

# NC2 non-contact broken tool detection system

## NC2 laser based non-contact broken tool detection system

Broken tool detection anywhere along the beam



### System components

- **NC2 broken tool detection system**  
The NC2 is a compact 2 axis non-contact broken tool detection system ( $\pm X$  or  $\pm Y$  and  $\pm Z$ ) which is hard-wired to the machine controller.
- **PSU3 power supply**  
Used when 12 V - 24 V supply is not available from the machine.

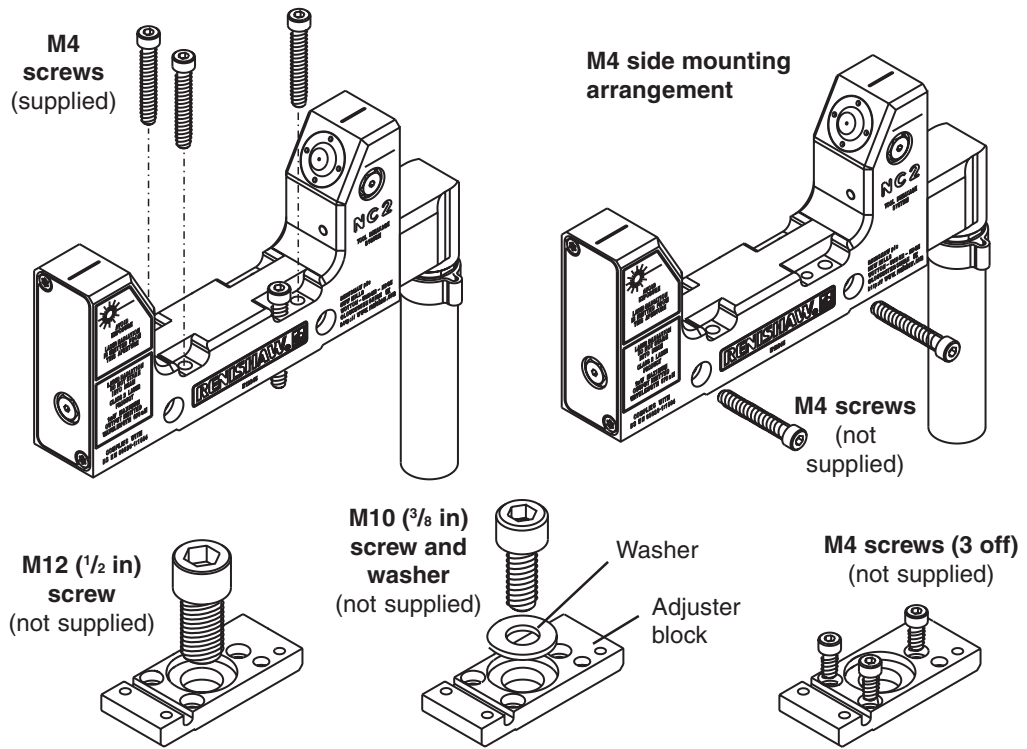
### System features

- Compact design 135 mm x 26 mm x 77 mm.
- Detection of broken tools as small as  $\text{Ø}0.15$  mm, for tools that are solid at the centre, e.g. drills, taps etc.
- Sealed to IPX8 and designed for machine tool environment.
- Proven reliability, even in a coolant-soaked environment.
- Very short cycle time
- Broken tool detection anywhere along the beam.
- Proven MicroHole™ technology - no moving parts.
- Single conduit exit from product - electrical and pneumatic cables enter via single conduit.

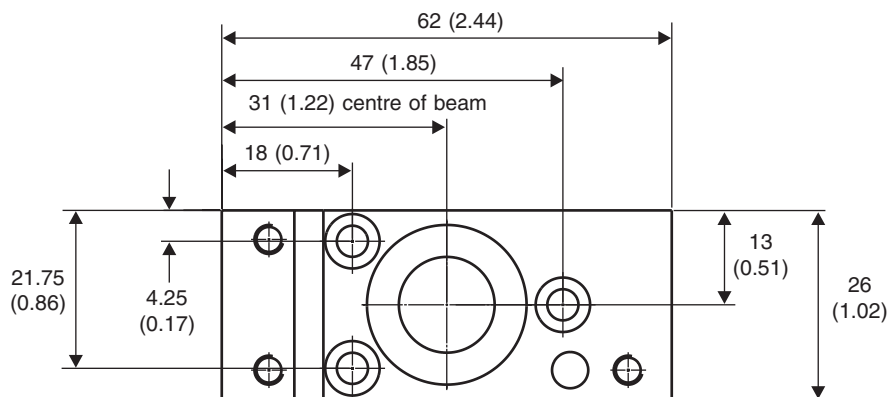
## Data sheet

NC2 non-contact broken tool detection system

## Mounting

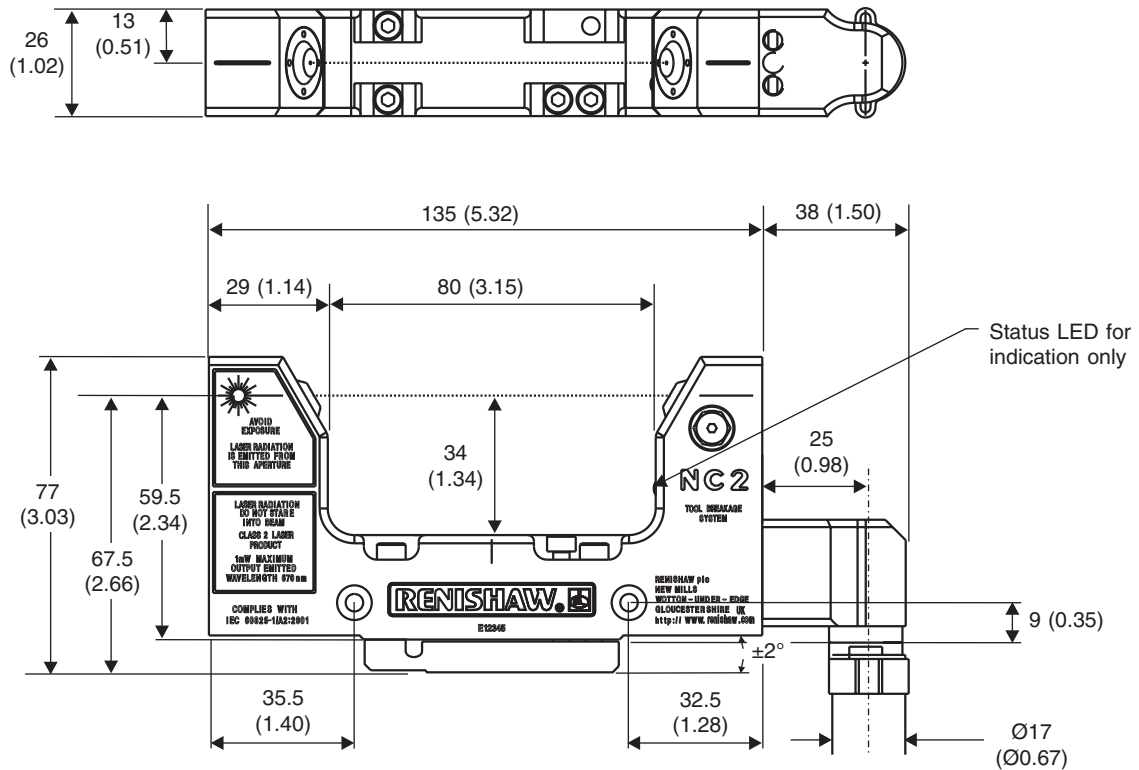


## Mounting dimensions



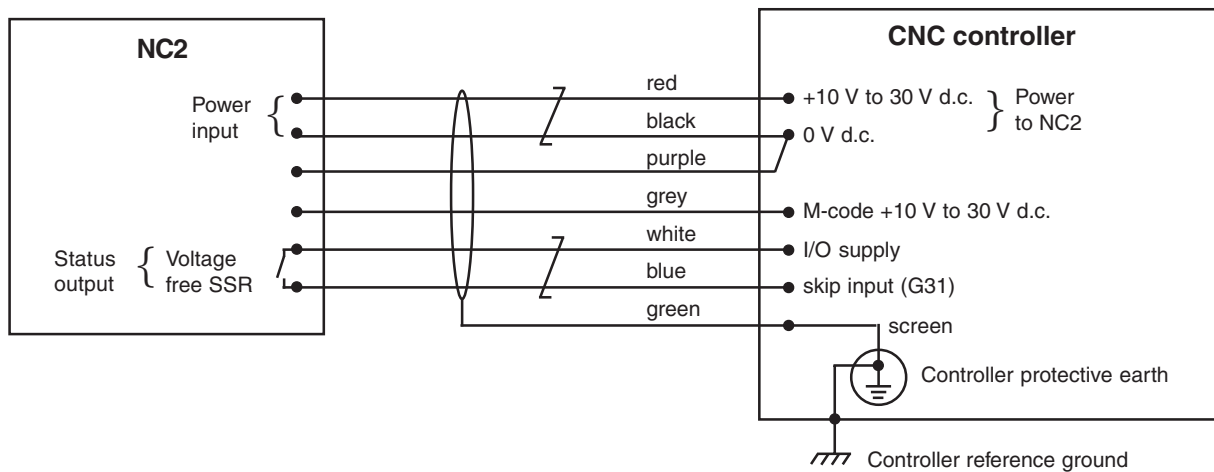
Dimensions  
in mm (in)

## Technical data



Dimensions  
in mm (in)

## NC2 connections



**NOTE:** Connect the screen to the machine controller protective earth (also referred to as 'PE', 'starpoint' or 'Earth plate').

## Specification

Output (SSR) protection	Resettable fuses, by removing power and fault condition
Application	High speed non-contact tool breakage detection for tools with solid centre
Laser type	Visible red Conforms to American (21 CFR 1040.10) and International (IEC 60825-1:1993 + A1:1997 + A2:2001) laser safety standards
Laser beam alignment	Adjuster pack - supplied, options available
Length	135 mm unit only, 173 mm overall including conduit adapter
Temperature limits	Operating 5 °C to 50 °C Storage -10 °C to 70 °C
Amplification adjustment	Factory pre-set
Moisture protection class	IPX8
Tool diameter for breakage detection	Ø0.15 mm to Ø80 mm
Electrical connection	Hard-wired
Power supply requirement	10 V to 30 V, 35 mA max.
Output signals	Solid state relay - Normally open Max. current 50 mA, max. voltage ±50 V
Air protection system	Ø3 mm air pipe, 1.5 bar (21.75 psi) min., 6 bar (87 psi) max., 2 bar (29 psi) recommended. ISO 8573-1: Class 5 particulates and moisture free to the air regulator unit
MicroHole™ size	0.5 mm
Power-up time	< 0.5 seconds
Laser diode life	> 3 years
Switch on/off cycles	> 1 million



Laser radiation  
Do not stare into beam  
1 mW maximum output  
emitted wavelength 670 nm  
Class 2 laser product

## Parts list - Please quote the part number when ordering equipment

Type	Part number	Description
NC2 kit	A-5132-1000	NC2, adjuster pack, air assembly kit, conduit, tool kit, laser warning sign and installation guide
NC2 unit	A-5132-1500	NC2, laser warning sign and installation guide
Air assembly kit	A-4179-1600	Air regulator/filter, Ø3 mm to Ø4 mm air fitting, Ø4 mm x 25 m air pipe and Ø3 mm x 5 m air pipe
Air filter service kit	P-FI01-S002	Service kit for air regulator, parts for both filter bowls
Angled adjuster block	A-4179-1501	45 degree mounting bracket
PSU3	A-2019-0018	PSU3 power supply unit (see data sheet H-2000-2200)
De luxe air filter	P-FI01-0008	Air regulator with 'blocked filter indication' and auto drain

**For worldwide contact details, please visit our main website at**  
[www.renishaw.com/contact](http://www.renishaw.com/contact)