

Network Communication Unit NU Series



CC-Link V2

DeviceNet

EtherNet/IP

EtherCAT



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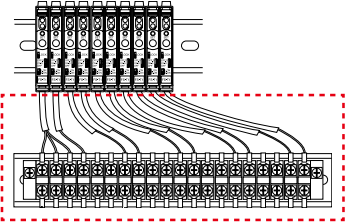
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Free downloads for product and technical support are readily available in one convenient location

Dramatic reduction in wiring and installation time

Conventional Method

Multiple preparation and wiring steps increased the installation time.



Wires for each sensor



With the NU Series



No wires

Only a single communication cable is required between the PC/PLC and the NU Series for wiring.

When using 10 amplifiers that are connected in series.

Conventional wiring (Series connection)

50 min.

NU Series

5 min.

90% less time than the conventional installation process

Improved functionality through remote access

Status monitoring, settings changes, and setup backup/recovery can be done via HMI, PLC, or PC*.

Monitoring

The sensor status can be monitored on an HMI, PLC or PC*, making it easier to detect problems before errors occur.

Tooling change (setting value change)


The NU allows for settings to be changed externally from an HMI, PLC or PC. As a result, changeover time can be reduced, even where sensor settings must be changed frequently.

*This connection requires an interface card or interface software that supports the respective networks.

*EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Specifications


EtherNet/IP™ Compatible Network Unit: NU-EP1

Model		NU-EP1
Appearance		
Ethernet specifications	Compliance	IEEE802.3 (10BASE-T)
		IEEE802.3u (100BASE-TX)
		IEEE802.3af (Power over Ethernet, Class 3)
	Transmission rate	10 Mbps (10BASE-T)
		100 Mbps (100BASE-TX)
	Transmission media	STP cable or Category 3 or higher UTP cable (10BASE-T) ¹
STP cable or Category 5 or higher UTP cable (100BASE-TX)		
Maximum cable length	100 m (distance between the unit and Ethernet switch)	
Maximum number of connectable hubs ²	4 (10BASE-T) 2 (100BASE-TX)	
EtherNet/IP™ Specifications	Compatible functions	Cyclic communication Compatible with UCMM and Class 3 messaging (Explicit messaging)
	Number of connections	64
	RPI (Transmission cycle)	0.5 to 10000 ms (in units of 0.5 ms)
	Tolerable communication bandwidth for cyclic communication	6000 pps
	Conformance test	Compatible with Version A7
Sensor connection specifications	Connectable sensors	Sensor amplifiers with N-bus support ³
	Number of connectable sensor units	Up to 16 units ⁴
	Power supply	Power is supplied from the unit via a sensor amplifier connection connector.
	Allowable passing current ⁵	Total 1200 mA or less
	Power during PoE power receiving ⁶	Supply voltage: 24 V ± 10 %, supply current: 360 mA or less ⁷
Power voltage		24 VDC ± 10 %, ripple (p-p) 10% or less (with power supply connector)
Power consumption		48 VDC (Max. 57 VDC) (During PoE power receiving)
Weight (including connector)		1500 mW or less (60 mA max. at 24 V) ⁸
Accessory		Approx. 80 g
		Instruction manual, power connector, 2 end units

1. When using the power PoE power receiving function, use the STP cable or Category 5 or higher UTP cable. 2. The number of connectable units is not limited when using a switch.

3. "N-bus" is the name of KEYENCE's wiring-saving system for sensor amplifiers. *4 Depends on the sensor amplifiers connected. 5. Value for the current which can be supplied to this unit or to a sensor amplifier unit connected to this unit. 6. Power which can be supplied to the sensor amplifier when using the PoE power receiving function. 7. Varies according to the working ambient temperature. (-20 to 45°C: 360 mA or less, 45 to 50°C: 260 mA or less, 50 to 55°C: 140 mA or less) *8 Current to be supplied to the connected sensor amplifier is not included.

EtherCAT® Compatible Network Unit: NU-EC1


Model		NU-EC1
Appearance		
Ethernet specifications	Compliance	IEEE802.3u (100BASE-TX)
	Transmission rate	100 Mbps (100BASE-TX)
	Transmission media	Category 5e or higher STP cable
	Distance between nodes	100 m
	Communication port	RJ-45 x2
EtherCAT® communication specifications	Compatible functions	Process data object communication (cyclic communication) Mailbox communication (message communication) CoE compatible
	Connectable sensors	Sensor amplifiers with N-bus support ¹
Sensor connection specifications	Number of connectable sensor units	Up to 16 units ²
	Power supply	Power is supplied from the unit via a wiring-saving connector
	Allowable passing current ³	Total 1200 mA max.
Power voltage		24 VDC ±10 %, ripple (p-p) 10 % or less
Power consumption		1700 mW or less (70 mA max. at 24 V) ⁴
Weight (including connectors)		Approx. 80g
Accessory		Instruction manual, power connector, 2 end units

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3. Value for the current which can be supplied to this product or a sensor amplifier unit connected to this product. 4. Current to be supplied to the connected sensor amplifier is not included.

DeviceNet™ Compatible Communication Unit: NU-DN1

Model		NU-DN1		
Appearance				
DeviceNet™ specifications	Supported functions	I/O Message (polling) Explicit Message		
	Address setting	0 to 63 (PGM compatible)		
	Baud rate (automatically switched)	500 kbps	250 kbps	125 kbps
	Maximum cable length	100 m (thick cable)	250 m (thick cable)	500 m (thick cable)
100 m (thin cable)		100 m (thin cable)	100 m (thin cable)	
Sensor connection specifications	Connectable sensors	Sensor amplifiers with N-bus support ¹ .		
	Number of connectable sensor units	Up to 16 units ²		
	Power supply	Power is supplied from the DeviceNet™ communication power supply via the unit.		
	Maximum passing current	Total 1200 mA max. ³		
Power voltage		11 to 25 VDC		
Power consumption		1480 mW or less (60 mA max. at 24 V, 106 mA max. at 12 V) ⁴		
Weight (including connector)		Approx. 65g		
Accessory		Instruction manual, DeviceNet™ connector, end unit × 2		


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 *3 Value for the current which can be supplied to this product or a sensor amplifier unit connected to this product. *4 Current to be supplied to the connected sensor amplifier is not included.

CC-Link Compatible Communication Unit: NU-CL1

Model		NU-CL1		
Appearance				
CC-Link specifications	Compatible version	Ver.2.00/Ver.1.10 (switchable)		
	Number of occupied stations	Ver.2.00: 3 stations; Ver.1.10: 1/2/3/4 stations (switchable)		
	Type of station	Remote device station		
	Transmission speed	156 kbps/625 kbps/2.5 Mbps/5 Mbps/10 Mbps		
	Setting of station numbers	1 to 64		
Sensor connection specifications	Connectable sensors	Sensor amplifiers with N-bus support ¹ .		
	Number of connectable sensor units	Up to 16 units. ²		
	Power supply	Power is supplied from the unit via a wiring-saving connector.		
	Maximum passing current	Total 1200 mA max. ³		
Power voltage		24 VDC ± 10%; ripple (p-p) 10% or less		
Power consumption		1400 mW or less (55 mA max. at 24 V) ⁴		
Weight (including connector)		Approx. 80g		
Accessory		Instruction manual, CC-Link connector, power connector, termination resistor, end unit × 2		

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 3. Value for the current which can be supplied to this product or a sensor amplifier unit connected to this product. 4. Current to be supplied to the connected sensor amplifier is not included.

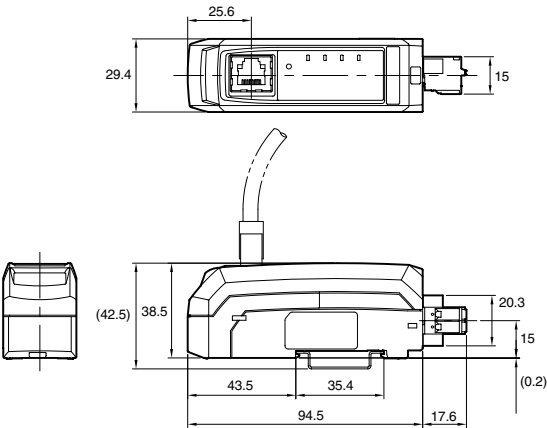
Communication Unit Compatible e-CON Network Input Unit: NU-EN8N

Model		NU-EN8N		
Appearance				
Connectable communication units		NU-DN1/NU-CL1/NU-EP1/NU-EC1		
Number of connectable sensor units		Up to 2 units (occupied ID numbers: 8) ¹ .		
I/O	Connector	e-CON connector (4-pin)		
	Inputs	8		
	Supply voltage for equipment	Supplied from the communication unit		
	Supply current	520 mA or less (total for 8 ports)		
	Input signal	NPN open collector output, contact output		
	Input response time	20 μs or less		
	Internal input voltage	8 VDC (Reference value of input current: 3.1 mA)		
	Input resistance	2.4 kΩ		
Power voltage		12 to 24 VDC ±10%; ripple (p-p) 10% or less ²		
Weight (including tag)		Approx. 55g		
Accessory		Instruction manual, tag, index seal		

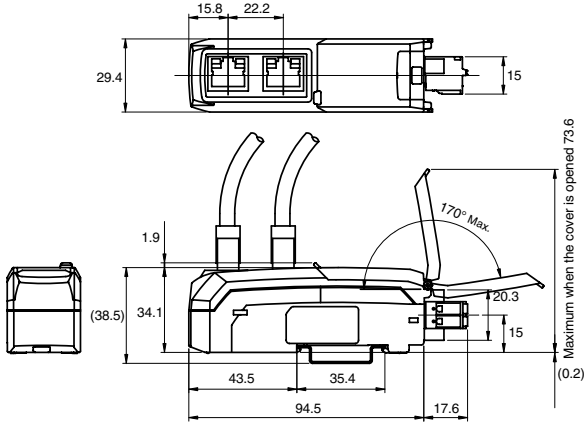
1. To connect the **NU-EN8N** to a communication unit, connect it after the sensor amplifier. Sensor amplifier connected after this unit will not be recognized by the communication unit.
 2. Power to the **NU-EN8N** is supplied from the connected communication unit.

Dimensions Unit: mm

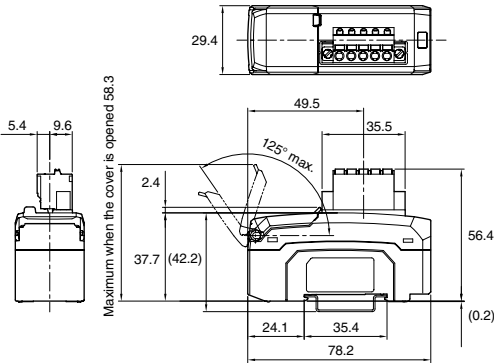
NU-EP1



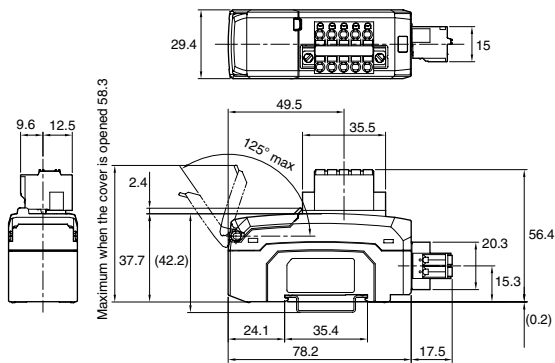
NU-EC1



NU-DN1



NU-CL1



NU-EN8N

