

NTB-500C

Medium Speed Network Terminal Box



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-46

Measuring Instrument

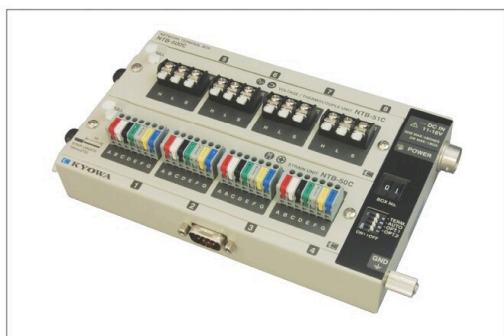


Data Logger

Amplifier

Indicator
&
Display

Handheld



Distributed arrangement with one cable

- Channels: 8/unit (max. 64)
- Synchronous sampling of all channels (max. 1 kHz)
- Distributed arrangement (cable length: max. 400 m)
- Compatible with CAN communication

This is a compact, lightweight data logger capable of simultaneous measurement of all channels at a maximum of 1 kHz.

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

Model

Model	Remarks
NTB-500C	Main body with DCS-100A
NTB-500C-0	Main body
NTB-50C	Strain Unit
NTB-51C	Voltage/Thermocouple Unit

To Ensure Proper Usage

There are the following restrictions when combining with the conventional NTB-500A:

- NTB-500C (-0) cannot be combined with NTB-50A/B or NTB-51A.
- NTB-50C and NTB-51C cannot be combined with NTB-500A (-0).

Standard Accessories

DC power cable P-76
Ground wire P-72
NTB-500A/C dummy panel (NTB500-DUMMY)*1
*1 NTB-500A/C dummy panel is mounted on a vacant slot before shipment.
Wire connection seal
Rubber feet × 4
Driver holder (With a mini screwdriver) × 1 set
Simplified software
Driver for a USB/CAN converter
DVD (Dynamic Data Acquisition Software DCS-100A) *2
*2 For NTB-500C, standard accessory.
For NTB-500C-0, optional accessory.
Instruction manual

NTB-500C Specifications

Models NTB-500C, control software DCS-100A (Standard accessory)
NTB-500C-0, control software DCS-100A (Optional accessory)

Mountable Measuring Units

Measuring Instrument	Mountable measuring units		
	Models	Names	Terminal blocks
NTB-500C	NTB-50C	Strain Unit	One-touch type
	NTB-51C	Voltage/Thermocouple Unit	Screw-soldering type

*You are not able to combine with the NTB-50A, NTB-50B, NTB-51A.
*You are able to combine with the NTB-500A.

Measuring Unit and Measuring Targets

Measuring unit			Strain unit NTB-50C	Voltage/thermocouple unit NTB-51C
Measuring targets				
Strain gages	Quarter bridge 120 Ω	2-wire system	Yes	—
		3-wire system	Yes	—
	Half-bridge 120 to 1000 Ω	Active-active system	Yes	—
Strain-gage transducers	Full-bridge 120 to 1000 Ω	Full bridge system	Yes	—
	Voltage	±10.0000 V	—	Yes
		± 50.000 V	—	Yes
Temperature	Thermocouples	K (CA)	—	Yes
		T (CC)	—	Yes

Channels	Max. 8/unit
	Mixed combination of up to 2 measuring units (4/unit) possible
Synchronous Operation	Max. 8 units, 64 channels
	NTB-500C can connect with the NTB-500A.
Automated Measurement Functions	Able to preset the measuring conditions by using the Measurement Condition Setting Software.
	Able to output the CAN data after turning ON the power.
	There is no data synchronization between measuring instruments.
Sampling Frequencies	1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 Hz
	(Synchronous sampling of all channels)

Sampling frequencies (Hz)	Max Input Channels			
	Cable length 20 m	Cable length 80 m	Cable length 100 m	Cable length 400 m
1k	8	4	—	—
500	16	8	4	—
200	40	20	8	4
100	64	40	20	8
50	64	64	40	20
20 to 1	64	64	64	64

*Make sure the firmware version is 01.05 or later for using the communication cable length 400 m.

Cable Length	Total extended cable length, max. 400 m
TEDS	When NTB-50C installed
	Reads information from TEDS-installed sensors.
	Channel name writing
	(If the manufacturer's ID is Kyowa)
Interfaces	Bosch 2.0B active support
	(ISO-11898 specifications-compliant high-speed CAN)
Data Save	Measurement data is saved on a PC. (No internal storage)
Operating Temperature	-10 to 50°C
Operating Humidity	20 to 85% (Non-condensing)
Power Supply	11 to 16 VDC
Current Consumption (When using 12 VDC)	

Measuring unit	Stand-by	Measuring
With 2 NTB-50C installed	200 mA or less	230 mA or less
With 2 NTB-51C installed	250 mA or less	300 mA or less

Dimensions	175 W × 28.7 H × 106.4 D mm (Excluding protrusions)
Weight	Approx. 490 g
Compliance	Directive 2014/30/EU (EMC)
	Directive 2011/65/EU, (EU)2015/863
	(10 restricted substances) (RoHS)



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- **Optional Accessories** NTB-500A/C sync communication cable N-119 (1 m)
 Note: Please contact us if other than the cable lengths above are required.
 NTB-500A/C sync Y-cable N-120 (One side 0.1 m)
 Connection cable N-38 (1 m)
 AC adapter UNI318-1215-AC
 (For use outside Japan, purchase an optional AC power cable.)
 Strain unit NTB-50C
 Voltage/thermocouple unit NTB-51C
 Docking board for 2 boxes of NTB-500A/C CN-10A: For connecting 2 boxes of NTB-500A/C
 Docking board for 4 boxes of NTB-500A/C CN-11A: For connecting 4 boxes of NTB-500A/C
 NTB-500A/C dummy panel NTB500-DUMMY
 DIN rail mounting plate
 DIN rail (35 mm)
 Terminal resistor CANTERM120
 USB/CAN converter LEAFLIGHT HS V2
 Data analysis software DAS-200A
 NTB power supply box NTB-20A

NTB-50C Specifications

Terminal Block	One-touch type
Channels	4
Measuring Targets	Strain gages Strain-gage transducers
Compatible Bridge Resistance	Quarter-bridge 120 Ω (2-wire, 3-wire) Half-bridge, Full-bridge 120 to 1000 Ω
Gage Factor	2.00 fixed
Bridge Excitation	2 VDC±1%
Check Functions	Cable disconnection check
TEDS	Reads information from TEDS-installed sensors. Channel name writing (If the manufacturer's ID is Kyowa)

Measuring Range, Resolution, Range Accuracy

Measuring range	Resolution	Range accuracy
30 k × 10 ⁻⁶ strain	0.1 × 10 ⁻⁶ strain	±0.1% FS
300 k × 10 ⁻⁶ strain	1 × 10 ⁻⁶ strain	

Response Frequencies	DC to 100 Hz (Deviation +1 dB, -3 dB)
Dimensions	152.2 W × 6.1 H × 45 D mm (Excluding protrusions)
Weight	Approx. 85 g
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

NTB-51C Specifications

Terminal Block	Screw-soldering type
Channels	4
Measuring Targets	Voltage, thermocouples (K, T)
Check Functions	Burnout check
TEDS	N/A

Measuring Range, Resolution, Accuracy

■ At voltage measurement

Measuring range	Resolution	Range accuracy	Input resistance
10 V	100 μV	±0.1% FS	Approx. 1 MΩ
50 V	1 mV		

■ At thermocouple measurement

Type	Measuring Range	Resolution	Accuracy	
			External standard junction	Internal standard junction range, temp. (25±10)°C
K	-200.0 to 1230.0°C	0.1°C	±(0.5%rdg+1.0)°C	±(0.5% of reading +2.0)°C (At input terminal temp. balance)
T	-200.0 to 400.0°C			

- *Accuracy doesn't include the accuracy of the thermocouple.
 *Switching between internal and external standard junction compensator is possible.
 *Thermocouple resistance 1 kΩ or less

Response Frequencies	At voltage measurement: DC to 100 Hz (Deviation +1 dB, -3 dB) At thermocouple measurement: DC to 10 Hz (Deviation +0.5 dB, -1 dB)
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Isolation	Between channels: 50 MΩ or more (500 VDC)
Dimensions	152.2 W × 6.1 H × 45 D mm (Excluding protrusions)
Weight	Approx. 95 g
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU, (EU)2015/863 (10 restricted substances) (RoHS)

DCS-100A software, specification for control of NTB-500A/C

*For details of DCS-100A, see chapter 4.

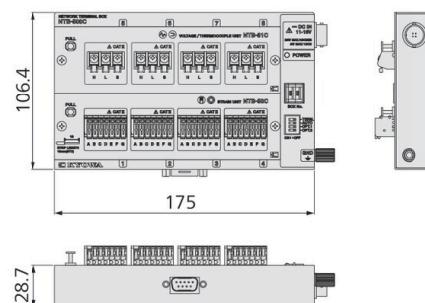
Units	Up to 8 units (up to 64 channels.)
Interfaces	CAN *Uses the USB-CAN converter (LEAFLIGHT HS V2).
Saving Format	Saves the measured data in the PC folder in the KS2 format file.
Channel Conditions	Measuring ON/OFF, Measuring mode, Range, ZERO, Calibr. const., Offset, Unit, Channel name, Measuring range, Rated capacity, Rated output, Deci Digits, Chk. Val. (Up), Chk. Val. (Down) (Display items can freely be selected.)
Sampling Frequency	1 Hz to 1k Hz *Limited by the communication cable length and number of channels.
Measuring Mode	Manual, Manual (Set Record Data), Interval, Analog Trigger
Manual Measurement	Records data from REC to STOP or from REC to the number of data, specified on the manual (Set Record Data).
Interval Measurement	Records data automatically based on the preset starting time and recording interval. (5 steps, sets the recording interval of each step.)
Analog Trigger Measurement	Starts/stops recording data based on the pre-set trigger conditions.
End Trigger	Settable
Delay	Up to 262144 data for both start and end. *The delay time varies with the number of channels.
Trigger Channels	Any 1 channel
Trigger Level	Sets in physical quantity.
Trigger Slope	Positive or negative
Loading TEDS Sensor Information	Loads the TEDS information automatically and sets the channel conditions.
Changing Stroke	Changes the data, before the stroke and after the stroke, when using a displacement transducer.
Static Measurement	Every time the DCS-100A starts recording data, the DCS-100A additionally saves the moving-averaged measured data in a single CSV format file. *Measure Mode: Manual and Interval only.
Repeated Recording	When recording data for a long time, the DCS-100A saves data, every preset number of data or every pre-set interval, in the KS2 format file. *Measure Mode: Manual (Set Record Data) only.

Setting Environment

Setting Hardware Configuration

- Sets the number of units, communication cable length, device names, and measuring units.
 Loads the hardware configurations from the NTB-500A/C.

■ Dimensions



NTB-500C

*With each one unit of NTB-50C and NTB-51C installed.