

EK30 **NEW**

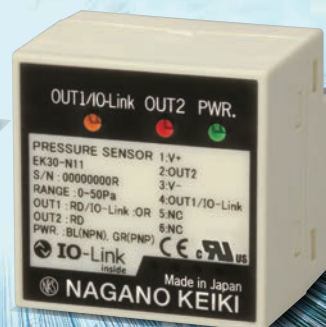
IO-Link compatible Digital Differential Pressure Sensor

- □30 mm compact / equipment built-in application
- Supports ultra-fine differential pressure range 10 Pa to 20 kPa range and achieves high proof pressure of 50 kPa for all pressure ranges
- Accuracy: $\pm 1.0 \%$ F.S. (500 Pa or more), $\pm 1.5 \%$ F.S. (200 Pa or less)

**IO-Link with differential pressure measurement
expands possibilities of factory equipment!**

 **IO-Link**

NEW



Without display



EK30



Useful even when performing maintenance!

EK30-D

- Checking differential pressure on site
- Changing setting values using operation buttons
- Checking setting values on the sub display

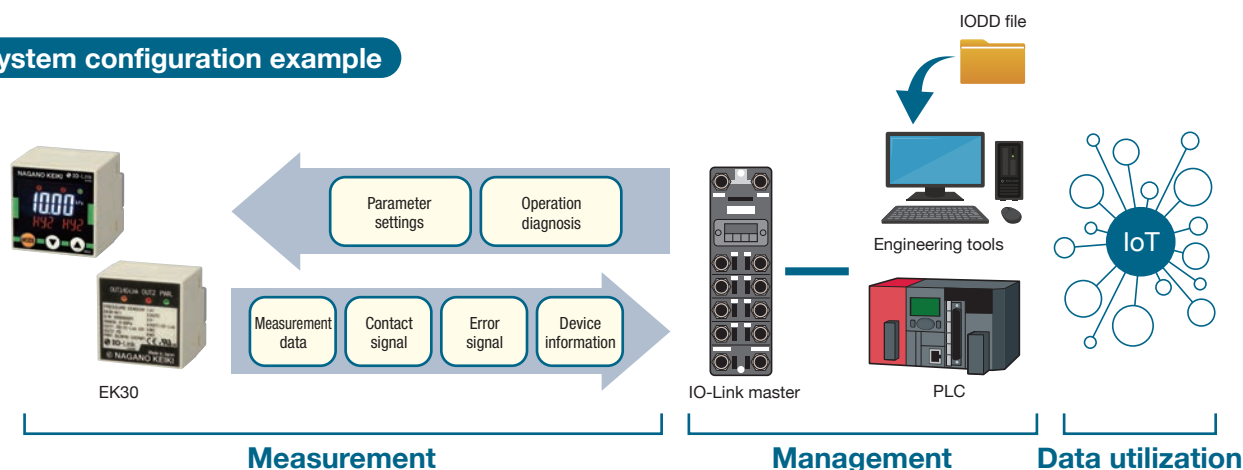


Ideal for centralized monitoring!

EK30-N (Without display)

- Checking the operating status with LED display
- Preventing setting changes in the field

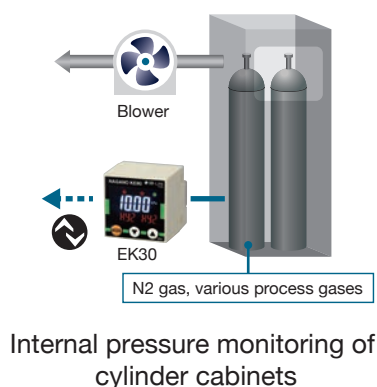
System configuration example



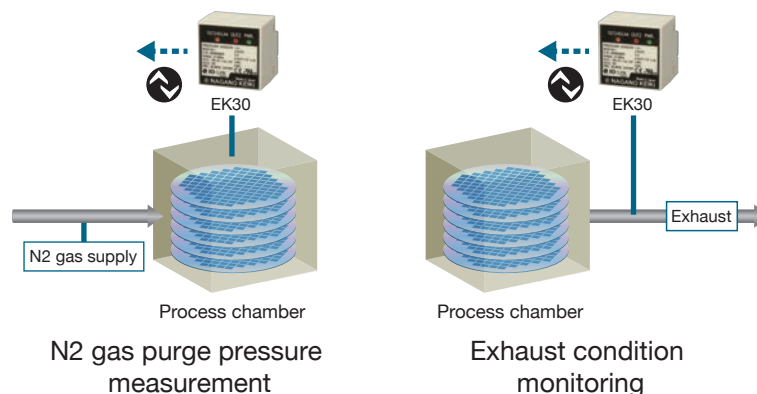
- Automated device management through mutual communication
- Reduced time to restart - easy parameter setting

Applications

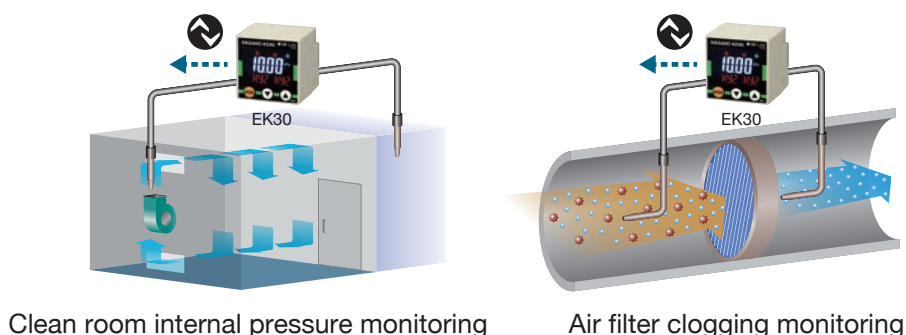
Cylinder cabinets



Various semiconductor manufacturing equipment



Air conditioning system



IO-Link compatible Digital Differential Pressure Sensor

Product Specifications

Item		Description	
Process media		Non-corrosive gases such as dry air or N2 gas (free from moisture and dust)	
Indication			
	With display	LCD display with multicolor LED backlight (7 segments 4 digits x 3) OUT1: Red/IO-Link: Orange, OUT2: Red, PWR: Blue (NPN) /Green (PNP)	
	Without display	3LEDs-OUT1: Red/IO-Link: Orange, OUT2: Red, PWR: Blue (NPN) /Green (PNP)	
Pressure port		M5 (female thread)	
Material			
	Gas contacting parts	Silicon, Glass, Silicone, PBT	
	Case	PBT	
Supply voltage			
	With display	24V DC±10% current consumption: Approx. 60mA DC (not Including digital output, comparator output and analog output)	
	Without display	24V DC (10 to 35VDC) current consumption: Approx. 40mA DC (not Including digital output, comparator output and analog output)	
Output	Digital output	IO-Link V1.1-COM2 (38.4kbps) Process data (10ms cycle min.)	
	Comparatr output (2 outputs)	Open collector	NPN (Max. Voltage: 35V DC, 180mA DC or less)
			PNP (With display: within the supply voltage range, 50mA DC or less, Without display: within the supply voltage range, 110mA DC or less)
		Update interval	50 ms or less
		Operation mode	Hysteresis mode (Single, Two), Window comparator mode
	Analog output (Option)	Current output	4 to 20mA DC (400Ω or less)
		Voltage output	1 to 5 V DC (10kΩ or less)
		Update interval	50 ms or less
	I/O connector		e-CON (RITS 6-pin connector (1473562-6))
Oper.tamp.range			
	With display	NPN,IO-Link outout : -10 to 60°C (no freezing or condensation)	
		PNP output : -10 to 50°C (no freezing or condensation)	
	Without display	NPN,IO-Link outout : -10 to 60°C (no freezing or condensation)	
		PNP output : -10 to 55°C (no freezing or condensation)	
Oper. humidity Range		35% RH to 85%RH (no condensation)	
Storage temp. range		-20°C to 70°C (no freezing or condensation)	
Protection class		IP40 (Indoor specification)	
UL standard			
	Standard No.	UL 61010-1 (scheduled)	
	File No.	E475503	
Degree of pollution		Standard IEC60664-1 Degree of pollution	
Operating altitude		2,000m or less	
Weight			
	With display	Approx. 80g	
	Without display	Approx. 75g	

Product range, Display value

Dif. pressure range (Digital output and display digits)		Max. allowable pressure*1	Accuracy (at 23 ± 2°C)	Temp. coefficient (zero-point & span)	Analog output accuracy (at 23 ± 2°C)	Square root operation accuracy*2
0 to 10 Pa (10.00)	± 10 Pa (10.00)	50 kPa	± (1.5 % F.S.+1 digit)	± 0.15 % F.S./°C	± 1.5 % F.S.	± 0.5 % F.S. (Applicable for digital output value in the differential pressure range of 5 to 100 % F.S.)
0 to 25 Pa (25.00)	± 25 Pa (25.00)					
0 to 50 Pa (50.00)	± 50 Pa (50.0)					
0 to 100 Pa (100.0)	± 100 Pa (100.0)					
0 to 200 Pa (200.0)	± 200 Pa (200.0)					
0 to 500 Pa (500.0)	± 500 Pa (500)		± (1.0 % F.S.+1 digit)	± 0.10 % F.S./°C	±1.0 % F.S.	
0 to 1 kPa (1.000)	± 1 kPa (1.000)					
0 to 2 kPa (2.000)	± 2 kPa (2.000)					
0 to 5 kPa (5.000)	± 5 kPa (5.00)					
0 to 10 kPa (10.00)	± 10 kPa (10.00)					
0 to 20 kPa (20.00)	—					

*1 The maximum allowable pressure is the upper limit of the pressure value which may safely be applied to the product and remain in specification once pressure is returned to the rated range, with a couple of times over-pressurization for about 10 minutes. Effects of continuous over-pressure are not guaranteed.

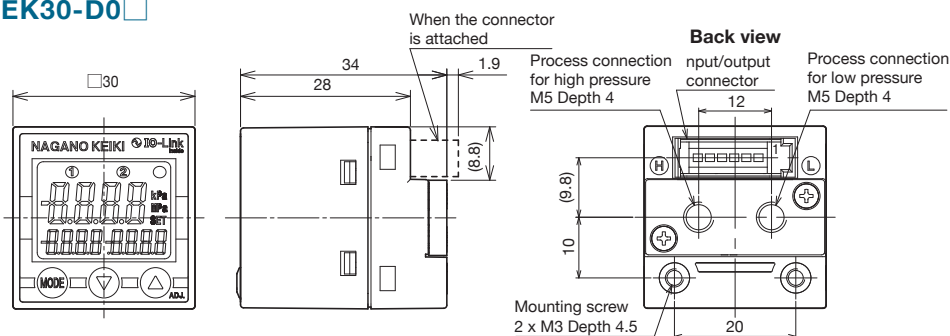
*2 Not available for compound ($\pm$) range.

EK30

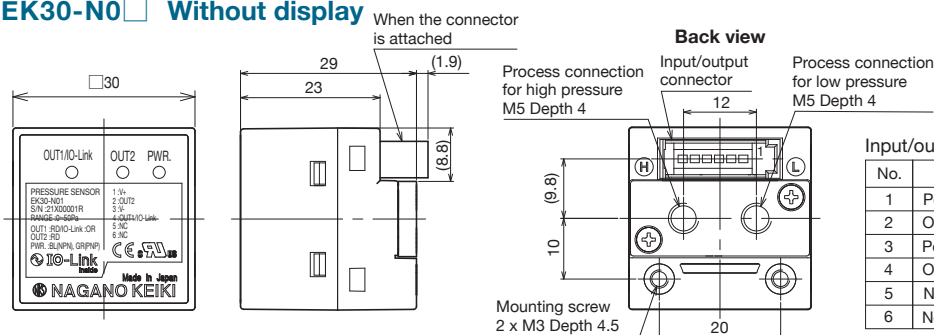
Dimensions

Unit: mm

EK30-D0



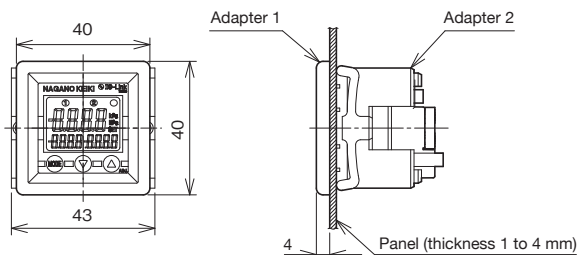
EK30-N0 Without display



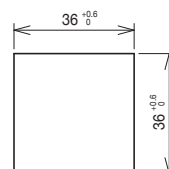
Option

Unit: mm

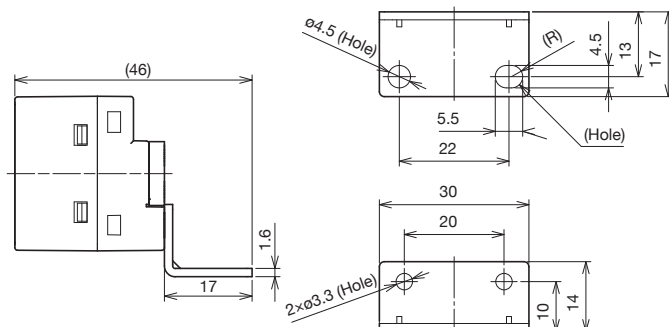
●Panel mount adapter (Only with display*)



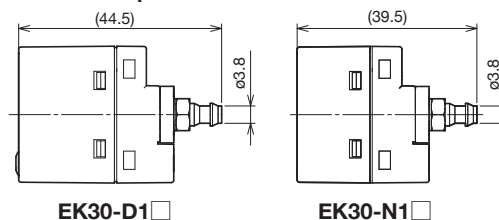
●Panel cut dimensions



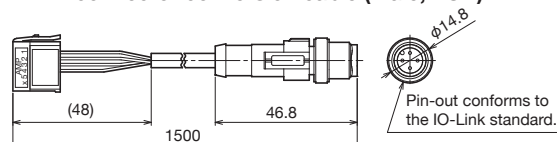
●Attachment L type mounting clamp



●ø4 Barb 2 pcs.



●M12 connector conversion cable (Male, PUR)

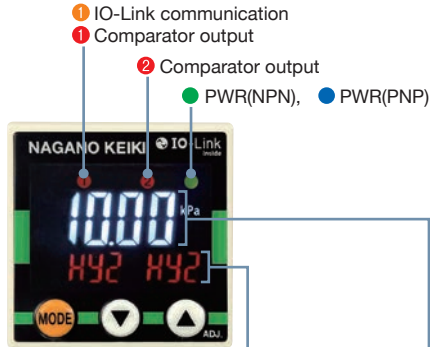


* Due to the dimensions of the panel mount adapter, only the adapter with display is compatible.

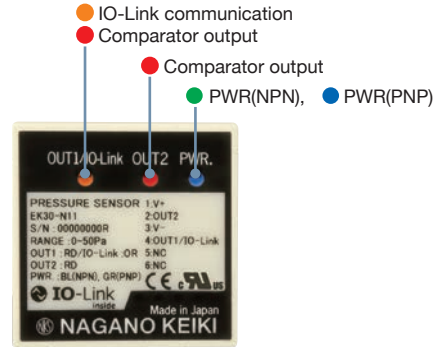
IO-Link compatible Digital Differential Pressure Sensor

Function Indication / operating status

With display



Without display



Main screen (differential pressure display)

0000 Differential pressure display **FFFF** Out of display range (e.g. upper limit)

Sub screen (setting display / operating status)

Zero point adjustment mode

Operation	Indication	Description
 Press and hold for more than 3 seconds	1234 Add of	Zero point adjustment successfully
	1234 Add E-0	Zero point adjustment failed (Zero point adjustable range: within -10 to 10%F.S. of pressure range)

Loop check

Operation	Indication	Description
 + 	1234 LoP 4321	Manually test display, analog output and comparator output regardless of applied pressure

Function setting mode * Sub settings can be changed using the UP and DOWN keys.

Comparator 1 Select action 1234 CNP1 dAC	Inactive 1234 CNP1 dAC
Comparator 2 Select action 1234 CNP2 dAC	Inactive 1234 CNP2 dAC
Select NPN/PNP 1234 nPn	NPN 1234 nPn
Select display unit 1234 Un tPA	kPa 1234 Un tPA
Scaling display Decimal point position 1234 d-P 0	0 1234 d-P 0
Scaling display Min. value of display range 1234 d-L 9999	-9999 1234 d-L 9999
Scaling display Max. value of display range 1234 d-H 9999	-9999 1234 d-H 9999
Set temperature unit 1234 tEMP °C	°C 1234 tEMP °C
Set low cut 1234 LCa- 100	-10.0 1234 LCa- 100
Set filter 1234 FIL F-0	No filter 1234 FIL F-0
Analog scaling Min. output value 1234 A-L -1000	-100.0 1234 A-L -1000
Analog scaling Max. output value 1234 A-H -1000	-100.0 1234 A-H -1000

Model number configuration Please specify the model number and each specs. for ordering.

Model name

E K 3 0

IO-Link compatible Digital
Differential Pressure Sensor

Model number

Selective spec.

Additional spec. (option)

①Indication	D	With display	LCD display with multicolor LED backlight (7 segments, 4 digits x 3)												
	N	Without display	3 LEDs for operation												
②Process connection	0	M5 female screw (Standard)													
	1	Barb for inner diameter ø4 tube (Set of 2)													
③Function	1	Differential pressure display													
	2	Square root operation function													
④Differential pressure range		④	⑤	④Differential pressure range								⑤Accuracy			
⑤Accuracy															
		5	8	0 to 10 Pa								± (1.5 % F.S.+1 digit) at 23 °C			
		6	8	0 to 25 Pa											
		M	8	0 to 50 Pa											
		N	8	0 to 100 Pa											
		P	8	0 to 200 Pa											
		Q	7	0 to 500 Pa								± (1.0 % F.S.+1 digit) at 23 °C			
		R	7	0 to 1 kPa											
		S	7	0 to 2 Pa											
		T	7	0 to 5 kPa											
		U	7	0 to 10 kPa											
		V	7	0 to 20 kPa								± (1.5 % F.S.+1 digit) at 23 °C			
		8	8	± 10 Pa											
		A	8	± 25 Pa											
		B	8	± 50 Pa											
		C	8	± 100 Pa											
		D	8	± 200 Pa								± (1.0 % F.S.+1 digit) at 23 °C			
		E	7	± 500 Pa											
		F	7	± 1 kPa											
		G	7	± 2 kPa											
		H	7	± 5 kPa											
		J	7	± 10 kPa											
⑥Power supply		1	24 V DC (10-35 V DC)												
⑦Comparator output		J	NPN open collector (35 V DC, 180 mA max.)												
		K	PNP open collector (With display: Power supply voltage, 50 mA max. Without display: Power supply voltage, 110 mA max.)												
⑧Analog output		0	Nil												
		1	4-20 mA DC												
		8	1 to 5 V DC												
⑨Communication output		A	IO-Link V1.1 COM2*1												
⑩Connector cable		0	Nil												
		D	M12 connector conversion cable (1.5 m)*2												
⑪Accessories		0	Nil												
		B	L type mounting clamp												
⑫Document		0	Nil												
		1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection												

Please specify the
differential pressure range
separately for ordering.

*1 Please contact us for communication output IO-Link V1.1 COM3.

*2 The M12 connector pin-out conforms to the IO-Link standard.

Please contact us for use with analog output.

• Specify by code "X" if there is no applicable specification.

[Caution of operation]

Please do not use this product for measurement of
corrosive gases and/or flammable gases and liquids.

The contents of the catalog are subject to change without notice.



NAGANO KEIKI

NAGANO KEIKI CO., LTD.

URL : <https://www.naganokeiki.co.jp/>

HEAD OFFICE & OVERSEAS SALES DEPT

1-30-4, HIGASHIMAGOME OHTA-KU, TOKYO, JAPAN.

PHONE : +81-3-3776-5328 FAX : +81-3-3776-5447

E-mail : overseas_sales_dept@naganokeiki.co.jp