

NTB-100/200 Series

Network Terminal Box



2
-42

Measuring Instrument



Data Logger

Amplifier

Indicator
&
Display

Handheld



Wide-range distributed arrangement with a single cable

- Channels: 4/unit (Max. 396*¹)
- Enables wide-range distributed arrangement (cable length: Max. 1 km)
- Noise-resistant digital signal transmission
- Power line and communication line can be wired with one cable even during distributed arrangement*²

*¹ When connected to PC

*² When using NTB-20A/21A

This is a scanning-type measuring instrument that can be expanded and arranged in a distributed manner with one cable.

Measurement data is digitized near the sensor and transmitted with CAN-compliant digital signals that are resistant to noise.

Additionally, by connecting to SME-100A/101A (P.2-112), measurements can be taken even without a PC.

Model

Network Terminal Box



NTB-100B-120
NTB-100B-350
NTB-110B-350

(Strain, One-touch terminal)

*The figure is NTB-100B-120.



NTB-101A-120
NTB-101A-350

(Strain, Screw soldering terminal)



NTB-201A

(Voltage, thermocouples)



NTB-10A

(NTB-100/200 series standard accessory*)

*NTB-10A is optional for models with suffix "-0".

Power Supply Box & Relay Box



Power Supply Box

NTB-20A



Relay Box

NTB-21A

Handy Data Logger



SME-100A/101A

(Max. 33 channels by connecting the NTB-100/200 Series.)



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NTB-100 Series Specifications

Network Terminal Box Models

Models*	Bridge excitation	Sensor input terminal	Quarter bridge
NTB-100B-120	Constant-voltage	One-touch terminal	120 Ω
NTB-101A-120	Constant-voltage	Screw soldering terminal	120 Ω
NTB-100B-350	Constant-voltage	One-touch terminal	350 Ω
NTB-101A-350	Constant-voltage	Screw soldering terminal	350 Ω
NTB-110B-350	Constant-current	One-touch terminal	For Full bridge only
NTB-111A-350	Constant-current	Screw soldering terminal	For Full bridge only

*Control Software NTB-10A is a Standard accessory.

Network Terminal Box and Measuring Targets

Bridge excitation	Measuring targets		NTB Models			
			General-purpose strain measurement		Civil engineering measurement	
			NTB-100B-120 NTB-101A-120	NTB-100B-350 NTB-101A-350	NTB-110B-350 NTB-111A-350	
Constant voltage	Strain gages	Quarter bridge	120 Ω	Yes	×	×
			350 Ω	×	Yes	×
	Strain-gage transducers	Half-bridge 120 to 1000 Ω	Active-active system	Yes	Yes	×
		Full-bridge 120 to 1000 Ω	Full bridge	Yes	Yes	×
Constant current	Civil engineering transducers	Full bridge 350 Ω	Full bridge	×	×	Yes
			Civil engineering transducer with thermal sensors	×	×	Yes

Channels 4

Scanning Speed Approx. 0.5 s/channel: 0 to $\pm 30 \text{ k} \times 10^{-6}$ strainApprox. 1 s/channel: $\pm 30 \text{ k} \times 10^{-6}$ strain or more

Approx. 1 s/channel: With civil engineering transducers

with a thermal sensor

Bridge Excitation Approx. 2 VDC for constant-voltage bridge excitation
Approx. 5.6 mA for constant-current bridge excitation
(At bridge resistance 350 Ω)

Measuring Range Strain measurement:

0 to $\pm 300 \text{ k} \times 10^{-6}$ strain (Constant-voltage bridge excitation)0 to $\pm 30 \text{ k} \times 10^{-6}$ strain (Constant-current bridge excitation)

Temperature measurement with civil engineering

transducers with a thermal sensor: -30.0 to 70.0°C

Resolution Strain measurement

0 to $\pm 30 \text{ k} \times 10^{-6}$ strain: 1×10^{-6} strain $\pm 30 \text{ k}$ to $\pm 300 \text{ k} \times 10^{-6}$ strain: 10×10^{-6} strain

Temperature measurement with civil engineering

transducers with a thermal sensor: 0.1°C

Accuracy Strain measurement

0 to $\pm 30 \text{ k} \times 10^{-6}$ strain: $\pm (0.05\% \text{ of reading} + 2) \times 10^{-6}$ strain $\pm 30 \text{ k}$ to $\pm 300 \text{ k} \times 10^{-6}$ strain: $\pm (0.01\% \text{ of reading} + 20) \times 10^{-6}$ strain

Temperature measurement with civil engineering

transducers with a thermal sensor: $\pm 0.5^\circ\text{C}$

TEDS Reads information from TEDS-installed sensors.

Channel name writing (Kyowa ID only)

Power Save Mode Provided ON/OFF using "OPT.3" DIP switch.

Interfaces Dedicated interface conforming to CAN

Operating Temperature -10 to 50°C

Operating Humidity 20 to 85% (Non-condensing)

Power Supply 11 to 16 VDC

Current Consumption (At 12 VDC)

Constant-voltage bridge excitation

Operation: 100 mA or less

Waiting: 60 mA or less

Standby (In power save mode): 40 mA or less

Constant-current bridge excitation

Operation: 70 mA or less

Waiting: 60 mA or less

Standby (In power save mode): 40 mA or less

Dimensions One-touch type: 150 W × 28 H × 55 D mm (Excluding protrusions)

Screw soldering type: 150 W × 28 H × 110 D mm (Excluding protrusions)

Weight One-touch type: Approx. 310 g

Screw soldering type: Approx. 650 g

Standard Accessories DC power cable P-76

Ground wire P-72

Wire connection seals

Rubber feet

Screwdriver (For one-touch type only)

Terminal block (For screw soldering type only)

Control software (NTB-10A)

Instruction manual (CD-R)

Optional Accessories Y cable N-103 (10 cm)

Communication cable N-102 (1 m)

*Please contact us if other than the cable lengths above are required.

AC adapter UNI318-1215-AC

(For use outside Japan, purchase an optional AC power cable.)

Connection board/clip CN-1A

DIN rail mounting plate

Terminal resistor CANTERM120

USB/CAN converter LEAFLIGHT HS V2

NTB-201A Specifications

Channels 4

Scanning Speed Approx. 0.5 s/channel

Measuring Targets Voltage, thermocouple

Voltage-output Measurement

Range	Measuring range	Resolution	Accuracy	Input resistance
10 V	0 to $\pm 10.0000 \text{ V}$	100 μV	$\pm (0.1\% \text{ of reading} + 0.0003 \text{ V})$	Approx. 1 MΩ
50 V	0 to $\pm 50.000 \text{ V}$	1 mV	$\pm (0.1\% \text{ of reading} + 0.003 \text{ V})$	Approx. 1 MΩ

Thermocouples

Types	Range	Accuracy (Resolution: 0.1°C)		Accuracy of Internal Reference-junction Compensator
K	-200.0 to 1230.0°C	-200.0 to below -100°C -100.0 to 1230.0°C	$\pm (0.2\% \text{ of reading} + 0.3^\circ\text{C})$ $\pm (0.1\% \text{ of reading} + 0.2^\circ\text{C})$	Within $\pm 0.5^\circ\text{C}$, when temperature balanced at input terminals, and the ambient temperature is 0 to 50°C.
T	-200.0 to 400.0°C	-200.0 to below -100°C -100.0 to 400.0°C	$\pm (0.2\% \text{ of reading} + 0.3^\circ\text{C})$ $\pm (0.1\% \text{ of reading} + 0.2^\circ\text{C})$	
E	-200.0 to 660.0°C	-200.0 to below -100°C -100.0 to 660.0°C	$\pm (0.2\% \text{ of reading} + 0.3^\circ\text{C})$ $\pm (0.1\% \text{ of reading} + 0.2^\circ\text{C})$	
J	-200.0 to 870.0°C	-200.0 to below -100°C -100.0 to 870.0°C	$\pm (0.2\% \text{ of reading} + 0.3^\circ\text{C})$ $\pm (0.1\% \text{ of reading} + 0.2^\circ\text{C})$	Within $\pm 1.0^\circ\text{C}$, when temperature balanced at input terminals, and the ambient temperature is -10 to 0°C.
R	0.0 to 1760.0°C	0.0 to below 100°C +100.0 to 1760.0°C	$\pm (0.2\% \text{ of reading} + 0.8^\circ\text{C})$ $\pm (0.125\% \text{ of reading} + 0.6^\circ\text{C})$	
N	-200.0 to 1300.0°C	-200.0 to below -100°C -100.0 to 1300.0°C	$\pm (0.2\% \text{ of reading} + 0.3^\circ\text{C})$ $\pm (0.1\% \text{ of reading} + 0.2^\circ\text{C})$	

*Accuracies do not include the accuracies of the internal reference junction compensator and the sensors.

*The reference junction compensator is switchable between internal and external.

*The thermocouple resistance should be 1 kΩ or less.

Check Functions Burnout check

Power Save Mode Provided

ON/OFF using "OPT.3" DIP switch.

Interfaces Dedicated interface conforming to CAN.

Operating Temperature -10 to 50°C

Operating Humidity 20 to 85% (Non-condensing)

Power Supply 11 to 16 VDC

Current Consumption (At 12 VDC)

Operation: 100 mA or less

Waiting: 100 mA or less

Standby (In power save mode): 40 mA or less

Dimensions 150 W × 28 H × 55 D mm (Excluding protrusions)

Weight Approx. 320 g

*TEDS function is unusable.

Standard Accessories DC power cable P-76

Ground wire P-72



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NTB-20A Specifications

Power Supply Object NTB Series

NTB Series Connected Units and Cable Length

the length of cable in the following tables indicates the case with power and communication cables.

With USB port

NTB series connected units	Cable length
1	200 m or less
2	100 m or less

When AC adapter or DC power supply used

NTB series connected units	Cable length
1	1000 m or less
2	840 m or less
3	560 m or less
4	470 m or less
5	330 m or less
6	280 m or less
7	240 m or less
8	200 m or less
9	180 m or less
10	160 m or less
11	150 m or less
12	130 m or less
13	120 m or less
14	120 m or less
15	110 m or less
16	100 m or less

When UNI345-1238-AC used

When UNI318-1215-AC used

(*1) Use the DeviceNet cable (DVN18) as the power and communication cables.

Power Save Functions	Provided
	In POWER switch "AUTO" mode (*1)
Operating Temperature	-10 to 50°C
Operating Humidity	20 to 85% (Non-condensing)
Power Supply Input	USB port: 5 VDC
	External power supply: 11 to 16 VDC
	(AC adapter, DC power supply)
Current Consumption	When using 12 VDC (Using AC adapter)
	OFF mode: 7.0 mA or less
	AUTO mode: 7.0 mA or less
	ON mode: 30.0 mA or less
	When using 5 VDC (Using USB port)
	OFF mode: 5.0 mA or less
	AUTO mode: 30.0 mA or less
	ON mode: 30.0 mA or less
Dimensions	150 W × 28 H × 55 D mm (Excluding protrusions)
Weight	Approx. 260 g

(*1) In "AUTO" mode, turning off the PC power supply automatically turns OFF the power supply to the NTB-20A (NTB power supply box).

■ **Optional Accessories** Connection cable N-38 (1 m), N-39 (2 m)
Communication cable N-102 (1 m)
*Please contact us if other than the cable lengths above are required.

NTB-21A Specifications

Input Voltage Range	11 to 16 VDC
Operating Temperature	-10 to 50°C
Operating Humidity	20 to 85% (Non-condensing)
Dimensions	150 W × 28 H × 29 D mm (Excluding protrusions)
Weight	Approx. 160 g

■ **Optional Accessories** Power and communication cable N-114

NTB-10A Specifications**Operating Environment**

OS	Windows* 10, Windows* 11
	Japanese/English, 32/64 bits support
	(64-bit only for Windows* 11)
CPU	Core 2 Duo, 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Hard Disk	Empty storage 10 MB or more
	(Excluding the target data file size.)
Display	1024 × 768 pixels or more
USB/CAN Converter	Manufacture: KVASER
	Model: LEAFLIGHT HS V2
Measuring Units	NTB series: 1 to 99 (Max. 396 channels)
Measuring Functions	RELATIVE measurement (Relative value less measurement):
	Each value is obtained by subtracting the ZERO value.
	*ZERO value is equivalent to the initial unbalance value.
	Capable of obtaining the ZERO value at arbitrary timing.
Channels Conditions	Meas channel ON/OFF, CAL coefficient calculation ON/OFF,
	CAL coefficient, Offset, Unit, Dec. digits,
	resistance at 0°C, CH Name (20 characters)
Measuring Condition File	Load and save
Measuring Operations	MONITOR Meas (Measures ZERO value during MONITOR measurement)
	One-time measurement
	Continuous measurements
	INTERVAL Meas (To be specified the number of measurements)
Interval Measurement	Interval start time
	Interval time
	Repeat 0 to 9999 (0 to infinite)
	Interval measuring steps: 5
Numeric Display	Available windows: 1
	Window switch: List only
Graph Display	Y-time, BAR graph
	Max. 8 channels/graph
Measured Data Saving Function	The measured data is saved with the CSV format.
TEDS	Reads sensor's information and sets to channel condition automatically.
	Channel name writing
Data File Destination	PC hard disk
File Split	No split
	Split every hour
	Split every day



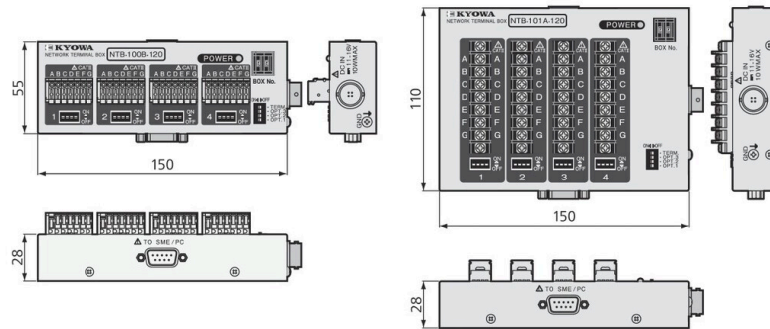
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■ Dimensions

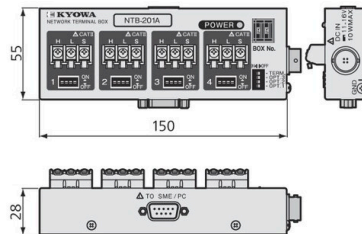


NTB-100B/111B

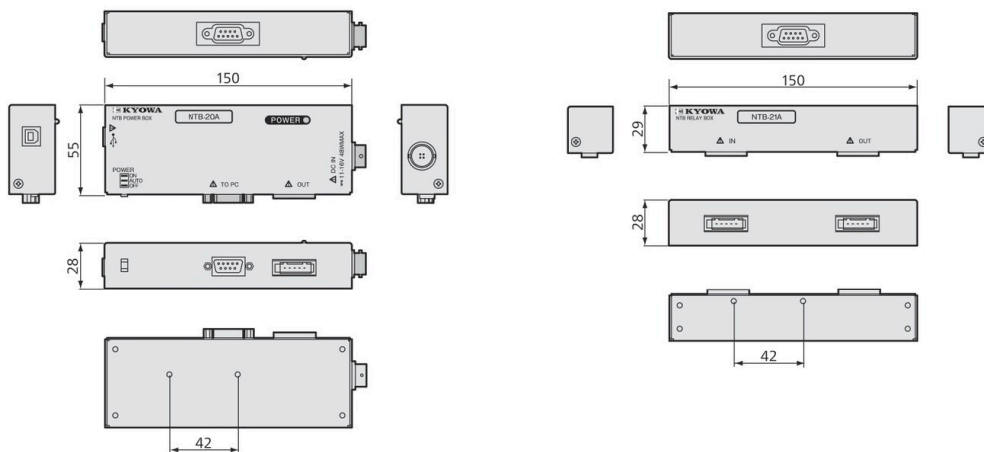
*The figure is NTB-100B-120.

NTB-101A

*The figure is NTB-101A-120.



NTB-201A



NTB-20A

NTB-21A