

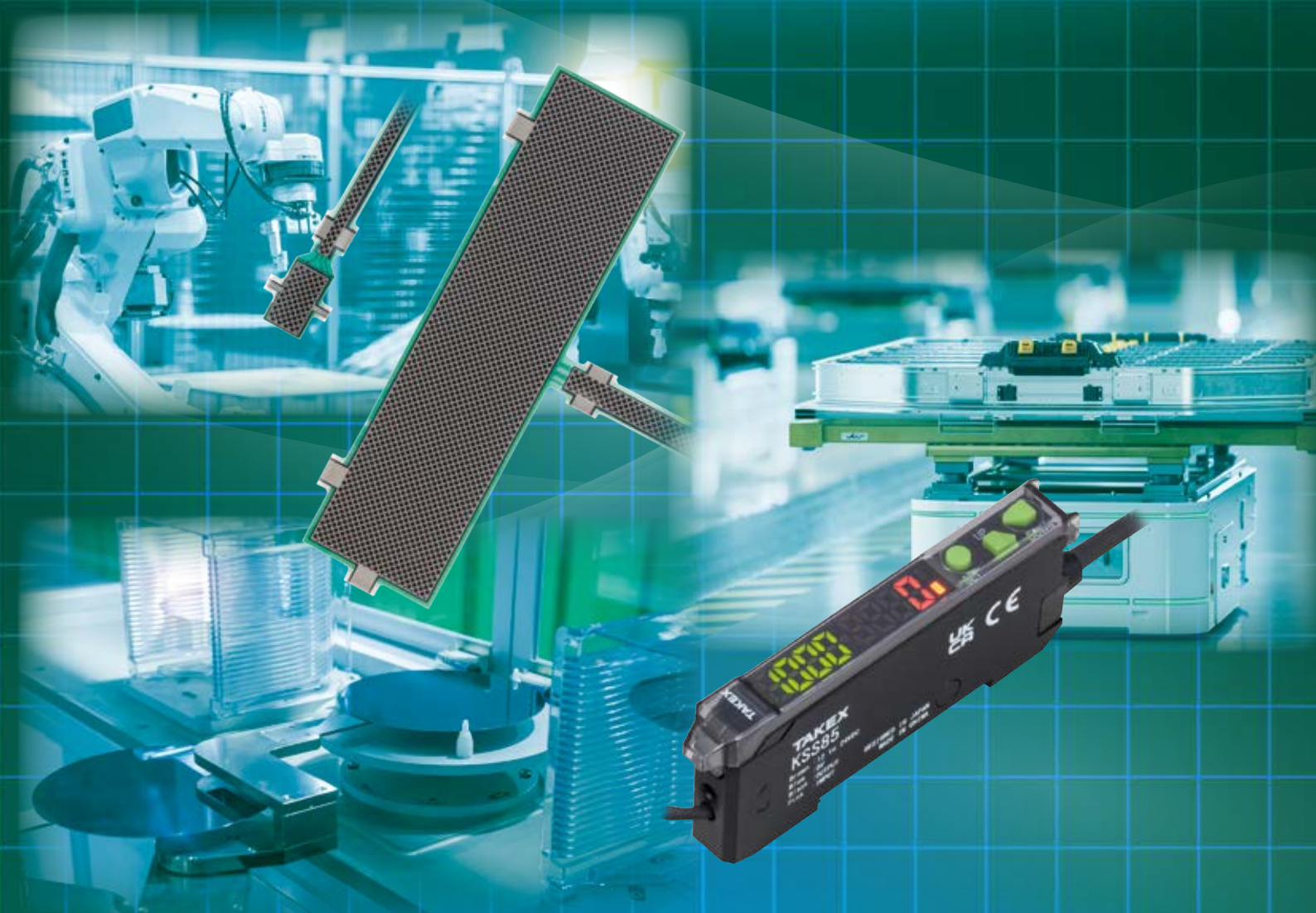
TAKEX

Force Sensitive Sheet Sensor

KSS85 Series



Just sticking sheet ensures reliable object detection



Patent pending

Sensitive sheet with versatile installation location
Contact method unaffected by any color, material or shape
Stable detection regardless of ambient lights or other sensors

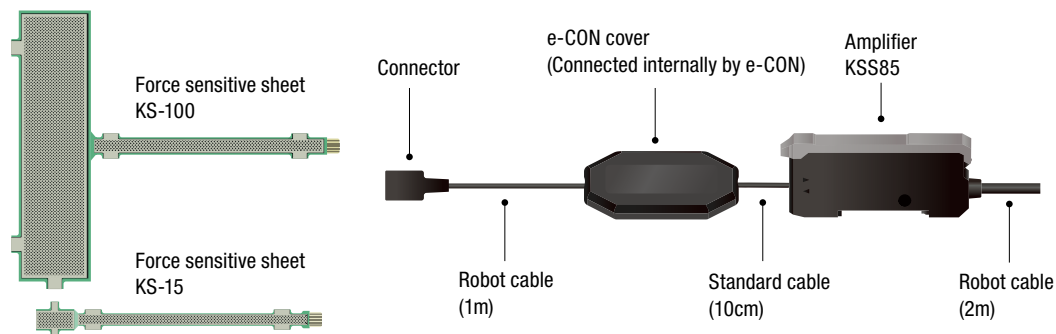
“Just Sticking”

Best suited for gripping object
and presence check

A versatile sensor for any object and installation location

System Configuration

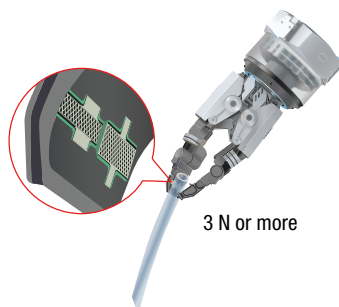
Be sure to connect the force sensitive sheet into the connector.
Two types of force sensitive sheets available : Small and Area types
Robot cables are applied for movable part.



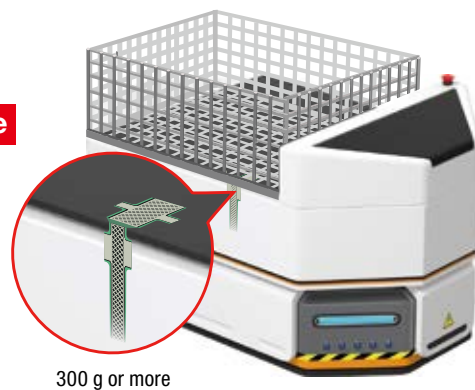
Contact method

Adopted force sensitive sheet sensing load or pressure
Regardless of any color, material, or shape of detecting object
Load (pressure) : 3 N (300 g) or more

Gripping

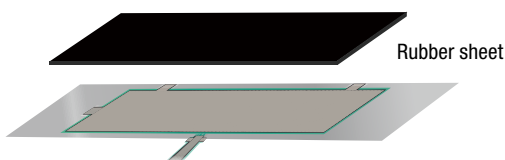


Presence



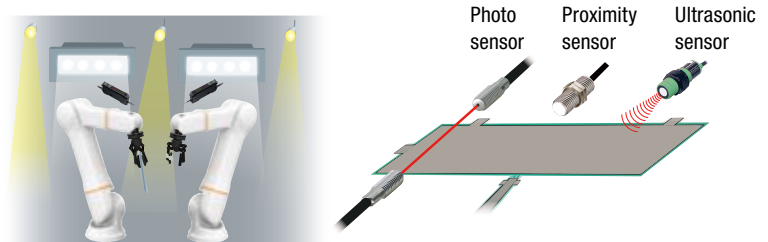
Simple installation “Just Sticking”

Easier and simpler installation than
any other sensors
*Use rubber sheet on force sensitive sheet
*Recommended rubber sheet : 1 mm thickness,
CR in material, and A60 shore hardness



Useable with other sensors

Stable detection regardless of ambient lights or other sensors



Unaffected by kinds of lightings



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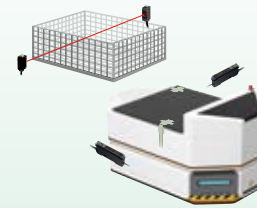
Gripping confirmation by robot hands

Preventing interference with other photo sensors



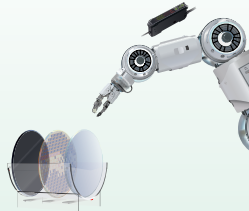
Detecting presence of mesh pallet

Reliably detect even object like net without malfunction



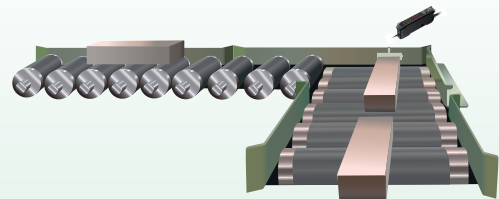
Object detection with various transparency

Contact method ensuring detection unaffected by any color



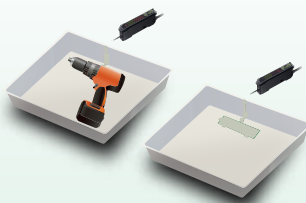
Arrival confirmation of lumber

Just sticking on wall surface



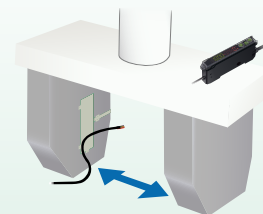
Detection of tool in tray

Flexible installation to suit tool in tray



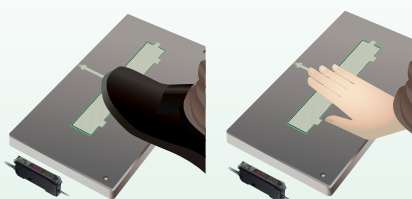
Confirmation of gripping cable or tube

Detect object reliably passing through unfixed position



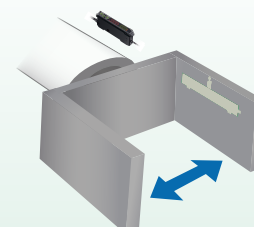
Start switch

Sheet shape allowing installation in any location



Gripping check of various robot hands

Useable at kinds of robot hands with Area sheet type



SPECIFICATION

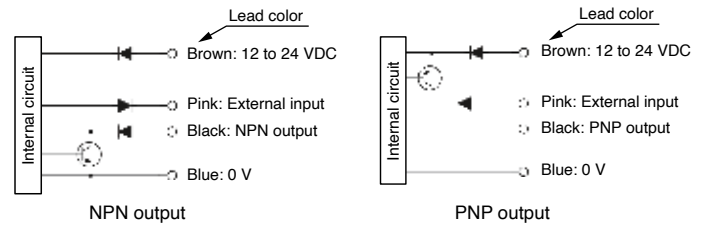
Model	Force sensitive sheet sensor (amplifier: KSS85, force sensitive sheet: KS-100, KS-15)
Power supply	12 to 24 VDC, Ripple: 10% or less
Current consumption	at 24 V DC Normal mode: 600 mW (current consumption 25 mA or less) ECO mode: 480 mW (current consumption 20 mA or less)
Detection sensitivity	300 g = approx. 3 N (reference value)
Output mode	NPN/PNP switchable NPN open collector output Load current: 100 mA (30 V DC) or less, residual voltage: 2 V or less PNP open collector output Load current: 100 mA (30 V DC) or less, residual voltage: 2 V or less
Operation mode	NO (Normally Open) / NC (Normally Closed) switchable
Timer	ON delay / OFF delay / ON/OFF delay / One shot / Timer off Delay timer: 1 ms to 9999 ms (can be set at intervals of 1 ms)
Response time	Without load → with load: 1 ms, with load → without load: 100 ms
Indicator	Operation indicator, setting indicator, NO/NC indicator: orange LED
Display	Operation level display: 4-digit red LED, threshold indicator: 4-digit green LED
Switch	[SET/TEACHING] button: teaching / setting [UP/DOWN] button: adjust threshold value / select settings
Protection circuit	Power reverse connection / reverse output / output short circuit protection
Sensitivity setting	Maximum sensitivity teaching
Sensitivity adjustment function	Equipped (automatic adjustment / manual adjustment)
Connection method	Cord drawing type (φ4.2 mm o.d.) 0.2 mm ² x 4-core, 2 m (robot cable)
Weight	KSS85 (amplifier): approx. 100 g, KS-100: approx. 4 g, KS-15: approx. 1 g
Accessory	Instruction manual

*Note 1 million operations min. Press 10 seconds at 300 g and release 10 seconds
1,000 operations min. Press 10 seconds at 1 t and release 10 seconds

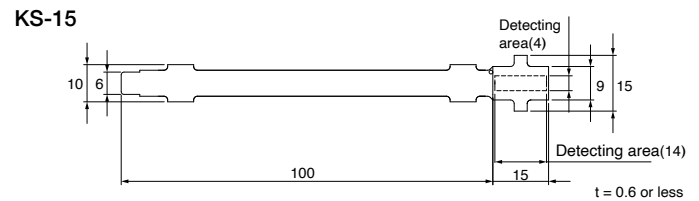
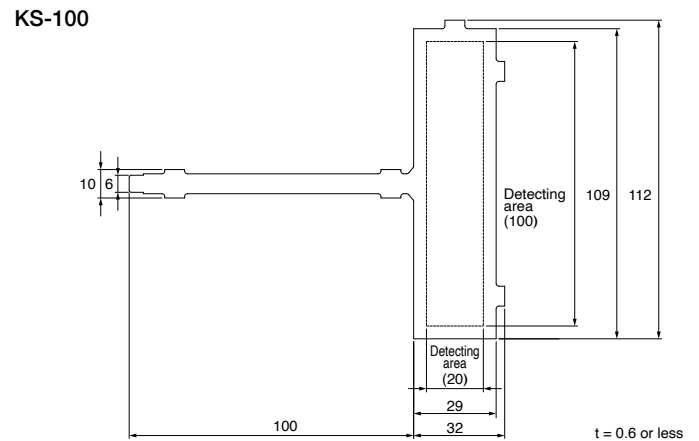
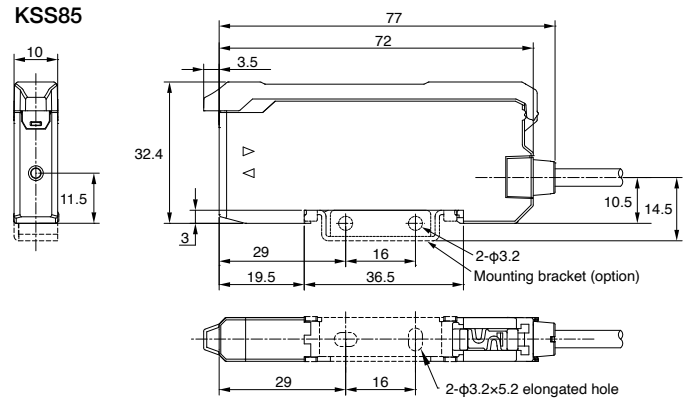
ENVIRONMENTAL SPECIFICATION

Ambient temperature	Amplifier: -25 to +55°C, pressure-sensitive sheet: 0 to +55°C (non-freezing)
Ambient humidity	35 to 85% RH (non-condensing)
Protection structure	IP40
Vibration	10 to 55 Hz, double amplitude 1.5 mm, X, Y, Z directions, 2 hours each
Shock	500 m/s ² , 3 times each in X, Y and Z directions
Dielectric withstand voltage	500 VAC for 1 min
Insulation resistance	At least 20MΩ with 500 VDC Megger

CONNECTION



DIMENSIONS (in mm)



CAUTION

- This product is designed for industrial applications to detect a various kinds of objects. It has no function to prevent disasters, accidents, death or injuries.
- TAKEX will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.
- This product cannot be used as safety equipment.
- This product is designed and manufactured for industrial use. It cannot be used where there is a requirement for a high degree of reliability or considerable care or attention to safety.
- Read this instruction manual carefully and use the product properly according to it.
- This instruction manual including the specifications and dimensions may be subject to change without notice.



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