NTB-500A

Medium Speed Network Terminal Box

Medium speed sampling support for all channels synchronously

- Distributed deployment with one wire by CAN communication
- Synchronous measurement of all channels at a max. 1 k Hz.
- 8 channels in a single unit (8 units synchronously, 64 channels)
- Connects the PC via CAN/USB converter
- DCS-100A support (Dynamic Data Acquisition Software)
- Measurement of large strain (300 k ×10^{-6} strain)
- Strain, voltage, and thermocouple units provided

Specifications

Measuring Targets and Measuring Unit

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

Channels	Max. 8 channels/unit
	Mixed combination of up to 2 measuring units
	(4 channels/unit) possible
Synchronous Operation	Max. 8 units, 64 channels
Sampling Frequencies	1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 Hz
	Synchronous sampling of all channels

Sampling Frequencies (Hz)	Max. measured channels		
	Cable length =20 m	Cable length =80 m	Cable length =100 m
1000	8	4	–
500	16	8	4
200	40	20	8
100	64	40	20
50	64	64	40
20 to 1	64	64	64

Cable Length	Total extended cable length, max. 100 m
TEDS	When NTB-50B 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-50B installed	200 mA or less	230 mA or less
With 2 NTB-51A 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

Strain Unit (NTB-50B) Specifications

Channels	4
Measuring Targets	Strain gages
	Strain-gage transducers
Applicable Gages	Quarter-bridge 120 Ω (2-wire, 3-wire)
	Half-bridge, Full-bridge 120 to 1000 Ω
Applicable 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

Voltage/Thermocouple Unit (NTB-51A) Specifications

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	Accuracy		Resolution
		External standard junction	Internal standard junction range, temp. (25±10)°C	
K	-200.0 to 1230.0°C	±(0.5% of reading+1.0)°C	±(0.5% of reading +2.0)°C (At input terminal temp. balance)	0.1°C
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 +1dB, -3dB)
	At thermocouple measurement: DC to 10 Hz
	(Deviation +0.5dB, -1dB)
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

Standard Accessories

DC power cable P-76: 1
Ground wire P-72: 1
NTB-500A dummy panel (NTB500-DUMMY): 1*
* NTB-500A dummy panel is mounted on a vacant slot before shipment.
Wire connection seal: 1
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) **
** For NTB-500A, standard accessory. For NTB-500A-0, optional accessory.
Instruction manual

Optional Accessories

NTB-500A sync communications cable N-119 (1 m)
Note: Please contact us if other than the cable lengths above are required.
NTB-500A sync Y-cable N-120 (One side 0.1 m)
Connection cable N-38 (1 m)
AC adapter SA-10A-EDS (100 to 240 VAC)
(For U.S.A.: UNI318-1215-EDS)
Strain unit NTB-50B
Voltage/thermocouple unit NTB-51A
Docking board for 2 boxes of NTB-500A
CN-10A: For connecting 2 boxes of NTB-500A
Docking board for 4 boxes of NTB-500A
CN-11A: For connecting 4 boxes of NTB-500A
NTB-500A dummy panel NTB500-DUMMY
DIN rail mounting plate DRA-1
DIN rail (35 mm)
Terminal resistor CANTERM 120
USB/CAN converter LEAF LIGHT HS V2
Data analysis software DAS-200A

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

For details of DCS-100A, see page 4-3.

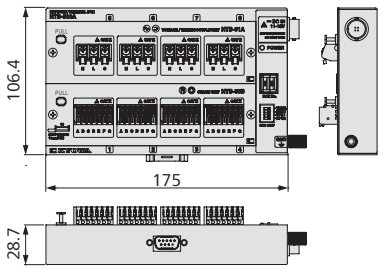
Controllable Units	Max. 8 (Max. 64 channels)
Interfaces	CAN, a specified USB/CAN converter (Kvaser Leaf Light HS V2) is required.
Data Storage	Measured data is saved to data folder in the PC in KS2 format.
Channel Conditions	Mode, range, zero, calibration coefficient, offset, units, measurement ON/OFF, decimal point, chk. val. (Up), chk. val. (Down), channel name, measuring range, rated capacity, rated output (Selection of any display item is possible.)
Sampling Frequencies	1 Hz to 1 kHz (Depends on the number of measuring channels and the cable length)
Measuring Modes	Manual, manual (Data points preset), interval, and analog trigger
Manual Measurement	Measurement is made from a press of the REC button to a press of the STOP button or by completion of recording using a preset number of measurements.
Interval Measurement	Measurement is made automatically at preset intervals from the preset starting time. (No. of steps: 5; the interval can be changed at each step)
Analog Trigger Measurement	Start/stop recording based upon specified trigger conditions.
End Trigger	Settable
Delay	For both start and end, max. 262144 points/channel. *The delay time varies with the number of channels.
Trigger Channels	Any 1 channel
Trigger Level	Sets in physical quantity.
Trigger Slope	Up, down
TEDS	Reads sensor's information and sets to channel condition automatically.
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 in manual and interval modes.
Repetition Acquisition	In long-term data acquisition, a specified amount of data (Or time) is saved in KS2 file . *Workable in manual mode (Data points preset).
Setting/Loading Parameters	Sets and loads the NTB-500A internal parameters.

■**Environmental Settings**

Hardware Configuration	Setting of connected units, communications cable length, device name, measuring unit settings Reading of hardware configuration from NTB-500A.

■Dimensions (Excluding protrusions)

*External appearance with each one unit of NTB-50B and NTB-51A installed



NTB-500A

NTB-500A Recommended products for combination

Data Analysis Software DAS-200A
→ 4-7