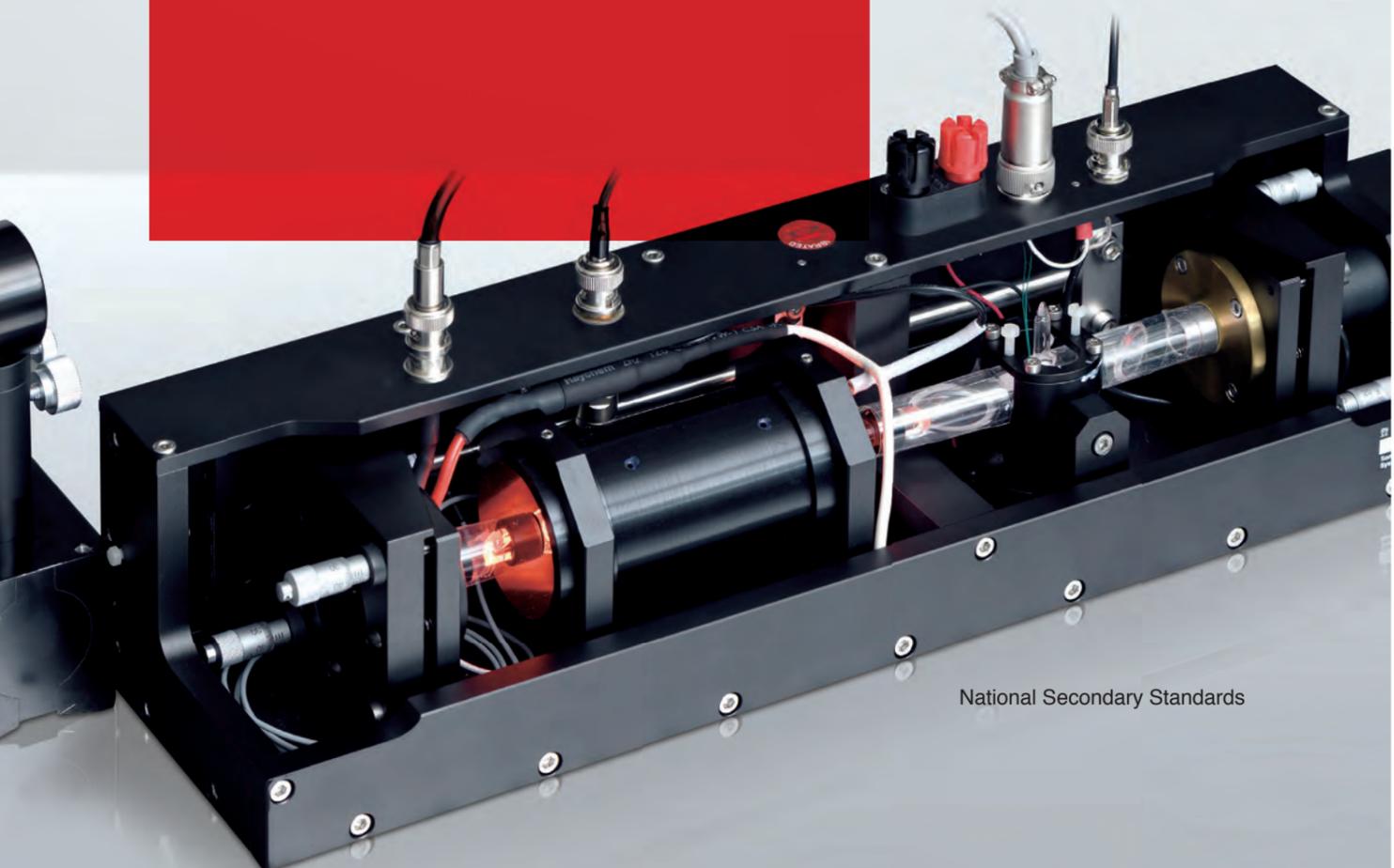
Due to the multiple points where the bearings come into contact with the spindle splines, the radial load capability is 5 times stronger than linear bush type, and allows for accurate measurements even at an angle and installation torque resistance improved 1.5 times.



<National measurement standards>

Traceability

Magnescale Co., Ltd. is an authorized calibration contractor. An accuracy chart is attached with every product. Measurement data is generated by equipment traceable to national standards. Magnescale can also issue a calibration certificate after a products ships.



National Secondary Standards

All Magnescale Digital Gauges are traceable to national measurement standards

All Magnescale measuring and inspection equipment is calibrated to national measurement standards

▶ Inspection and calibration traceable to the national measurement standards

Magnescale Co., Ltd. performs regular accuracy inspections and calibrations to ensure compliance.

Accuracy measurement during manufacturing

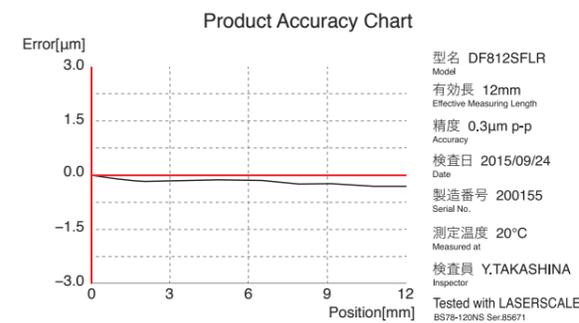
▶ Each product is shipped with an accuracy chart

All Digital Gauge products are shipped with an individual accuracy chart. If a customer loses a chart, we can re-issue it based on serial number information.

Product calibration certificates generated on-site

▶ Calibration certificates are also available after the product has shipped

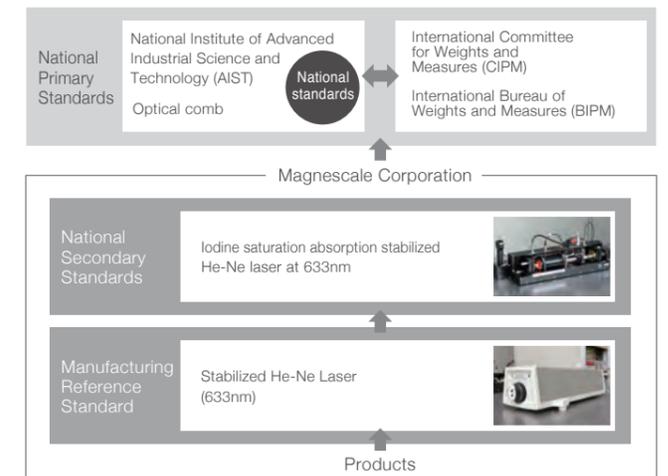
An accuracy chart is included with each shipment. Product calibration certificates required for ISO certifications are created on-site. Calibration certificates are also available after the product has shipped.



Certificate of Calibration



Length traceability system

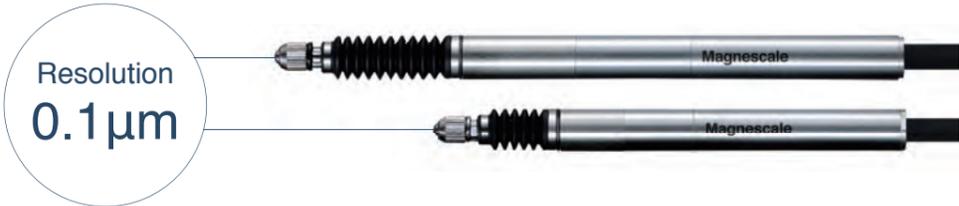


A diverse lineup of gauges for a range of applications

High Resolution

Using high-precision measurements, we improve the accuracy of post process assembly. Slim and compact, and offering 0.1 micron maximum resolution, these gauges also feature a highly durable mechanical structure capable of more than 270 million strokes.

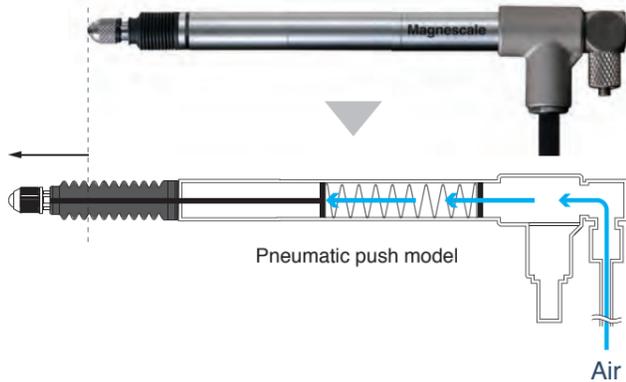
- ▶ DS800S series
- ▶ DF800S series
- ▶ DK800S series



Air-driven

Using air allows for measurements to be tailored to the measurement piece and the application.

- ▶ DK800S series
- ▶ DF800S series
- ▶ DS800S series
- V model : Pneumatic push
- L model : Vacuum suction
- ▶ DT series



Flange Mount

Reduces the cost for custom mounting hardware, and lowers installation time.

- ▶ DS800S series
- ▶ DF800S series
- ▶ DK800S series
- F Type



The ideal measurement solution for every application

Robust, long measurement range

Long measurement ranges allow for objects of various sizes (205mm maximum). The robust structure creates superior environmental resistance and rigidity, and is able to be used in a wide range of applications.

- ▶ DK series



General Purpose

The general purpose models can be used in simple applications, such as assembly checks and dimensional measurements. Lower cost, but still applicable to a wide range of applications.

- ▶ DT series



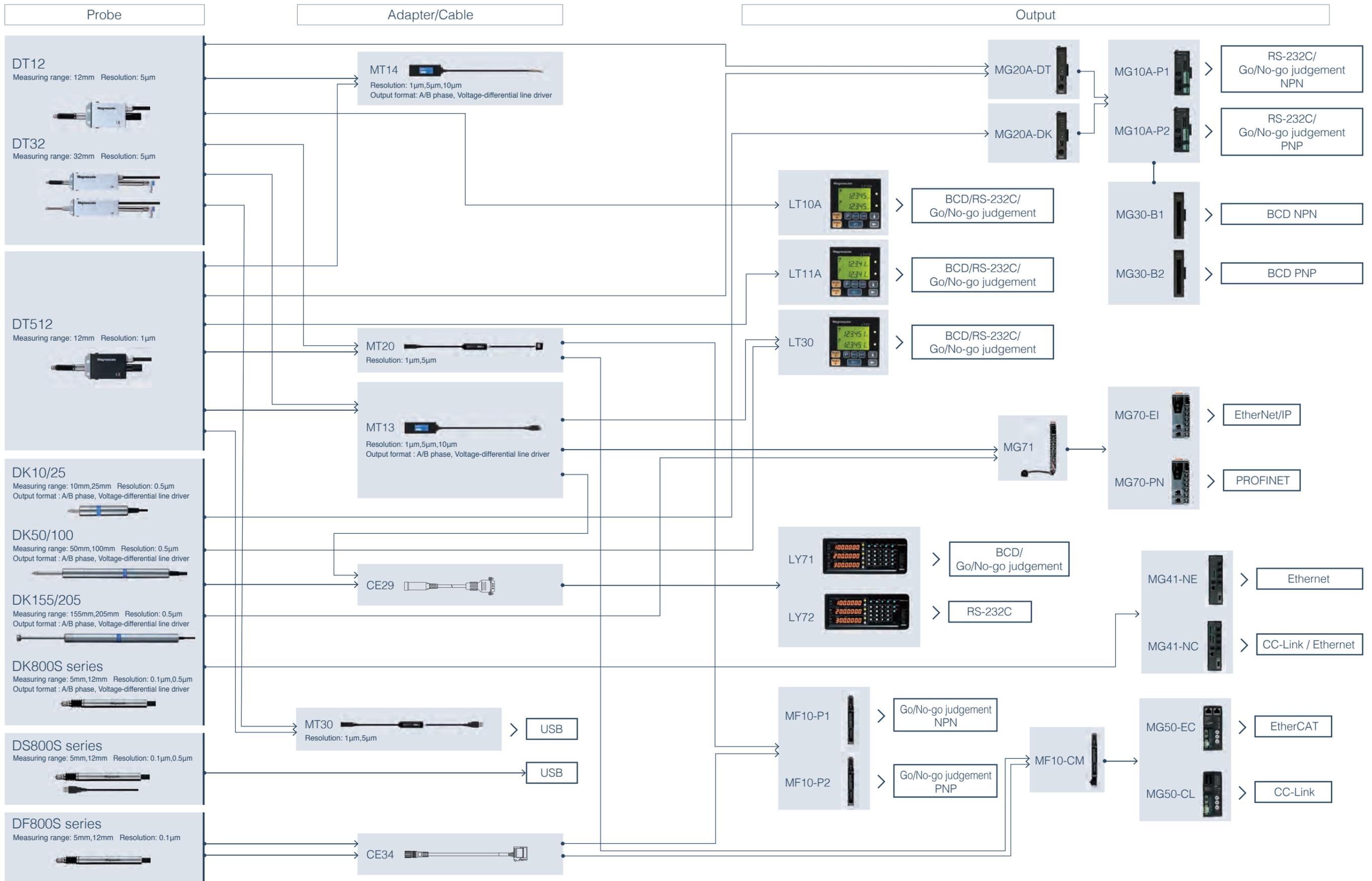
USB Connection

Able to be directly connected to a computer via USB, enabling simple data acquisition. Perfect for post-process inspection.

- ▶ DS800S series



Connection diagram



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Probe

| | |
|-----------|----|
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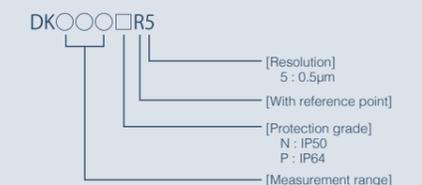
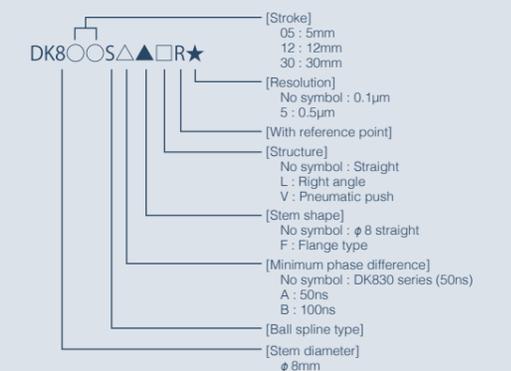
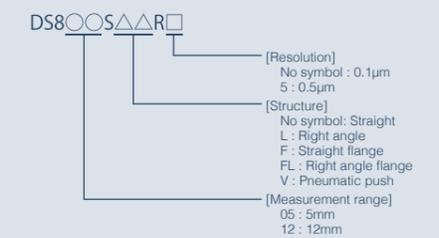
Global Network

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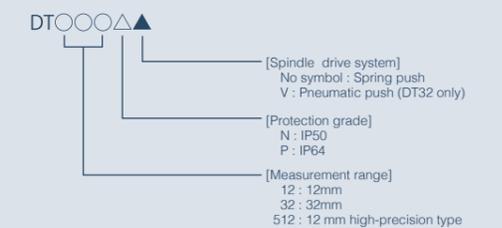
Safety

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Details of digital gauge models



*Please refer to the Specifications Table for the DK110 series.



DS800S series

Directly connect to a PC or hub via USB.
Communications and measurement software is also available.

DS805S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : S/SF/SL*/SFL* type IP64 : SL/SFL type
- High-durability (Ball spline structure)
- Output: USB

* When using the supplied hose elbow and a φ4mm tube



5mm stroke

DS812S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : S/SF/SV/SL*/SFL* type IP64 : SL/SFL type
- High-durability (Ball spline structure)
- Output: USB

* When using the supplied hose elbow and a φ4mm tube



12mm stroke

DF800S series

Connects to digital tolerance indicator MF10 and compatible with various field bus

DF805S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : S/SF/SL*/SFL* type IP64 : SL/SFL type
- High-durability (Ball spline structure)
- Output: Dedicated serial communications protocol

* When using the supplied hose elbow and a φ4mm tube



5mm stroke

DF812S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : S/SF/SV/SL*/SFL* type IP64 : SL/SFL type
- High-durability (Ball spline structure)
- Output: Dedicated serial communications protocol

* When using the supplied hose elbow and a φ4mm tube



12mm stroke

DK800S series

Connects to LT30 series counters and MG20A, MG40 and MG70 series interface units
A/B quadrature signal connects to PLC counter cards.

DK805S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : SA/SAF/SB/SBF/SAL*/SAFL*/SBL*/SBFL* type IP64 : SAL/SAFL/SBL/SBFL type
- High-durability (Ball spline structure)
- Output: A/B/ reference point

* When using the supplied hose elbow and a φ4mm tube



5mm stroke

DK812S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : SA/SAF/SB/SBF/SAV/SBV/SAF*/SAFL*/SBL*/SBFL* type IP64 : SAL/SAFL/SBL/SBFL type
- High-durability (Ball spline structure)
- Output: A/B/ reference point

* When using the supplied hose elbow and a φ4mm tube



12mm stroke

DK830S

- High resolution 0.1µm
- General purpose 0.5µm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP67 : SL*/SV* type IP53 : S/SL/V type
- High-durability (Ball spline structure)
- Output: A/B/ reference point

* When the bellows set (optional accessory) is mounted



30mm stroke

High-speed sampling (Maximum speed: 1 ms*1)



Able to perform multi-axis measurements using a powered hub*2

Recommended operating environment

CPU: Intel Core i3 or higher
RAM: 1 GB or higher
OS: Windows 7 / Windows 10 (32 bit / 64 bit edition)

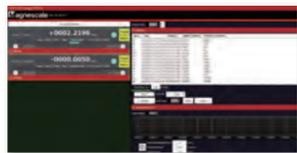
*For details of commands, please contact the Magnescale Sales Department.

*Windows and ActiveX are registered trademarks or trademarks of Microsoft Corporation in the United States and in other countries. Intel and Intel Core are registered trademarks or trademarks of Intel Corporation in the United States and in other countries.

- USB2.0SF-compatible digital gauges are capable of USB port-powered operation.
- A multi-axis configuration can be employed using a general-purpose USB hub. (Depending on the number of axes, the hub will require an external power supply).
- Operation verification software and sample programs are available free of charge from the Magnescale website.
- Functions can be executed via commands in the dedicated ActiveX Control provided by Magnescale.

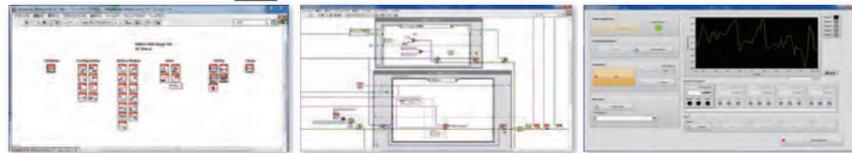
Standard software necessary for the display of measurement values is provided free of charge

Standard software
MGS USB Gauge Monitor



An original Magnescale application provided with a wide range of display functions, including current value, maximum value, minimum value, P-P value, and judgment functions.

LabVIEW-compatible communications software available



Importing data into Excel, VBA (OCX) and CSV makes it easy to create custom software solutions.

*1 MGS sampling data when 1 axis is connected. Results may vary depending on specifications and environment.
*2 Please contact our sales about the maximum number of axes.

Long stroke / General-purpose resolution•Robust type

DK series

Connects to LT30 series counters and MG20A, MG40 and MG70 series interface units

DK10/25

- High resolution 0.1μm
- General purpose 0.5μm
- Spring push
- Pneumatic push*
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ20
- Protection grade (probe section) IP64 : P/PL type IP50 : N/NL type
- Output: A/B phases

*When using the air lifter DZ174 (accessory)



DK50/100

- High resolution 0.1μm
- General purpose 0.5μm
- Spring push
- Pneumatic push (DK50 only*)
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ20
- Protection grade (probe section) IP64 : P type IP50 : N type
- Output: A/B phases

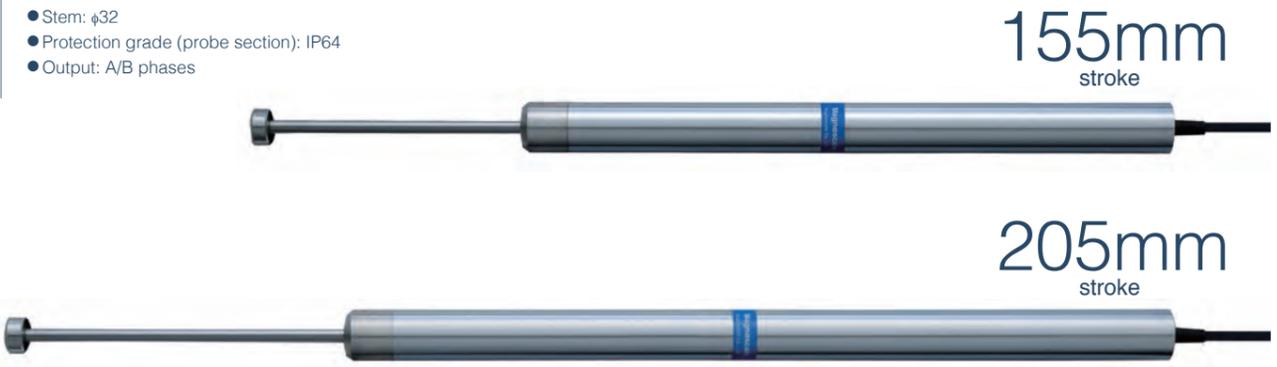
*When using the air lifter DZ174 (accessory)



DK155/205

- High resolution 0.1μm
- General purpose 0.5μm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ32
- Protection grade (probe section): IP64
- Output: A/B phases



Small / General-purpose

DT series

Connects to LT10A (DT12/DT32) / LT11A (DT512) counters and MG20A interface units

DT512/12

- High resolution 0.1μm
- General purpose 1μm 5μm
- Spring push
- Pneumatic push*
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP64 : P type

*When using the air lifter DZ176 (accessory)



DT32

- High resolution 0.1μm
- General purpose 5μm
- Spring push
- Pneumatic push
- Flange mount
- Straight body
- Right angle body
- Reference point function

- Stem: φ8
- Protection grade (probe section) IP64 : P/PV type



DT gauge (DT12N/P, DT32N/NV/P/PV, DT512N/P) compatible interpolators

Interpolator

Combine with DT gauges, to convert measurement data into various outputs

MT13

- Resolution : 1 μm, 5 μm, 10 μm
- Output signal : A/B phase (The output becomes high impedance during an alarm)
- Output format : Voltage-differential line driver output (compliant with EIA-422)



MT14

- Resolution : 1 μm, 5 μm, 10 μm
- Output signal : A/B phase, alarm (The output does not become high impedance during an alarm)
- Output format : Voltage-differential line driver output (compliant with EIA-422)



MT20

- Resolution : 1 μm, 5 μm, 10 μm
- For MF10 only



MT30

- Resolution : 1 μm, 5 μm, 10 μm
- USB2.0



MG70/71

Interface units for DK series digital gauges

Allow measurement data to be transferred to a PLC via EtherNet/IP or PROFINET fieldbuses.
 Can also be connected to DT series general-purpose digital gauges using the MT13 interpolator.
 Maximum number of length measurement unit connections: 85 axes
 (Up to a maximum of 250 axes when a power supply module is employed)
 MG70-EI : EtherNet/IP
 MG70-PN : PROFINET



MG70-EI MG70-PN MG71-CM

MG40 series

Interface units for DK series digital gauges

Interface units for DK series digital gauges
 Allow measurement data to be transferred to a computer or PLC via Ethernet or CC-Link.
 Maximum number of length measurement unit connections: 100 axes



MG41-NC MG41-NE MG42

MG50

Interface units for DF series digital gauges

Interface units for DF series digital gauges
 Allow DF805S/DF812S series measurement data to be transferred to a PLC via EtherCAT or CC-Link fieldbuses.
 Can also be connected to DT series general-purpose digital gauges using an MT20-01/05 interpolator.
 Maximum number of length measurement unit connections:
 MG50-EC: 30 axes
 MG50-CL: 16 axes



MG50-CL MF10-CM MG50-EC MF10-CM

MG10A/20A/30

Interface units for DK and DT series digital gauges

Standard RS-232C output, allowing measurement data to be transferred to a computer or PLC.
 Maximum number of length measurement unit connections: 16 axes (Up to a maximum of 64 axes using link cable)



MG30 MG10A MG20A-DK MG20A-DT

MF10

Compact display unit for DF series

Various mode displays
(preset, tolerance setting, Go/NoGo display, output reversal function)*
Two types of tolerance settings and four setting methods can be selected
Preset function allows arbitrary setting of origin point position

- Output Go/no-go Judgement
- MF10-P1 : NPN output type
- MF10-P2 : PNP output type
- MF10-CM : MG50 only

*Output reversal function : MF10-P1/P2 only



LY71

High-function measurement display unit able to be connected to up to two axes

Fitted with general-purpose input/output terminals allowing selection of function
Addition of expansion board enables BCD and comparator output

- Output BCD
- Output Go/no-go Judgement



LT30 series (For DK and DK-S)

Display unit for DK series

Equipped with functions necessary for measurement and judgment of tolerances, including preset, judgment output, external reset, latch, 2-axis addition, and P-P measurement

- Output BCD
- Output RS-232C
- Output Go/no-go Judgement



LY72

High-function display unit able to be connected to up to three axes

RS-232C fitted as standard, allowing operation by command

- Output RS-232C



LT11A series (For DT512)

Display unit for DT512

Equipped with functions necessary for measurement and judgment of tolerances, including preset, judgment output, external reset, latch, 2-axis addition, and P-P measurement

- Output BCD
- Output RS-232C
- Output Go/no-go Judgement



LT10A series (For DT12/32)

Display unit for DT12/DT32

Equipped with functions necessary for measurement and judgment of tolerances, including preset, judgment output, external reset, latch, 2-axis addition, and P-P measurement

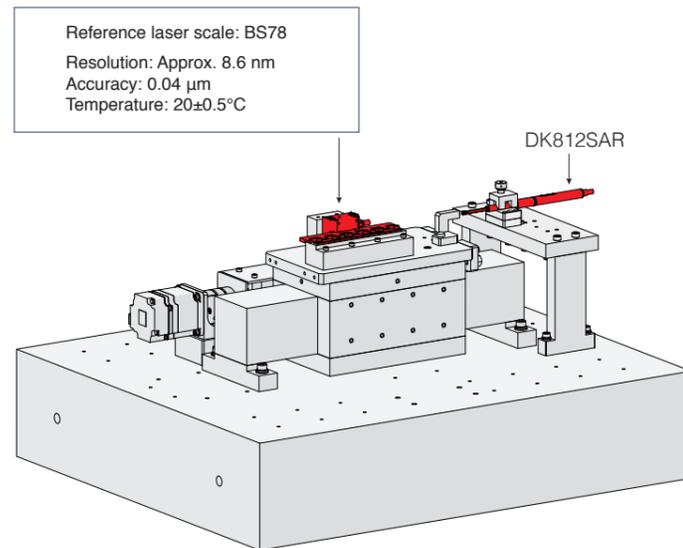
- Output BCD
- Output RS-232C
- Output Go/no-go Judgement



DK812SAR repeatability

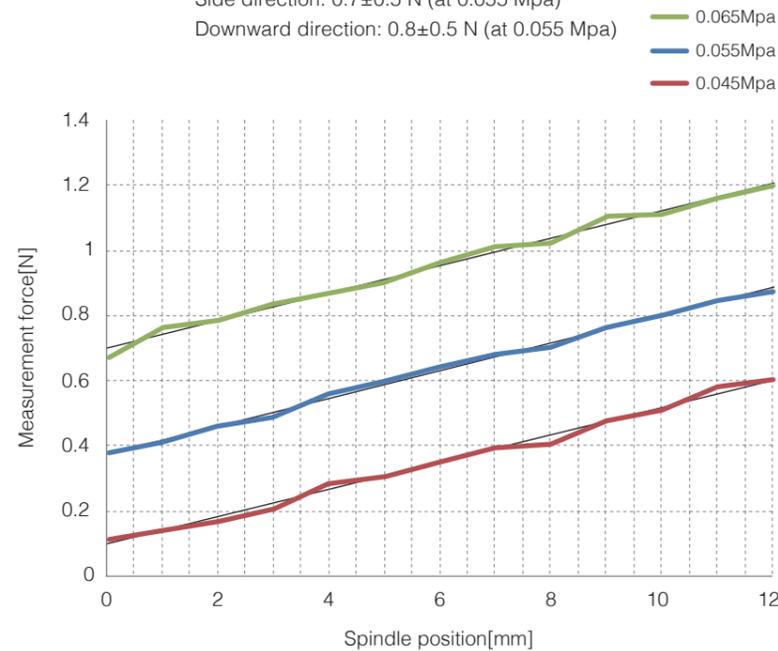
The result determined from measurements conducted five times each at various points between 1 mm and 12 mm from the reference position (DK812SAR spindle fully extended) using a Magnescale laser scale was 2σ .

| Measurement position | $2\sigma(\mu\text{m})$ |
|----------------------|------------------------|
| 1mm | 0.068 |
| 2mm | 0.066 |
| 3mm | 0.056 |
| 4mm | 0.039 |
| 5mm | 0.038 |
| 6mm | 0.048 |
| 7mm | 0.052 |
| 8mm | 0.029 |
| 9mm | 0.038 |
| 10mm | 0.018 |
| 11mm | 0.031 |
| 12mm | 0.027 |



Relationship between DK812SAVR (pneumatic push type) air pressure and measurement force

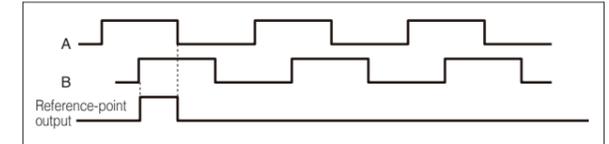
Product specifications: Upward direction: 0.6 ± 0.5 N (at 0.055 Mpa)
 Side direction: 0.7 ± 0.5 N (at 0.055 Mpa)
 Downward direction: 0.8 ± 0.5 N (at 0.055 Mpa)



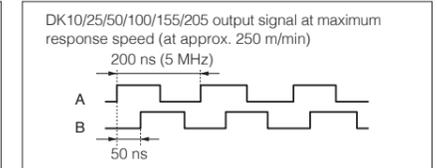
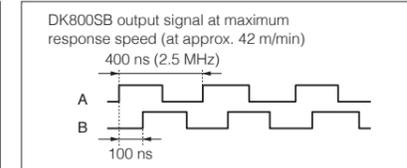
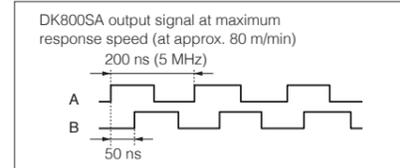
Measurement results and approximation lines for air pressure = 0.045 Mpa, 0.055 Mpa, and 0.065 Mpa and side direction.

DK Series measuring unit output signals

The signal output from these measuring units are A/B quadrature and reference point signals, voltage differential line driver output compliant with EIA-422.



The reference point is the synchronized reference point that is at Hi level when the signal A and signal B are at the Hi level.

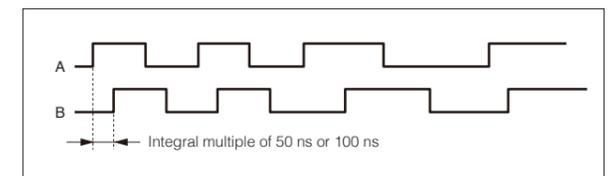


The A/B quadrature output signal by measuring unit is 5 MHz maximum with a minimum phase difference of 50 ns for DK800SA and is 2.5 MHz maximum with a minimum phase difference of 100 ns for DK800SB. The counter or control device capable of processing these signals should be used.

For DK the A/B quadrature output signal by measuring unit is 5 MHz maximum with a minimum phase difference of 50 ns. The counter or control device capable of processing these signals should be used.

Output Signal Phase Difference

Moving length of the measuring unit is detected every 50 ns for the DK800SA/DK and every 100 ns for the DK800SB, and the phase difference proportional to the amount traveled is output. The amount of phase difference changes in integer multiples of 50 ns or 100 ns. Also, the minimum phase difference for the phase A and B is 50 ns for the DK800SA/DK and 100 ns for the DK800SB.

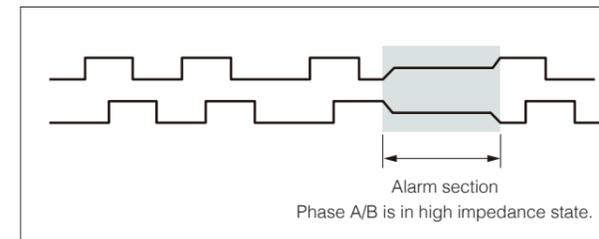


In the standard specifications, the minimum phase difference is fixed at 50 ns for the DK800SA and 100 ns for the DK800SB, however, the minimum phase differences in the following table below are available as special specifications.

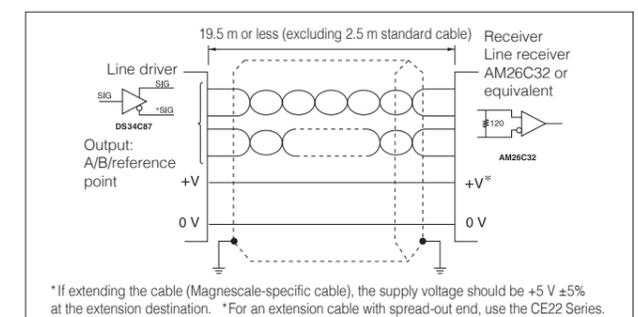
| Phase A/B Minimum phase difference | Phase A single cycle | Counter's permissible frequency | Maximum response speed | | Remarks |
|---------------------------------------|----------------------|---------------------------------|------------------------|-------------------|--------------------------|
| | | | Resolution 0.1 μm | Resolution 0.5 μm | |
| 50ns | 200ns | 5MHz | 80m/min | 250m/min | DK800SA standard product |
| 100ns | 400ns | 2.5MHz | 42m/min | 100m/min | DK800SB standard product |
| 300ns | 1.2μs | 833kHz | 14m/min | 33m/min | Special specifications |
| 500ns | 2μs | 500kHz | 8.4m/min | 20m/min | Special specifications |

Output Signal Alarm

If the response speed is exceeded, the phase A/B output from this measuring unit changes to high impedance state for about 400 ms as an alarm.

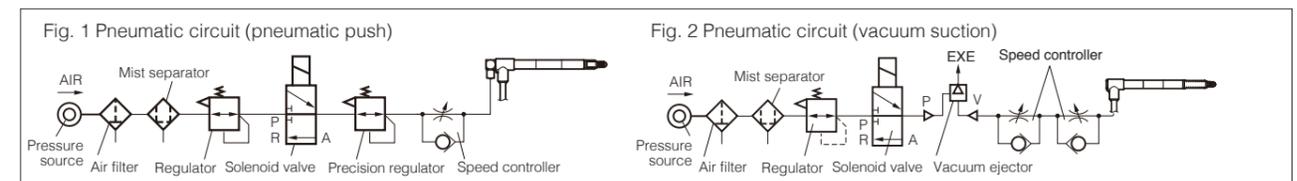


Receiver

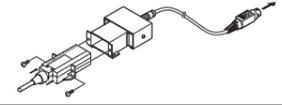


DK Series operating cautions

- For the pneumatic push type, use of the pneumatic circuit shown in Fig. 1 enables the feeler to be air driven. Pressure regulation is required depending on the usage condition. A precision pressure regulator (e.g., SMC IR2010 or equivalent) should be used.
- For the vacuum suction type, use of the pneumatic circuit shown in Fig. 2 enables the feeler to be air driven.



Compatibility with discontinued products

| Digital gauge | Adapter/conversion cable Note 1: MT12/13 is interpolator. | Counters | Interface unit | Old counters | External device | Extension cables | |
|---|--|---------------------|--------------------------------|---|-----------------|--|---|
| DK800A/B Series Discontinued DK800S Series DK10/25/50/100/110/155/205 Series | Unnecessary | LT30 Series | MG20A-DK MG41-NE/NC MG42 | | | CE08-1(1 m) -3(5 m) -5(5 m) -10(10 m) -15(15 m) * Total cable length is 20 m or less. CK-T12(1 m) -T13(3 m) -T14(5 m) -T15(10 m) -T16(15 m) * High-flex cable/total cable length is 20 m or less. CE27-01(1 m) -03(3 m) -05(5 m) -10(10 m) * High-flex cable/large-dia. cable/total cable length is 30 m or less. | |
| | CE29 Series Cable length: 0.3/1/3/5/10 m  | LH71A/72 LY71/72 | | | | | |
| | (Open-end cable)  | | | | | ○ : connectable A/B reference point (Differential line receiver input) | CE22-01(1 m) -03(3 m) -05(5 m) -10(10 m) * High-flex cable/open-end/total cable length is 20 m or less. CE26-01(1 m) -03(3 m) -05(5 m) -10(10 m) * High-flex cable/open-end/large-dia. cable/total cable length is 30 m or less. CE27-01(1 m) -03(3 m) -05(5 m) -10(10 m)(extension cable for CE26) * High-flex cable/large-dia. cable/total cable length is 30 m or less. |
| DG Series (with HA13) Discontinued * Model with no "B" assigned | SZ05-T01 | LH71A/72 LY71/72 | | | | | |
| | SZ05 + SZ51-MS01 | | | LY51/52 Discontinued | | Without extension cable | |
| | Unnecessary | | | LY100/110 LH20, etc. Discontinued | | | |
| DT12/32 Series | Unnecessary | LT10A Series | MG20A-DT | LT10 Series Discontinued | | | |
| | MT12-05/10 Note 1  | LT20A Series | | LT20 Series Discontinued | | | |
| | MT13-05/10 Note 1  | LT30 Series | | | | CE08-1(1 m) -3(5 m) -5(5 m) -10(10 m) -15(15 m) * Total cable length is 20 m or less. CK-T12(1 m) -T13(3 m) -T14(5 m) -T15(10 m) -T16(15 m) * High-flex cable/total cable length is 20 m or less. | |
| DT512 Series | Unnecessary | LT11A Series | MG20A-DT | LT11 Series Discontinued | | | |
| | MT13-01 Note 1  | LT30 Series | | | | | |
| DK800 Series Discontinued * Models with no "A/B" assigned to model | Unnecessary | LT30 Series | MG20A-DK | | | CE27-01(1 m) -03(3 m) -05(5 m) -10(10 m) * High-flex cable/large-dia. cable/total cable length is 10 m or less. * When CE08-1(1 m) -3(3 m) or CK-T12(1 m) -T13(3 m) is used, the total cable length is 5 m or less. | |
| | CE29 Series Cable length: 0.3/1/3/5/10 m  | LH71A/72 LY71/72 | | | | | |
| | (Open-end cable)  | | | | | ○ : connectable A/B reference point (Differential line receiver input) | CE22-01(1m) -03(3 m) * High-flex cable/open-end/total cable length is 5 m or less. CE26-01(1 m) -03(3 m) * High-flex cable/open-end/large-dia. cable/total cable length is 10 m or less. CE27-01(1 m) -03(3 m) -05(5 m)(extension cable for CE26) * High-flex cable/large-dia. cable/total cable length is 10 m or less. |
| DG-B Series Discontinued | DZ51 + SZ70-1 | LH71A/72 LY71/72 | | | | | |
| | Unnecessary | LT20A Series | MG20A-DG | LT20 Series Discontinued | | Without extension cable | |
| | DZ51 | | | LY51/52 Discontinued | | | |
| DE12BR/DE30BR Discontinued | SZ70-2  | LT30 Series | | | | | |
| | SZ70-1 | LH71A/72 LY71/72 | | | | Without extension cable | |
| | Unnecessary | | | LY51/52 Discontinued | | | |
| DL310B/DL330B DL10BR/DL30BR/DL60BR Discontinued DL30BR | Unnecessary | LT20A Series | MG20A-DG | LT20 Series Discontinued | | Without extension cable | |
| | DZ51 + SZ70-1 | LH71A/72 LY71/72 | | | | * Cable may be manufactured to specified length on a production by order basis. Total cable length: 10 m or less | |
| | DZ51 | | | LY51/52 Discontinued | | | |

DS800S series

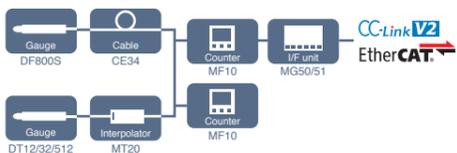


DS805S/DS812S

| Model | High-resolution models | | General-purpose resolution models | | High-resolution models | | General-purpose resolution models | |
|--|---|--|--|--|--|--|--|--|
| | DS805SR, DS805SLR, DS805SFR, DS805SFLR | | DS805SR5, DS805SLR5, DS805SFR5, DS805SFLR5 | | DS812SR, DS812SLR, DS812SFR, DS812SFLR | | DS812SVR | |
| Measuring range | 5mm | | | | 12mm | | | |
| Maximum resolution | 0.1 μm | | 0.5 μm | | 0.1 μm | | 0.5 μm | |
| Accuracy(At 20°C) | 1 μm p-p | | 1.5 μm p-p | | 1 μm p-p | | 1.5 μm p-p | |
| Repeatability | ±0.1 μm or less | | | | | | | |
| Measuring force | Upward: 0.35±0.25N Horizontal: 0.40±0.25N Downward: 0.45±0.25N | | Upward: 0.40±0.30N Horizontal: 0.50±0.30N Downward: 0.60±0.30N | | Upward: 0.60±0.50N Horizontal: 0.70±0.50N Downward: 0.80±0.50N | | Upward: 0.40±0.30N Horizontal: 0.50±0.30N Downward: 0.60±0.30N | |
| Maximum response speed | 80m/min | | | | | | | |
| Reference point | Position at spindle movement of 1mm±0.5mm | | | | | | | |
| Reference point response speed | 40m/min or less | | | | | | | |
| Output | USB2.0FS | | | | | | | |
| Spindle drive system | Spring push Vacuum suction: SL/SFL | | Spring push Vacuum suction: SL/SFL | | Air driving (Pneumatic push) | | Spring push Vacuum suction: SL/SFL | |
| Protection grade ² | IP67 (S/SF/SV), IP64 (SL/SFL), IP67 (SL/SFL) ³ | | | | | | | |
| Vibration resistance | 100 m/s ² (20~2000 Hz) | | | | | | | |
| Impact resistance | 1000 m/s ² (11 ms) | | | | | | | |
| Operating temperature and humidity range | 0~+50 °C (No condensation) | | | | | | | |
| Storage temperature and humidity range | -20~+60 °C 90%RH or less | | | | | | | |
| Power supply | DC 5 V ±5 % | | | | | | | |
| Power consumption | 120mA Max. | | | | | | | |
| Mass ⁴ | Approx. 30g | | | | | | | |
| Output cable length | Measuring unit ↔ Interpolation box : 2m Interpolation box ↔ USB : 0.5m | | | | | | | |
| Feeler | Carbide ball tip, Mounting screw M2.5 | | Steel ball tip, Mounting screw M2.5 | | Carbide ball tip, Mounting screw M2.5 | | Steel ball tip, Mounting screw M2.5 | |
| Accessories | Spanner, Instruction Manual, Supplement Manual, +P M4x5 screw(2) SL/SFL only : Hose elbow, SF/SFL only : Tightening nut, Wave washer, Pin, Clamp spanner | | Spanner, Instruction Manual, Supplement Manual, +P M4x5 screw(2) SL/SFL only : Tightening nut, Wave washer, Pin, Clamp spanner, DS812SF/SFL only : 2 mm collar for adjustment | | Spanner, Instruction Manual, Supplement Manual, +P M4x5 screw(2) SL/SFL only : Hose elbow, SF/SFL only : Tightening nut, Wave washer, Pin, Clamp spanner, DS812SF/SFL only : 2 mm collar for adjustment | | Spanner, Instruction Manual, Supplement Manual, +P M4x5 screw(2) | |

¹ Air pressure : 0.055MPa ² Not including interpolation box and connector ³ When using the supplied hose elbow and a φ4mm tube ⁴ Not including cable and interpolation box
*Magnescale reserves the right to change product specifications without prior notice.

DF800S series

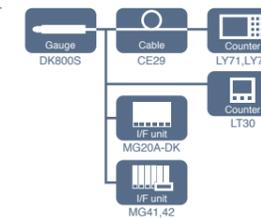


DF805S/DF812S

| Model | DF805SR, DF805SFR | | DF805SLR, DF805SFLR | | DF812SR, DF812SFR | | DF812SLR, DF812SFLR | | DF812SVR | |
|--|---|-----|---------------------|--|--|------|---------------------|--|---|--|
| | Measuring range | 5mm | | | | 12mm | | | | |
| Maximum resolution | 0.1 μm | | | | 0.1 μm | | | | | |
| Accuracy(At 20°C) | 1 μm p-p | | | | 1 μm p-p | | | | | |
| Repeatability | ±0.1 μm or less | | | | | | | | | |
| Measuring force | Upward: 0.35±0.25N Horizontal: 0.40±0.25N Downward: 0.45±0.25N | | | | Upward: 0.4±0.3N Horizontal: 0.5±0.3N Downward: 0.6±0.3N | | | | Upward: 0.6±0.5N ¹ Horizontal: 0.7±0.5N ¹ Downward: 0.8±0.5N ¹ | |
| Maximum response speed | 80 m/min | | | | | | | | | |
| Reference point | Position at spindle movement of 1±0.5 mm | | | | | | | | | |
| Reference point response speed | 80 m/min | | | | | | | | | |
| Output | Serial communication protocol | | | | | | | | | |
| Spindle drive system | Spring push | | | | | | | | Air driving (Pneumatic push) | |
| Protection grade ² | IP67(S/SF/SV), IP64(SL/SFL), IP67(SL/SFL) ³ | | | | | | | | | |
| Vibration resistance | 100 m/s ² (20 ~ 2000 Hz) | | | | | | | | | |
| Impact resistance | 1000 m/s ² (11 ms) | | | | | | | | | |
| Operating temperature and humidity range | 0~+50°C (No condensation) | | | | | | | | | |
| Storage temperature and humidity range | -20~+60°C 90%RH or less | | | | | | | | | |
| Power supply | DC+10~+30 V | | | | | | | | | |
| Power consumption | 1.2 W or less | | | | | | | | | |
| Mass ⁴ | Approx. 30 g (Not including cable and interpolation box) | | | | | | | | | |
| Output cable length | 2 m | | | | | | | | | |
| Feeler | Carbide ball tip, Mounting screw M2.5 | | | | | | | | | |
| Accessories | Instruction Manual, Spanner DF8**S*L* only : Hose elbow DF8**S*F** only : Tightening nut, Clamp spanner, Wave washer, Pin | | | | | | | | | |

¹ Air puressure: 0.055MPa ² Excluding the interpolation box ³ When Hose elbow and φ4mm tube is connected ⁴ Excluding cable section and interpolation box
*Magnescale reserves the right to change product specifications without prior notice.

DK800S series



DK805S/DK812S

| Model | High-resolution models | | General-purpose resolution models | | High-resolution models | | General-purpose resolution models | |
|--------------------------------|--|---------------------|---|---------------------|---|---------------------|---|---------------------|
| | DK805SAR, DK805SALR, DK805SAFR, DK805SAFLR | | DK805SBR, DK805SBLR, DK805SBR5, DK805SBFR, DK805SBFLR | | DK805SAR5, DK805SALR5, DK805SAFR5, DK805SAFLR5 | | DK805SBR5, DK805SBLR5, DK805SBR5, DK805SBFR5, DK805SBFLR5 | |
| Measuring range | 5 mm | | | | 12 mm | | | |
| Maximum resolution | 0.1 μm | | 0.5 μm | | 0.1 μm | | 0.5 μm | |
| Accuracy(At 20°C) | 1 μm p-p | | 1.5 μm p-p | | 1 μm p-p | | 1.5 μm p-p | |
| Repeatability | ±0.1 μm or less | | | | | | | |
| Measuring force | Upward: 0.35±0.25N Horizontal: 0.40±0.25N Downward: 0.45±0.25N | | | | Upward: 0.4±0.3N Horizontal: 0.5±0.3N Downward: 0.6±0.3N | | | |
| Maximum response speed | 80 m/min | 42 m/min | 250 m/min | 100 m/min | 80 m/min | 42 m/min | 250 m/min | 100 m/min |
| Reference point | Position at spindle movement of 1mm±0.5mm | | | | | | | |
| Reference point response speed | Same as the noted maximum response speed | | | | | | | |
| Output | A/B/Reference point Voltage-differential line driver output (conforming to EIA-422) | | | | | | | |
| Spindle drive system | Spring push Vacuum suction (DK805SALR/SAFLR/SBLR/SBFLR/SALR5/SAFLR5/SBLR5/SBFLR5) | | | | Spring push Air driving (Pneumatic push)(DK812SAVR/SBVR/SAVR5/SBVR5) Vacuum suction (DK812SALR/SAFLR/SBLR/SBFLR/SALR5/SAFLR5/SBLR5/SBFLR5) | | | |
| Protection grade ¹ | IP67(SA/SAF/SAV/SB/SBF/SBV), IP64(SAL/SAFL/SBL/SBFL), IP67(SAL/SAFL/SBL/SBFL) ² | | | | | | | |
| Vibration resistance | 100 m/s ² (20~2000 Hz) | | | | | | | |
| Impact resistance | 1000 m/s ² (11 ms) | | | | | | | |
| Operating temperature | 0~+50 °C | | | | | | | |
| Sotrage temperature | -20~+60 °C | | | | | | | |
| Power supply | DC 5 V ±5 % | | | | | | | |
| Power consumption | 1 W | | | | | | | |
| Mass ³ | Approx. 30g | | | | | | | |
| Output cable length | 2.5 m | | | | | | | |
| Feeler | Carbide ball tip | Mounting screw M2.5 | Steel ball tip | Mounting screw M2.5 | Carbide ball tip | Mounting screw M2.5 | Steel ball tip | Mounting screw M2.5 |
| Accessories | Instruction Manual +P M4 x 5 screw(2pc) tightening nut, Clamp spanner, wave washer, mounting pin 1 each(DK8**S*F** only) Hose elbow 1 pc(DK8**S*L** only) one spanner | | | | | | | |

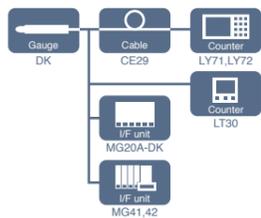
¹ Excluding the interpolation box and connector ² When φ4mm tube is connected for right-angle model ³ Excluding cable and interpolation box
*Magnescale reserves the right to change product specifications without prior notice.

DK830S

| Model | Straight type | | Right-angle type | | Pneumatic push type | |
|--------------------------------|---|--|------------------|--|--|--|
| | DK830SR | | DK830SLR | | DK830SVR | |
| Measuring range | 30 mm | | | | | |
| Maximum resolution | 0.1 μm(0.5 μm resolution can also be selected as special specifications.) | | | | | |
| Accuracy(At 20°C) | 1.3 μm p-p | | | | 1.7 μm p-p | |
| Repeatability | ±0.1 μm or less | | | | | |
| Measuring force | Upward: 0.5±0.35N Horizontal: 0.6±0.35N Downward: 0.7±0.35N | | | | Air pressure 0.07 Mpa: 1.9N or less in all directions Air pressure 0.09 Mpa: 2.6N or less in all directions | |
| Maximum response speed | 80 m/min | | | | | |
| Reference point | Position at spindle movement of 1mm±0.5mm | | | | | |
| Reference point response speed | Same as the noted maximum response speed | | | | | |
| Output | A/B/Reference point Voltage-differential line driver output (conforming to EIA-422) | | | | | |
| Spindle drive system | Spring push | | | | Air driving (Pneumatic push) | |
| Protection grade ¹ | IP53 | | | | IP53/IP67 ² | |
| Vibration resistance | 100 m/s ² (20~2000 Hz) | | | | | |
| Impact resistance | 1000 m/s ² (11 ms) | | | | | |
| Operating temperature | 0 °C~+50 °C | | | | | |
| Sotrage temperature | -20 °C~+60 °C | | | | | |
| Power supply | DC +5 V ±5 % | | | | | |
| Power consumption | 1 W | | | | | |
| Mass ³ | Approx. 70g | | | | Approx. 80g | |
| Output cable length | 2.5 m | | | | | |
| Feeler | Carbide ball tip, Mounting screw M2.5 | | | | | |
| Accessories | Spanner Instruction Manual Supplement +P M4 x 5 screw(2pc) | | | | | |

¹ Excluding the interpolation box and connector ² When the bellows set(optional accessory) is mounted ³ Excluding cable section and interpolation box
*Magnescale reserves the right to change product specifications without prior notice.

DK series



DK10/25/50/100

| Model | Standard model | | Protected type model | | Standard model | | Protected type model | | Standard model | | Protected type model | |
|--------------------------------|--|--------------|----------------------|---|----------------|----------|---|--------------|----------------|---|----------------------|------|
| | DK10NR5 | DK10PR5 | DK10PLR5 | DK25NR5 | DK25PR5 | DK25NLR5 | DK25PLR5 | DK50NR5 | DK50PR5 | DK100NR5 | DK100PR5 | |
| Measuring range | 10 mm | | | | 25 mm | | | | 50 mm | | 100 mm | |
| Maximum resolution | 0.5 μm | | | | | | | | | | | |
| Accuracy(At 20°C) | 2 μm p-p | | | | 4 μm | | | | | | | |
| Measuring force | Upward: 0.3±0.25N Horizontal: 0.6±0.3N Downward: 0.8±0.35N | 4.9N or less | | Upward: 0.4±0.3N Horizontal: 0.7±0.35N Downward: 1±0.4N | 4.9N or less | | Upward: 0.4±0.3N Horizontal: 0.7±0.35N Downward: 1±0.4N | 4.9N or less | | Upward: - Horizontal: 0.9±0.4N Downward: 1.3±0.5N | 6.2N or less | |
| Maximum response speed | 250 m/min | | | | | | | | | | | |
| Reference point | Position at the spindle movement of 1mm | | | | | | | | | | | |
| Reference point response speed | Same as the noted maximum response speed | | | | | | | | | | | |
| Output | A/B/Reference point Voltage-differential line driver output(conforming to EIA-422) | | | | | | | | | | | |
| Spindle drive system | Spring push | | | | | | | | | | | |
| Protection grade ¹ | IP50 | IP64 | IP50 | IP64 | IP50 | IP64 | IP50 | IP64 | IP50 | IP64 | IP50 | IP64 |
| Vibration resistance | 150 m/s ² (10~2000 Hz) | | | | | | | | | | | |
| Impact resistance | 1500 m/s ² (11 ms) | | | | | | | | | | | |
| Operating temperature | 0~+50 °C | | | | | | | | | | | |
| Storage temperature | -20~+60 °C | | | | | | | | | | | |
| Power Supply | DC 5 V±5 % | | | | | | | | | | | |
| Power consumption | 1 W | | | | | | | | | | | |
| Mass ² | Approx. 230g | | | Approx. 300g | | | Approx. 360g | | | Approx. 630g | | |
| Output cable length | 2.5 m | | | | | | | | | | | |
| Feeler | Carbide ball tip, Mounting screw M2.5 | | | | | | | | | | | |
| Accessories | Instruction manual +P M4x5 screw(2pc) | | | | | | | | | | | |

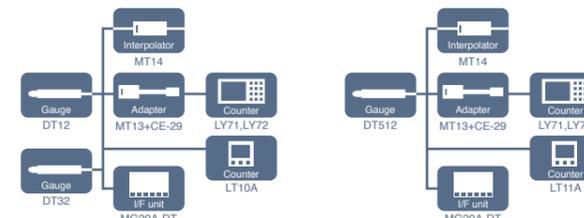
*1 Excluding interpolation box and connector *2 Excluding cable section and interpolation box *Magnescale reserves the right to change product specifications without prior notice.

DK155/205

| Model | DK155PR5 | | DK205PR5 | |
|--------------------------------|--|--------|---------------|--------|
| | Measuring range | 155 mm | | 205 mm |
| Maximum resolution | 0.5 μm | | | |
| Accuracy(At 20°C) | 5 μm p-p | | 6 μm p-p | |
| Maximum response speed | 250 m/min | | | |
| Reference point | Position at the spindle movement of 5mm | | | |
| Reference point response speed | Same as noted maximum response speed | | | |
| Output | A/B/Reference point Voltage-differential line driver output(conforming to EIA-422) | | | |
| Spindle drive system | None | | | |
| Protection grade ¹ | IP64 | | | |
| Vibration resistance | 150 m/s ² (10~2000 Hz) | | | |
| Impact resistance | 1500 m/s ² (11 ms) | | | |
| Operating temperature | 0~+50 °C | | | |
| Storage temperature | -20~+60 °C | | | |
| Power Supply | DC 5 V±5 % | | | |
| Power consumption | 1 W | | | |
| Mass ² | Approx. 1100g | | Approx. 1300g | |
| Output cable length | 2.5 m | | | |
| Feeler | DZ-181 | | | |
| Surface to be measured | Soft magnetic material | | | |
| Magnetically attachable feeler | Magnetic attraction: 10N, Resistance against horizontal slip: 2.7N | | | |
| Spindle ³ | φ8 mm, radial swing: 0.04mm max | | | |
| Accessories | Instruction manual +P M4 x 5 screw(2pc) | | | |

*1 Excluding the interpolation box and connector *2 Excluding cable section and interpolation box *3 The spindle weighs about 400g. *Magnescale reserves the right to change product specifications without prior notice.

DT series

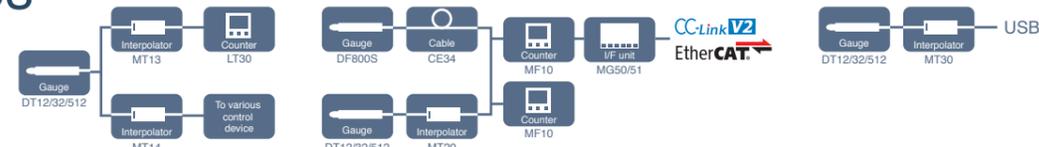


DT12/32/512

| Model | Standard model | | Protected type model | | Standard model | | Protected type model | | Standard model | | Protected type model | |
|------------------------|--|-------------------------------|---------------------------------|--|-------------------------------|---------------------------|---|---------------------------|-------------------------------|--|---------------------------------|--|
| | DT512N | DT512P | DT12N | DT12P | DT32N | DT32NV | DT32P | DT32PV | | | | |
| Measuring range | 12 mm | | | | 32 mm | | | | | | | |
| Maximum resolution | 1 μm | | | | 5 μm | | | | | | | |
| Accuracy(At 20°C) | 6 μm p-p | | | | 10 μm p-p | | | | | | | |
| Measuring force | Upward: 0.7±0.5N Horizontal: 0.8±0.5N Downward: 0.9±0.5N | 1.7N or less in all direction | | Upward: 0.7±0.5N Horizontal: 0.8±0.5N Downward: 0.9±0.5N | 1.7N or less in all direction | | *1 Upward: 1.1±0.8N Horizontal: 1.3±0.8N Downward: 1.5±0.8N | | 2.9N or less in all direction | | 9N or less in all direction*2 | |
| Maximum response speed | Depending on unit to be connected | | | | | | | | | | | |
| Reference point | None | | | | | | | | | | | |
| Spindle drive system | Spring push | | | | Air driving (Pneumatic push) | | | | Spring push | | Air driving (Pneumatic push) | |
| Protection grade | — | | IP64 or equivalent ¹ | | — | | IP64 or equivalent ¹ | | — | | IP64 or equivalent ³ | |
| Operating temperature | 0~+50 °C | | | | | | | | | | | |
| Storage temperature | -10~+60 °C | | | | | | | | | | | |
| Mass | Approx. 75g ² | Approx. 80g ² | Approx. 75g ² | Approx. 80g ² | Approx. 120g ⁴ | Approx. 140g ⁴ | Approx. 120g ⁴ | Approx. 140g ⁴ | | | | |
| Output cable length | 2 m | | | | | | | | | | | |
| Feeler | Steel ball tip, Mounting screw M2.5 | | | | | | | | | | | |
| Accessories | Instruction manual | | | | | | | | | | | |

*1 At input air pressure of 1.96 x 10⁵ Pa with speed controller open(DT32NV) *2 At input air pressure of 2.35 x 10⁵ Pa with speed controller open *3 Excluding the connector *4 Excluding cable section *Magnescale reserves the right to change product specifications without prior notice.

MT series



MT13/14

| Model | MT13-01 | | MT13-05 | | MT13-10 | | MT14-01 | | MT14-05 | | MT14-10 | |
|--|---|-----------------|---------|--|---------|--|---------|--|---------|--|---------|--|
| | Compatible measuring units | DT512/DT12/DT32 | | | | | | | | | | |
| Maximum response speed | 100 m/min | | | | | | | | | | | |
| Resolution | 1 μm | | 5 μm | | 10 μm | | 1 μm | | 5 μm | | 10 μm | |
| Power voltage | DC5 V ±4 % | | | | | | | | | | | |
| Power consumption | 1.2 W (When output load of 120Ω is connected) | | | | | | | | | | | |
| Output format | A/B Voltage-differential line driver | | | | | | | | | | | |
| Operating temperature and humidity range | 0~+50 °C (No condensation) | | | | | | | | | | | |
| Storage temperature and humidity range | -10~+60 °C (20 to 90 %RH) | | | | | | | | | | | |
| Mass | Approx. 90g | | | | | | | | | | | |

*Magnescale reserves the right to change product specifications without prior notice.

MT20

| Model | MT20-01 | | MT20-05 | |
|--|----------------------------|--------------|---------|------------------|
| | Compatible measuring units | DT512 series | | DT12/DT32 series |
| Maximum response speed | 150 m/min | | | |
| Resolution | 1 μm | | 5 μm | |
| Power voltage | DC+10~+30V | | | |
| Power consumption | 1.2 W or less | | | |
| Operating temperature and humidity range | 0~+50 °C (No condensation) | | | |
| Storage temperature and humidity range | -10~+60 °C (90%RH or less) | | | |
| Mass | Approx. 50 g | | | |

*Magnescale reserves the right to change product specifications without prior notice.

MT30

| Model | MT30-01 | | MT30-05 | |
|--|----------------------------|--------------|---------|------------------|
| | Compatible measuring units | DT512 series | | DT12/DT32 series |
| Maximum response speed | 150 m/min | | | |
| Resolution | 1 μm | | 5 μm | |
| Power voltage | DC5V ±5 % | | | |
| Power consumption | 120mA Max | | | |
| Operating temperature and humidity range | 0~+50 °C (No condensation) | | | |
| Storage temperature and humidity range | -10~+60 °C (90%RH or less) | | | |
| Mass | Approx. 50 g | | | |

*Magnescale reserves the right to change product specifications without prior notice.

Interface unit

MG70 Interface
 ▲ MG70-EI : EtherNet/IP
 ▲ MG70-PN : PROFINET RT

Compatible with DK series

| Model | Main module | | Counter module |
|--|---|------------------------------------|---|
| | MG70-EI | MG70-PN | MG71-CM |
| Communication | EtherNet/IP | PROFINET RT | Data transferred to main module by dedicated protocol |
| Data transfer speed | 10 / 100 Mbps | 100 Mbps | - |
| Node address setting method | Set with hexadecimal rotary switch | Set with hexadecimal rotary switch | - |
| Node address range | DxDD~DxFF | | - |
| Maximum connectable measuring unit | Counter module | 85 units*1 | - |
| | Measuring unit | - | 1 units |
| Cable length (Communication distance) | Segment length: Max. 100m between two station | | |
| Mounting method | 35mm DIN rail mounting | | |
| Power supply voltage | DC24 V (DC20.4~28.8 V) | | |
| Power consumption | 2W or less | 2.5W or less | 1.01W or less |
| Operating temperature and humidity range | Horizontal use: -25~+60°C Vertical use: -25~+50°C | | |
| Storage temperature and humidity range | -40~+85°C | | |
| Mass | Approx. 150g | | Approx. 80g |

*1 This is the maximum number of connections when supplying power by one power supply module. Maximum of 250 units of MG71-CM can be connected by adding power supply modules.

*Magnescale reserves the right to change product specifications without prior notice.

MG50 Interface
 ▲ MG50-EC : EtherCAT
 ▲ MG50-CL : CC-Link (Compatible with iQSS)

Compatible with DF/DT series

| Model | Main module | | Distribution module |
|--|--|--|---|
| | MG50-EC | MG50-CL | MG51 |
| Communication | EtherCAT | CC-Link (Compatible with iQSS) | Data transferred to main module by dedicated protocol |
| Data transfer speed | 100 Mbps | Maximu downlink speed of 10Mbps | - |
| Node address setting method | Set with decimal rotary switches or software | Set with decimal rotary switches | - |
| Node address range | 000~192 | Max. 64 | - |
| Maximum connectable measuring unit | Counter module | 16 units | 10 units |
| | Distribution module | 8 units | - |
| Cable length | Maximum cable length between main module and distribution module: 30m | | |
| Mounting method | 35mm DIN rail mounting | | |
| Power supply voltage | DC24 V (DC20.4 ~26.4 V) | | |
| Power consumption / Consumption current | 2.4 W or less 100 mA or less (DC24V) | | 2W or less 80 mA or less (DC24V) |
| Operating temperature and humidity range | 1-2 units are installed side by side: 0~+55°C 11-16 units are installed side by side: 0~+45°C | 3-10 units are installed side by side: 0~+50°C 17-30 units are installed side by side: 0~+40°C 25~85%RH (No condensation or icing) | 1-2 units are installed side by side: 0~+55°C 3-10 units are installed side by side: 0~+50°C 11-16 units are installed side by side: 0~+45°C 25~85%RH (No condensation or icing) |
| Storage temperature and humidity range | -30~+60°C 25~85%RH (No condensation or icing) | | -30~+70°C 25~85%RH (No condensation or icing) |
| Mass | Approx. 95g | | Approx. 40 g |

*Magnescale reserves the right to change product specifications without prior notice.

MG40 Interface
 ▲ MG41-NC : CC-Link/Ethernet
 ▲ MG41-NE : Ethernet

Compatible with DK series

| Model | Main unit | | Hub unit |
|--|--|--|---|
| | MG41-NC | MG41-NE | MG42-4 |
| Communication | CC-Link / Ethernet | | Ethernet |
| | Data transferred to main module by dedicated protocol | | |
| Maximum connectable measuring unit | Measuring unit (Entire system) | | 100 unit(Connection of 101th unit and later disabled) |
| | Measuring unit (Each unit) | | 4 units |
| | Hub unit | | 24 units |
| Cable length | Total cable length between main unit and hub unit: 0.5 / 1 / 2 / 5 / 10 m (Connection cable MZ41(Optional)) Total cable length between the hub units: 0.5 / 1 / 2 / 5 / 10 m (Connection cable MZ41(Optional)) Total cable length from Main units: Max. 30m (Max. current: 4A or less) | | |
| Output resolution ¹ | Input resolution ² at resolution of 0.1µm | 0.1 / 0.5 / 1 / 5 / 10 µm | |
| | Input resolution ² at resolution of 0.5µm | 0.5 / 1 / 5 / 10 µm | |
| Measuring unit data capture ability (Communication 10Mbps) | Maximum 10000 data/sec (When 100 axes are connected) ³ | | |
| Output data | Single axis | Recalculation of peak value is started by start function | |
| | At addition and subtraction | Current, maximum, minimum, and peak-to peak values for each axis | |
| Function | Comparator, Reset, Preset, Datum points setting function ⁴ , Reference point ⁴ , Master calibration ⁵ , Measuring unit product information, Command setting | | |
| Mounting method | 35mm DIN rail mounting | | |
| Power supply voltage (Terminal board) | DC12~24 V (DC11~26.4 V) ⁶ | | |
| Power consumption | System total (Max. current 4A) ⁷ | | |
| Operating temperature and humidity range | 0~+50°C (No condensation) | | |
| Storage temperature and humidity range | -10~+60°C (20~90 %RH) | | |
| Mass | 300 g | | 250 g |

*1 Settable output data resolution and display resolution. *2 Measuring units resolution. *3 The data for one axis is counted as one data. *4 When master calibration function is not used

*5 Addition / subtraction axis is not possible *6 Use a power supply with a current that is 4 A or higher for every six MG42 hub units

*7 When the maximum current is exceeded, the connection can be enabled by providing a power supply to the MG42 hub units that come later in the connection.

*Magnescale reserves the right to change product specifications without prior notice.

MG10A/20A/30 Interface
 ▲ MG10A-P1 : RS-232C(Conforming to EIA-232C)
 ▲ MG10A-P2 : RS-232C(Conforming to EIA-232C)

Compatible with DK/DT Series

Main module specifications

| Model | MG10A-P1 | MG10A-P2 |
|------------------|---------------------------------|--|
| Power source | Power supply | DC12~24 V (11~26.4 V) Start up time: 100ms or less |
| | Power consumption | 2.0W + total power consumption for connected modules ¹ |
| | Inrush current(10 ms) | 10A or less (When the maximum number of modules are connected) |
| Communication | Power supply protection | Fuses (5-A fuses is built in) |
| | Communication I/F | RS-232C (EIA-232C or equivalent) |
| | Baud rate setting | 2400/9600/19200/38400 bps (set with DIP switch) |
| | Data length | 7/8 bit (set with DIP switch) |
| | Stop bit | 1/2 bit (set with DIP switch) |
| | Parity | NONE/ODD/EVEN (set with DIP switch) |
| | Delimiter | CR/CR+LF (set with DIP switch) |
| Linkage function | Maximum number of linkages | 16 (Total of counter modules: 64) |
| | Maximum number of linking cable | 10m |
| I/O | Input format | Source input(+COM) Sink input(-COM) |
| | Output format | Open collector output sink type(-COM) Source input(+COM) |
| | Input signal | Reset, Pause, Start, Latching, and Data out trigger to whole channel |
| | Output signal | Intergrated alarm |
| | Connectable modules | Counter modules |
| | Interface modules | MG30- B1, MG30-B2 ¹ |

*1 Total power of modules connected to MG10A should not be over 54W(at 12 VDC input) or 108W(at 24 VDC input)

*Magnescale reserves the right to change product specifications without prior notice.

Counter module specifications

| Model | MG20A-DK | MG20A-DT |
|----------------------|---|---|
| Power consumption | 1W + power consumption for connected measuring unit | 0.8 W |
| Measuring unit input | Corresponding measuring unit | DK Series (Voltage differential A/B quadrature input) |
| | Allowable resolution setting ² | DT Series |
| | | 10/5/1/0.5/0.1 µm |
| | | 5 µm (DT12/32) 1 µm (DT512) |
| | | set with DIP switch |
| | Maximum response speed | Subject to the specification of connected measuring unit |
| | Maximum response acceleration | Subject to the specification of connected measuring unit |
| | Reference point | REF-LED(reference point loaded) shows on the display after the reference point is detected Set "0" or preset value on the counter when the reference point is detected |
| Others | Alarm | S-ALM LED activates by excess speed/acceleration of measuring unit C-ALM LED activates by excess speed of the internal circuit of counter |
| | | The alarm display is cancelled by reset command from MG10A or with the reset button of main unit |

*2 Set the resolution value of the connected measuring unit

*Magnescale reserves the right to change product specifications without prior notice.

Interface module specifications

| Model | MG30-B1 | MG30-B2 |
|-------------------|--|---|
| Power consumption | 1W | |
| I/O | Input format | Source input(+COM) Counterpart output circuit : Current sink input(-COM) Current sink input(-COM) Counterpart output circuit: Source type(+COM) |
| | Output format | Open collector output sink type(-COM) Source type(+COM) Source type(+COM) Counterpart output circuit(+COM): Source type(-COM) |
| | Input signal | DRQ, channel address, Measuring mode shifting, Comparator shifting, Reset, Start, Pause, Reference-point loaded |
| | Output signal | BCD data(6 digits) READY GO GO/No-go output Alarm referene point |
| Output setting | Timer(1 to 128ms) OUT/OR Polarity (Set with internal DIP switch) | |

| All models | Operation temperature and humidity range | 0~+50 °C (No condensation) |
|------------|--|----------------------------|
| | Storage temperature and humidity range | -10~+60 °C (20~90%RH) |

*Magnescale reserves the right to change product specifications without prior notice.

MF10

Digital tolerance indicator / Counter module

| Model | Digital tolerance indicator | | Counter module |
|--|--|-----------------------------|--|
| | MF10-P1 | MF10-P2 | MF10-CM |
| Function | NPN output (current sink) | PNP output (current source) | Counter module for MG50 |
| I/O | Number of Go/No Go judgement output 2, Number of external inputs 1 | | - |
| Minimum display unit | 0.1 μm | | - |
| Cable length | input/output, power cable 2m | | - |
| Power supply | +10~30V DC including ripple (p-p) 10% | | |
| Power supply voltage / Power consumption | 2.1W or less / 85A or less (DC24V) | | |
| Operating temperature and humidity range | When lining up 1 or 2 digital tolerance indicators: 0°C to +55°C 35% to 85% RH (with no condensation) | | 1 to 2 amplifiers connected : 0~55°C 3 to 10 amplifiers connected : 0~50°C 11 to 16 amplifiers connected : 0~45°C 17 to 30 amplifiers connected : 0~40°C 35~85%RH(No condensation) |
| Storage temperature and humidity range | -10°C ~ +60°C (with no icing or condensation) | | |
| Mass | Approx. 75g | | |

*Magnescale reserves the right to change product specifications without prior notice.

LT30

For DK, DK-S

| Model | LT30-1G | LT30-1GB | LT30-1GC | LT30-2G | LT30-2GB | LT30-2GC |
|--|---|---------------|---------------|---|---------------|---------------|
| Number of input axes | 1 axis | | | 2 axes | | |
| Input resolution | 0.1 / 0.5 / 1 / 5 / 10 μm (parameter setting for each axis) | | | | | |
| Number of display axes | 1 axis | | | 2 axes | | |
| Display data | Current, max., min., peak-to-peak values (=max. value - min. value) | | | current, max., min., peak-to-peak values (=max. value - min. value), additional/subtraction value | | |
| Direction | Switchable | | | | | |
| Alarm display | Alarm display, Addition and subtraction function (Except LT30-1**), Peak hold function, Restart, Hold (latch and pause), Comparator, Reset, Preset, Master calibration, Reference point, Key lock | | | | | |
| Input/output | I/O connector | ○ | ○ | ○ | ○ | ○ |
| | BCD output | - | ○ | - | - | ○ |
| | RS-232C | - | - | ○ | - | ○ |
| | RS-TRG | - | - | ○ | - | ○ |
| | Comparator judgement | ○ | ○ | ○ | ○ | ○ |
| Power supply | DC10.8~26.4 V | | | | | |
| Power consumption | 5 W | 5.5 W | 5 W | 8.5 W | 9 W | 8.5 W |
| Operating temperature and humidity range | 0~+40°C | | | | | |
| Storage temperature and humidity range | -10~+50°C | | | | | |
| Mass | Approx. 200 g | Approx. 230 g | Approx. 220 g | Approx. 210 g | Approx. 270 g | Approx. 230 g |

*Magnescale reserves the right to change product specifications without prior notice.

LT11A/LT10A

For DT512 (LT11A) For DT12/32 (LT10A)

| Model | LT10A-105/LT11A-101 | LT10A-105B/LT11A-101B | LT10A-105C/LT11A-101C | LT10A-205/LT11A-201 | LT10A-205B/LT11A-201B | LT10A-205C/LT11A-201C |
|--|---|-----------------------|-----------------------|---|-----------------------|-----------------------|
| Number of input axes | 1 axis | | | 2 axes | | |
| Input resolution | 1 / 5 / 10 μm (parameter setting for each axis) (1 μm resolution is available only for 11A) | | | | | |
| Number of display axes | 1 axis | | | 2 axes | | |
| Display data | Current, max., min., peak-to-peak values (=max. value - min. value) | | | Current, max., min., peak-to-peak values (=max. value - min. value), additional/subtraction value | | |
| Direction | Switchable | | | | | |
| Maximum response speed | 100 m/min | | | 80 m/min | | |
| Function | Alarm display, Addition and subtraction function (Except LT10A-105** and LT11A-101), peak hold function, restart, hold(latch and pause), comparator, reset, preset, master calibration, reference point, key lock | | | | | |
| Input/output | I/O connector | ○ | ○ | ○ | ○ | ○ |
| | BCD | - | ○ | - | - | ○ |
| | RS-232C | - | - | ○ | - | ○ |
| | RS-TRG | - | - | ○ | - | ○ |
| | Comparator judgement | ○ | ○ | ○ | ○ | ○ |
| Power supply | DC9~26.4 V | | | | | |
| Power consumption | 1.8 W | 2.9 W | 2.0 W | 2.3 W | 4.0 W | 2.5 W |
| Operating temperature and humidity range | 0~+40°C | | | | | |
| Storage temperature and humidity range | -10~+50°C | | | | | |
| Mass | Approx. 200 g | Approx. 230 g | Approx. 220 g | Approx. 210 g | Approx. 270 g | Approx. 230 g |

*Magnescale reserves the right to change product specifications without prior notice.

LY71/LY72

Compatible with DK series

*Compatible with GB-ER series(Magnescale), PL20 series(Digiruler)

| Model | LY71 | LY72 ¹ | |
|--|--|--|---|
| | | When axis label A, B, and C are selected | When axis label X, Y, and Z are selected |
| Number of input axis | 1 axis or 2 axes(by parameter setting) | 1 axis, 2 axes, or 3 axes(by parameter setting) | |
| Input resolution | Linear standard : 0.1 / 0.5 / 1 / 5 / 10 μm (Expanded linear: 0.05/2/20/25/50/100 μm) Angle : 1 s / 10 s / 1 min / 10 min (Expanded angle : 1 degree) | | |
| Number of display axes | 3 axes(Axes A, B and C) ¹ | 3 axes(Axes A, B and C) | 3 axes (Axes X, Y and Z) |
| Display data | Current, max., min., and peak-to-peak values (=max. value - min. value) of each axis or current, max., min., and peak-to-peak values(=max. value - min. value) of 2 axis addition and subtraction ² | Current, max., min., and peak-to-peak values (=max. value - min. value) of each axis | Current value of each axis |
| Direction | Switchable | | |
| Function | Alarm display, addition and subtraction ³ , peak hold, restart, hold(latch and pause), comparator ⁵ , positioning, reset, preset, master calibration, Datum point/reference point, keylock, data storage, scaling, linear compensation | Alarm display, peak hold(When using axes A, B and C), restart(When using axes A, B and C), hold(latch and pause), reset, preset, master calibration(When using axes A, B and C), Datum point/reference point, keylock, data storage, scaling, linear compensation | Alarm display, hold(latch and pause), reset, preset datum point/reference point, keylock, data storage, scaling linear compensation |
| Input/ Output | BCD output ⁴ | ○ | - |
| | RS-232C | - | ○ |
| | Comparator judgement function ⁵ | ○ | - |
| Power supply | Optional PSC-21A/22A/23A adapter is used | | |
| Power consumption | 32 VA max.(When optional AC adapter is used) | | |
| Operating temperature and humidity range | 0~+40°C(No condensation) | | |
| Storage temperature and humidity range | -20~+60°C(No condensation) | | |
| Mass | Approx. 1.5 kg | | |

¹ LY72 can select whether to use ABC or XYZ in the axis label lamp on the left side of counter display.
ABC is mainly used when using measurement unit. XYZ is mainly used when using scale measurement unit.

² Available only 1 axis (A axis display) when LZ71-KR is used. Only comparator display when showing B-axis and C-axis.

³ Addition / subtraction display is not available when using two LZ71-B.

⁴ Available only when LZ71-B is used

⁵ Available only when LZ71-KR is used

*Magnescale reserves the right to change product specifications without prior notice.

LZ71-B

| Model | LZ71-B |
|--|---|
| BCD output | 7-digit parallel data (4 bits x7 digits) Sign (1bit) READY signal (1bit) |
| Output logic | Positive and negative logic can be selected individually for data and sign READY signal: Negative logic |
| Electrical specifications | Photocoupler output Vce: Recommended DC+12-24V Ic: Maximum 15mA /terminal;TOTAL:300mA Output connector: 36 pin micro-ribbon connector |
| Output data at power ON and during alarm | Data output and alarm status (all OFF) can be selected (Via initial settings) |
| Output data | Current (1st-axis, 2nd-axis, addition axis), max., min., and peak-to-peak values |
| Latch | Selectable from BCD-only latch and BCD and display latch |
| Input signal | DRQ1-3 (Photocoupler:12-24V) |
| Output selection | 3 DRQ input signals: DRQ 1-3; output data is assigned via settings. Ex.) DRQ1: Current value; DRQ2: Maximum value; DRQ3: Minimum value |
| Output modes | Constant output: Output irrespective of DRQ; prohibited when refreshing data Latch: BCD data-only latch LATCH: BCD data and display latch Request output: Output with DRQ input only. Otherwise, OFF can be selected |
| Operating temperature and humidity range | 0~+40 °C (with no condensation) |
| Storage temperature and humidity range | -20~+60 °C (with no condensation) |

*Magnescale reserves the right to change product specifications without prior notice.

LZ71-KR

| Model | LZ71-KR |
|--|---|
| Comparator function | Setting of comparator values 1 = 4 and judgment of magnitude of data |
| Comparable data | Current, max., min., and peak-to-peak values (Depends on setting)(For 1st-axis or Addition axis) |
| Combination of upper and lower values | With comparator values 1-4 as one group, data for 16 groups are selectable Selection method: Key operation or external contact input |
| Output data | 5-terminal signal output Photocoupler (Withstand voltage: 24V) Ic=15mA 5-terminal contact output DC24V AC120V 0.3A |
| External contacts | Photocoupler: 12-24V |
| Positioning function (One terminal) | Setting of positioning data, output signal ON for 0.5 sec when set value matches current value |
| Data to which position can be assigned | Current values only (In relation to 1st axis and additional axes) |
| Types of position value | Positioning values: With one terminal as one group, data for 16 groups are selectable Selection method: Same as comparator function |
| Operating temperature and humidity range | 0~+40 °C (with no condensation) |
| Storage temperature and humidity range | -20~+60 °C (with no condensation) |

*Magnescale reserves the right to change product specifications without prior notice.

DK805SAR/DK805SAR5/DK805SBR/DK805SBR5
DS805SR/DS805SR5
DF805SR

*Upon installation, clamp the stem

DK805SAFR/DK805SAFR5/DK805SBFR/DK805SBFR5
DS805SFR/DS805SFR5
DF805SFR

*Upon installation, clamp the stem

DK812SALR/DK812SALR5/DK812SBLR/DK812SBLR5
DS812SLR/DS812SLR5
DF812SLR

*Upon installation, clamp the stem

DK812SAFLR/DK812SAFLR5/DK812SBFLR/DK812SBFLR5
DS812SFLR/DS812SFLR5
DF812SFLR

*Upon installation, clamp the stem

DK805SALR/DK805SALR5/DK805SBLR/DK805SBLR5
DS805SLR/DS805SLR5
DF805SLR

*Upon installation, clamp the stem

DK805SAFLR/DK805SAFLR5/DK805SBFLR/DK805SBFLR5
DS805SFLR/DS805SFLR5
DF805SFLR

*Upon installation, clamp the stem

DK830SR

*Upon installation, clamp the stem

DK812SAVR/DK812SAV5/DK812SBVR/DK812SBV5
DF812SVR
(Pneumatic push type)

*Upon installation, clamp the stem

DK812SAR/DK812SAR5/DK812SBR/DK812SBR5
DS812SR/DS812SR5
DF812SR

*Upon installation, clamp the stem

DK812SAFR/DK812SAFR5/DK812SBFR/DK812SBFR5
DS812SFR/DS812SFR5
DF812SFR

*Upon installation, clamp the stem

DK830SLR

*Upon installation, clamp the stem

DK830SVR

*Upon installation, clamp the stem

DK/DF/DS 8**S*L** only

Hose elbow

DK/DF/DS 8**S*F* only

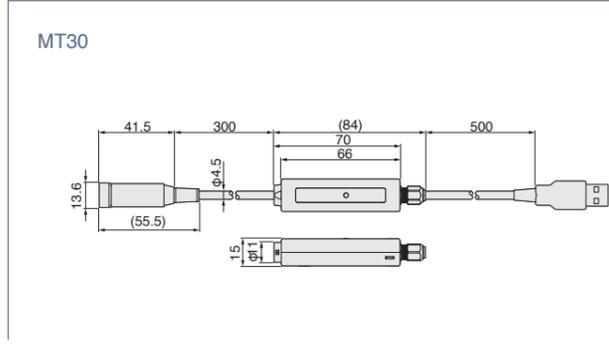
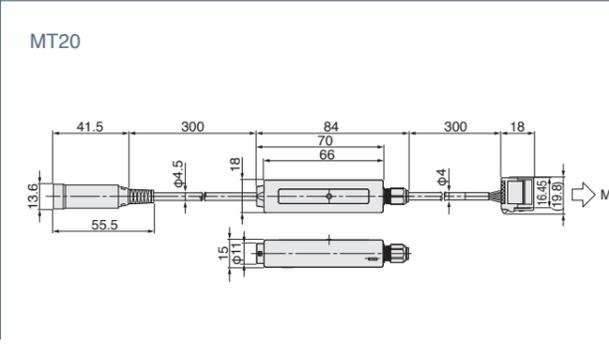
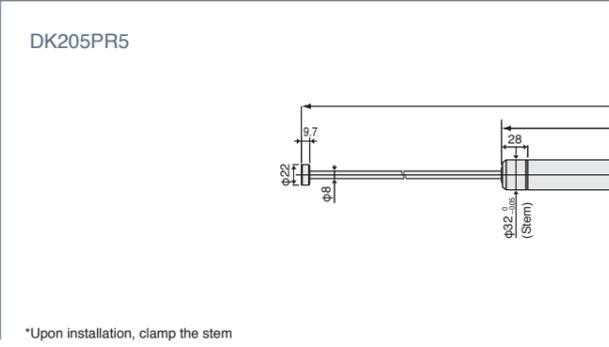
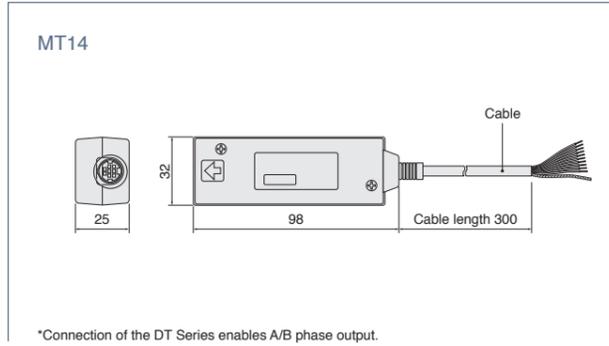
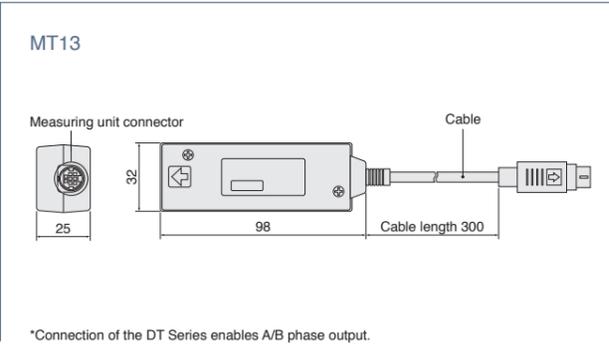
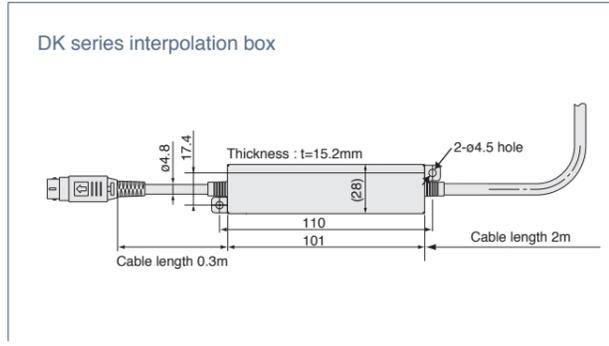
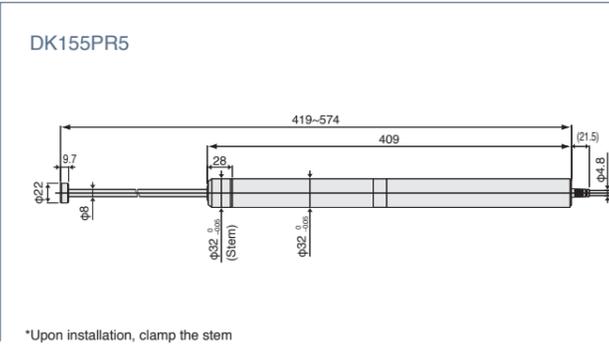
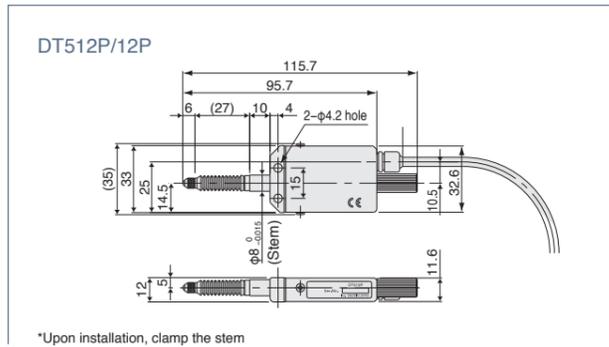
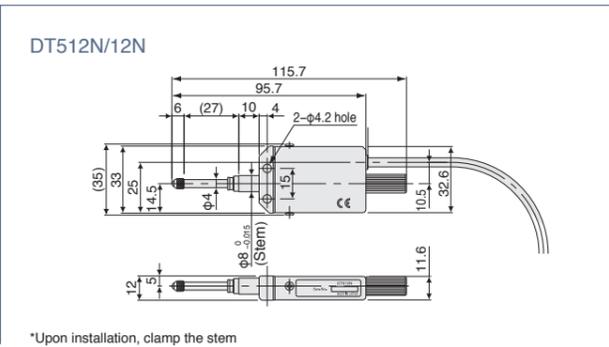
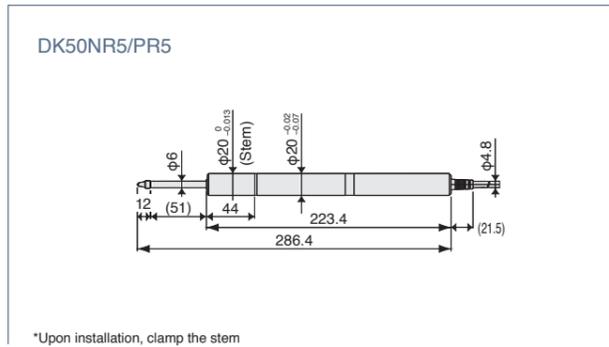
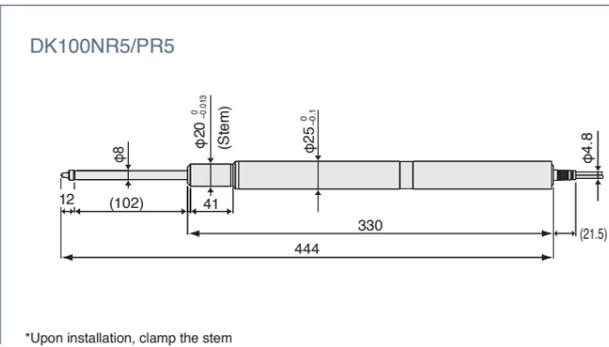
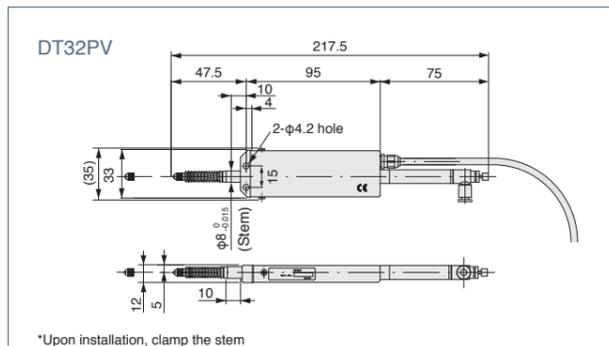
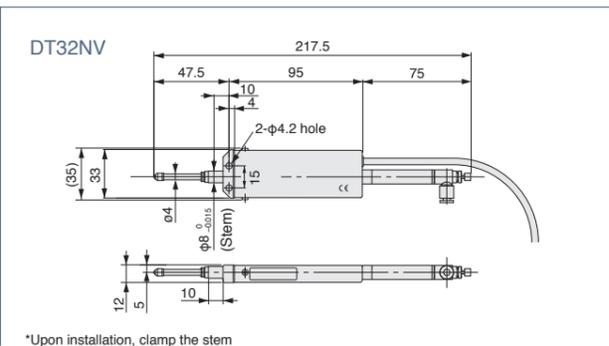
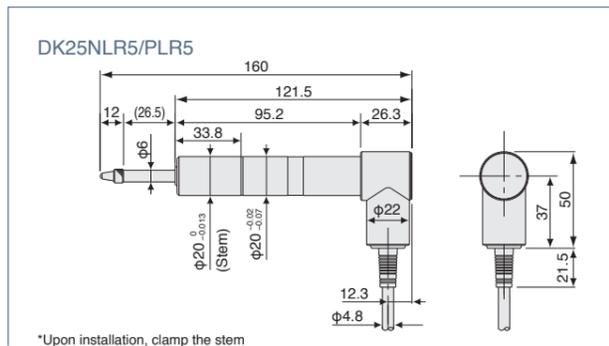
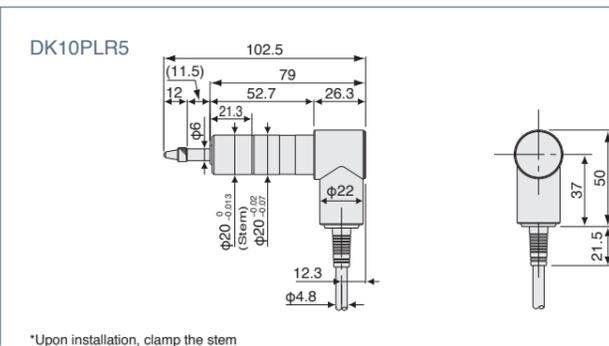
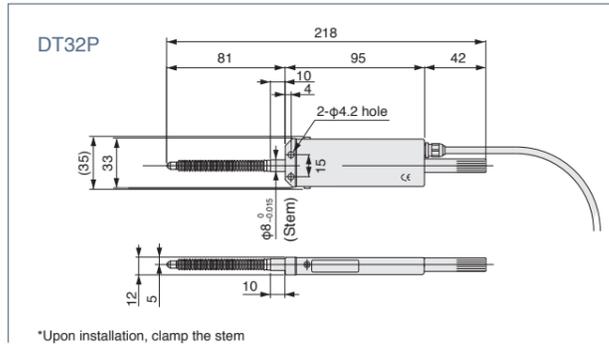
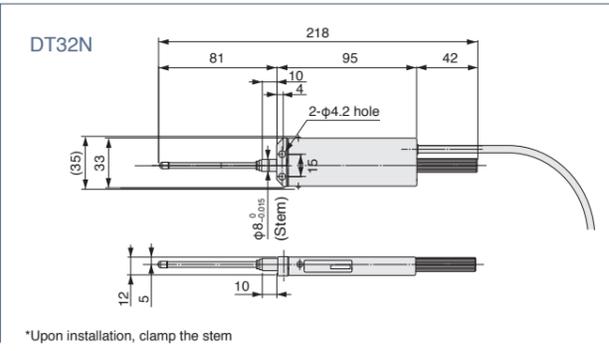
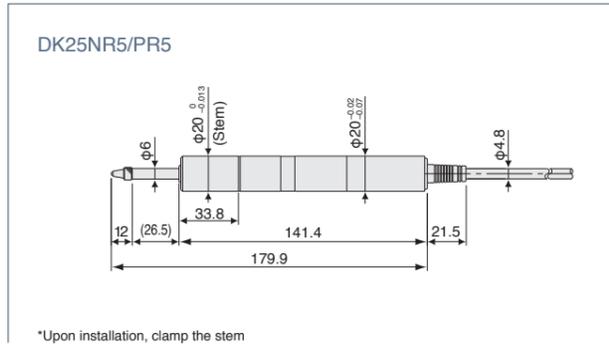
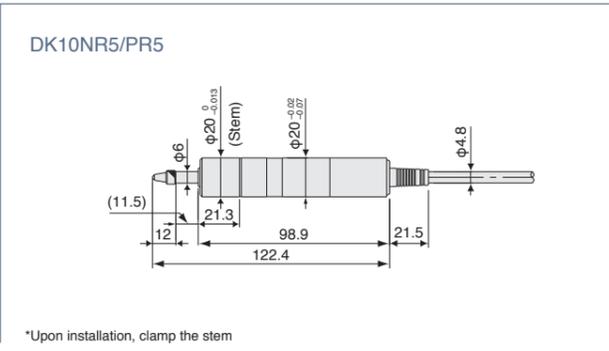
Tightening nut
Wave washer
Thickness: T=0.3mm

Interporation box

DKS series
Thickness : t=15.2mm 2-φ4.5 hole
Cable length 0.3m
110
101
Cable length 2m

DFS series
Interporation BOX
Cable length 2m
18
66
70
79

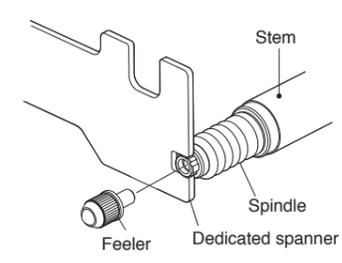
DSS series
USB2.0TYPE-A connector
Interporation BOX
Cable length 0.5 m
66
70
18
12



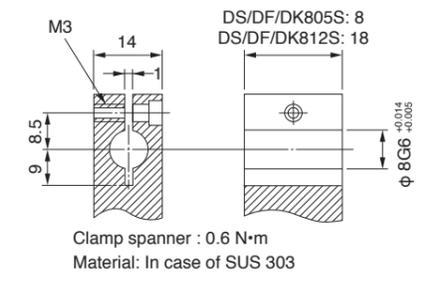
Installation

DS805S/812S, DF805S/812S, DK805S/812S installation cautions

Feeler installation/removal method



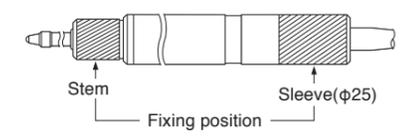
Mounting holder dimensions and tolerance



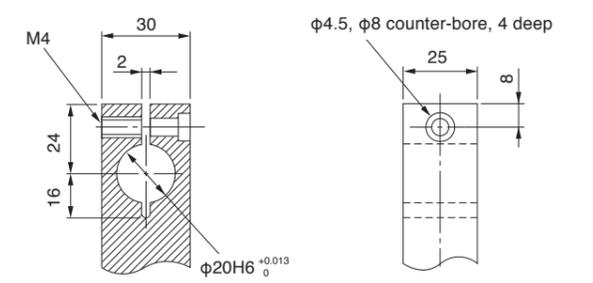
Unit: mm

DK50/100 installation cautions

Mounting/fixing position



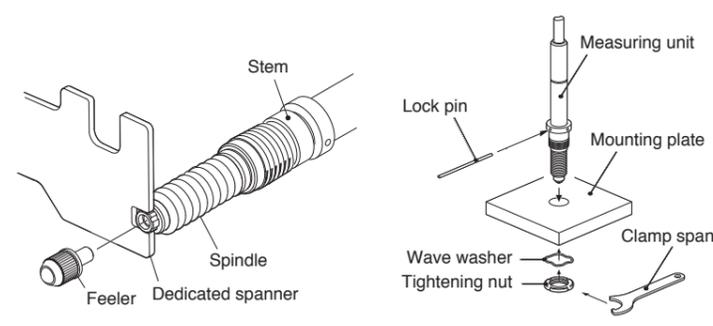
Mounting holder dimensions and tolerance



Unit: mm

DS805SF/812SF, DF805SF/812SF, DK805SF/812SF installation cautions

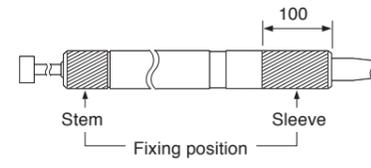
Feeler installation/removal method



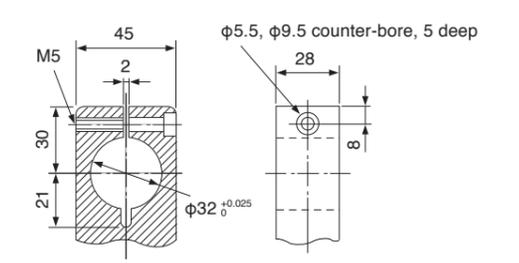
The recommended value of measuring unit mounting hole is $\phi 9.7 \pm 0.15 \text{ mm}$
 The mounting thickness is as follows:
 DS/DF/DK805SF : 7~11 mm
 DS/DF/DK812SF : 9~11 mm
 Mounting parallelism affects measurement accuracy
 Adjust the squareness to the surface to be measured or parallelism with respect to traveling to 0.02mm/14mm or less

DK155/DK205 installation cautions

Mounting/fixing position



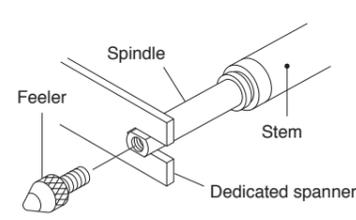
Mounting holder dimensions and tolerance



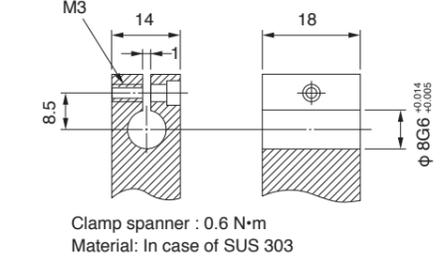
Unit: mm

DK830 installation cautions

Feeler installation/removal method



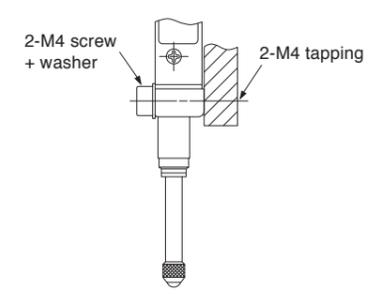
Mounting holder dimensions and tolerance



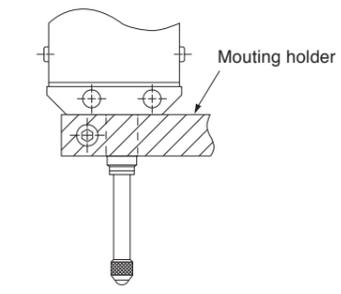
Unit: mm

DT12/512/32 installation cautions

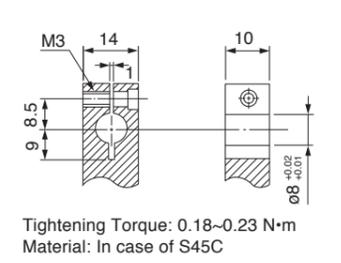
Mounting method using mounting hole



Mounting method using holder



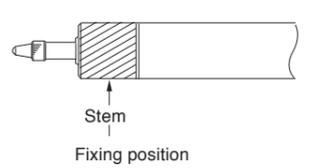
Mounting holder dimension



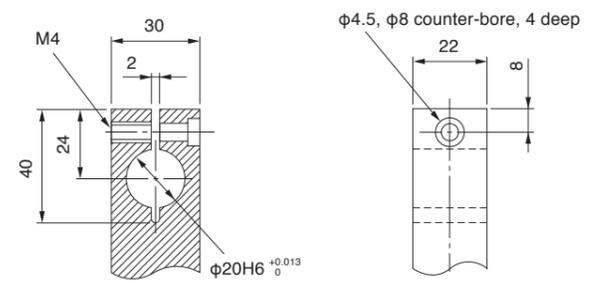
Unit: mm

DK10/25 installation cautions

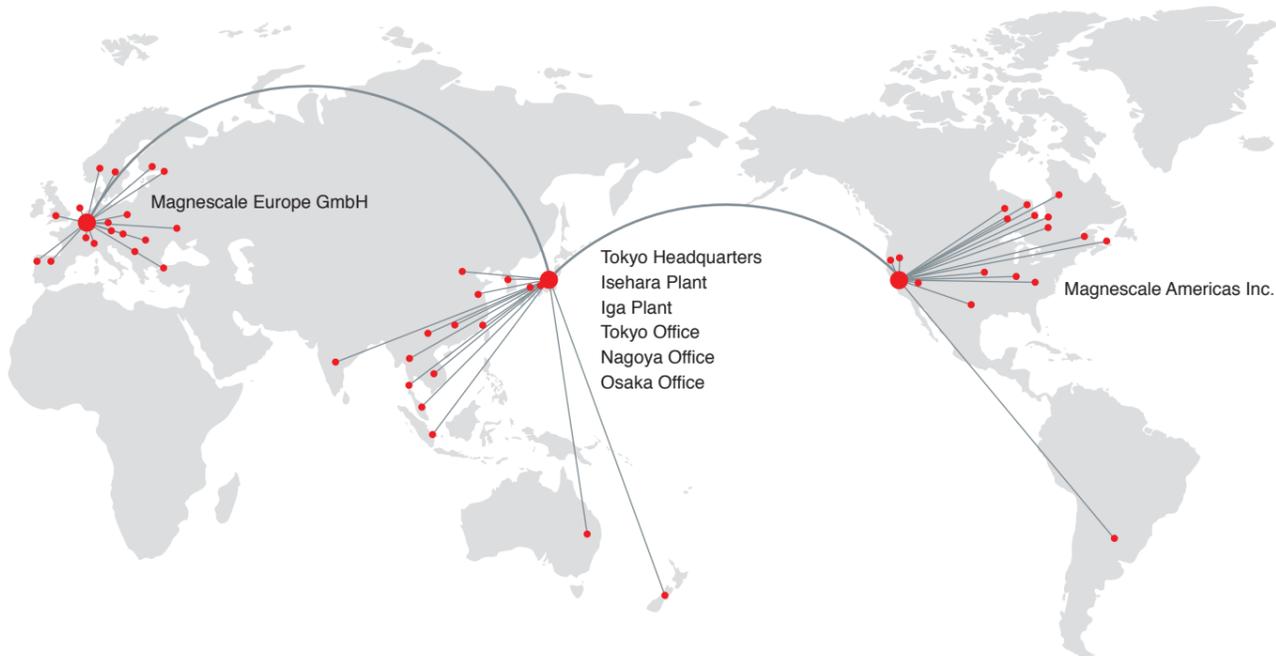
Mounting /fixing position



Mounting holder dimensions and tolerance



Unit: mm



Offices

| | | | |
|--------------------|--|---------------|---|
| Tokyo Headquarters | 3-1-4 Edagawa, Koto-ku, Tokyo 135-0051, Japan TEL:03-6632-7920 FAX:03-6632-7921 | Tokyo Office | 3-1-4 Edagawa, Koto-ku, Tokyo 135-0051, Japan TEL:03-6632-7922 FAX:03-6632-7928 |
| Isehara Plant | 45 Suzukawa, Isehara-shi, Kanagawa 259-1146, Japan TEL:0463-92-1011 FAX:0463-92-1012 | Nagoya Office | 2-35-16, Meieki, Nakamura-ku, Nagoya-shi, Aichi 450-0002, Japan TEL:052-587-1823 FAX:052-587-1848 |
| Iga Plant | 201 Midai, Iga-shi, Mie 519-1414, Japan TEL:0595-45-2663 FAX:0595-45-2683 | Osaka Office | 2-14-6, Nishi-Nakajima, Yodogawa-ku, Osaka-shi, Osaka 532-0011, Japan TEL:06-6305-3101 FAX:06-6304-6586 |

| | | | |
|--------------------------|--|------------------------|---|
| Magnescale Americas Inc. | 1 Technology Drive, Suite F217 Irvine, CA 92618 USA TEL: +1 (949) 727-4017 FAX: +1 (949) 727-4047 | Magnescale Europe GmbH | Antoniusstrasse 14, 73249 Wernau, Germany TEL:+49(0)7153 934 291 FAX:+49(0)7153 934 299 |
|--------------------------|--|------------------------|---|

Agency 34 countries in the world 81 agencies

- | | | | | | |
|--|---|--|--|---|--|
| <p>Europe</p> <ul style="list-style-type: none"> • Germany • Czech Republic • Finland • Spain • Italy • Norway • Ukraine | <ul style="list-style-type: none"> • Portugal • Romania • United Kingdom • Sweden • Bulgaria • Denmark • France, 2 companies | <ul style="list-style-type: none"> • Hungary • Netherlands • Poland • Turkey, 2 companies • Switzerland • Austria, 2 companies | <p>Asia · Oceania</p> <ul style="list-style-type: none"> • China, 3 companies • Hong Kong • Taiwan • Korea • Vietnam • Indonesia, 2 companies | <ul style="list-style-type: none"> • Singapore • Australia • Thailand, 2 companies • Malaysia • India, 2 companies • Philippines • New Zealand | <p>America</p> <ul style="list-style-type: none"> • America, 33 companies • Mexico, 3 companies • Canada, 3 companies • Argentina |
|--|---|--|--|---|--|

Magnescale has established a comprehensive support system enabling us to provide superior products. We offer a wide range of sales and servicing support for Magnescale products and technologies throughout Japan.

Deploying a global-standard production system, from quality control to environmental protection, Magnescale is thoroughly committed to delivering high-precision products.



We have established a total quality control system that oversees our processes from design to manufacture, ensuring that we are able to supply products with an unwaveringly high level of safety, quality, and reliability, offering our customers 100% satisfaction. As one example, we obtained certification for length calibration that is compliant with the system of traceability stipulated by Japan's Measurement Act. In addition to this, we have obtained ISO9001 certification, enabling us to create a quality management system that satisfies our customers' needs. We are also responding to the problem of noise, which is a subject of regulation throughout the world, by introducing electromagnetic environment compatibility (EMC) testing equipment of the highest standard, focusing all of our energies on quality management.



Magnescale holds ISO9001 quality management system certification.



Always aware that our products are incorporated in a wide range of devices and used throughout the world, we have obtained certification in CE Marking, UL, and other international standards.

We comply with the following standards:

- CE Marking (EMC Directive) EMI : EN61000-6-4 EMS : EN61000-6-2
- FCC standard FCC Part 15 Subpart B Class A

In the case of products with built-in AC power supplies, we also comply with the following standards:
● UL61010-1 ● EN61010-1

In the case of products that use lasers, we comply with the following standards:
● DHHS(21CFR1040.10) ● IEC60825-1

*When using a device to which IEC Directive EN60204-1 (Safety of machinery) applies, please use the device only after taking steps to comply with the standard.
*Depending on the product, applicable standards may differ, or the product may not be certified. Please inquire before purchase if considering export, etc.