



Description

The Series BNS16 coded-magnet sensors are designed for use as a safety interlock on movable machine guards. Each sensor set consists of a multiple reed switch unit and a coded-magnet actuator. The sensor outputs will only change state in the presence of their matched magnetic field array.

Both switch and magnet assembly are sealed to IP67 (submersible) standards. The unit features the same mounting dimensions as our popular Series AZ16 keyed safety interlock switches ... providing an attractive alternative in applications characterized by alignment problems and/or harsh environments.

Operation

The reed switch assembly is typically mounted to a stationary portion of a guard structure, with the coded-magnet assembly mounted to the movable element of the machine guard. When the guard is closed, and the matched magnetic field aligns with the reed switch unit, the switches will close. When the guard is open, or the required magnetic-field array is not properly aligned with the reed switch assembly, the sensor output will remain "off."

Typical Applications



The sealed, compact BNS16 is ideal for use on movable machine guards in hostile environments or where space is limited. Typical applications include food processing equipment, chemical processing equipment, woodworking machinery, packaging machinery, and articulating robot arm rest position sensing.

Features & Benefits

- **Sealed for submersibility** ... assures long-term reliability in the most hostile environments.
- **Tamper-resistant** ... cannot be bypassed with simple magnets.
- **Satisfies EN954 Category 4** ... when used with appropriate Series AES safety controller.
- **Shock and vibration tolerant** ... designed to withstand mechanical abuse.
- **Rugged, corrosion-resistant housing** ... tolerates most industrial environments.
- **Long-life** ... no mechanical wear due to non-contact design
- **Same mounting as Series AZ16** ... ideal alternative in wet, dirty environments.

AVAILABLE STANDARD MODELS (BNS16 actuator sold separately)

Part Number	Actuator Plane
BNS16 - 12ZD	Front cover
BNS16 - 12ZU	Back
BNS16 - 12ZV	Top
BNS16 - 12ZR	Right
BNS16 - 12ZL	Left
BNS16 - 12ZLR	Dual actuation - both Left and Right (2) BPS16 actuators required
BPS16	Coded-magnet actuator

Actuating Planes



Important Note: Series BNS coded-magnet sensors are for use in safety applications only when used with a SCHMERSAL Series AES safety controller. (Please see selection chart on Page 159.) Use with any other safety controller may damage sensor and/or void warranty.



USE WITH ANY OTHER SAFETY CONTROLLER MAY DAMAGE SENSOR AND/OR VOID WARRANTY.

BNS16 TECHNICAL DATA

MECHANICAL SPECIFICATIONS

Housing	Fiberglass reinforced thermoplastic
Switching Distance "S" *	"On": 8mm (0.315") "Off": 18mm (0.700")
Maximum Switching Frequency	5H (in combination with Series AES safety controller)
Degree of Protection	IP67 per IEC 60529
Operating Temperature	-25°C to +70°C (-13°F to +158°F)
Operating Principle	Magnetic
Shock Resistance	30g/11ms
Vibration Resistance	10 to 55 Hz, amplitude 1mm
Conformity to Standards	EN 60347-5-3/PDF-M CE

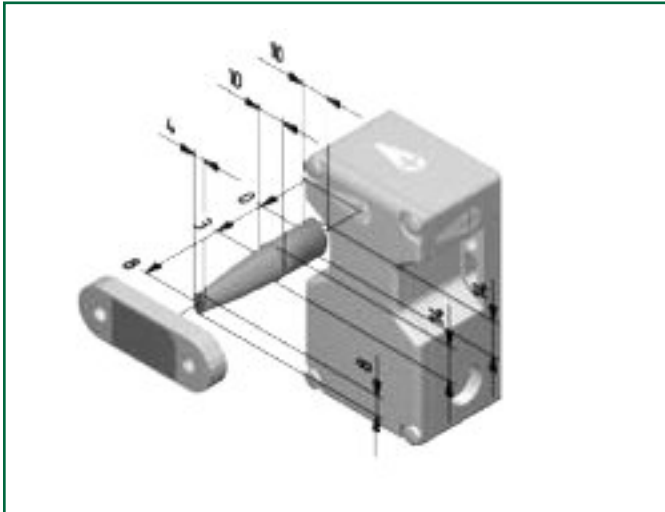
*When no ferromagnetic material is present in vicinity of the sensor or actuator.

ELECTRICAL SPECIFICATIONS

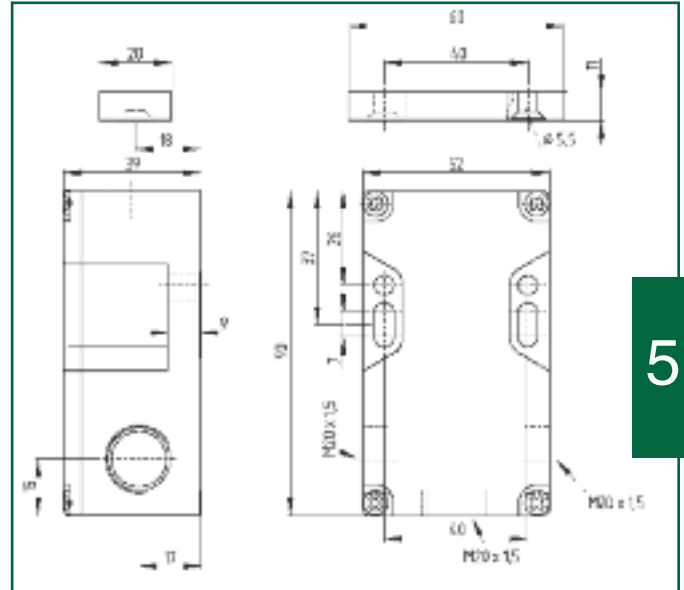
Maximum Contact Rating*	100VAC/DC
Maximum Continuous Current Rating	0.4A
Maximum Switching Capacity (Power Rating)	10VA
Type Connection	3 removable cable entries (M20x1.5) give access to screw terminals with self-lifting clamps for up to 13AWG (2.5mm ²) flexible stranded wire.

*Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.

AXIAL TOLERANCE



DIMENSIONS



WIRING DETAILS

1 NO S13 → S14
2 NC S21 → S22
S31 → S32

Contacts shown with gate closed