

ENGLISH

Magnetic NAMUR proximity sensor / cylinder sensor
according to EN 60 947-5-6
Operating instruction

Safety Instructions

- The NAMUR models of the magnetic proximity sensors / cylinder sensors are intrinsically safe electric equipment in accordance with the NAMUR standard EN 60 947-5-6, which can be operated on isolating units with ex-conformity certification. They are suited for use in the EX group from zone 1 (according to EN 60079-0 and EN 60079-11).
- Ambient operating temperature T_a = -25 °C to +70 °C.
- Temperature class T6
- Enclosure rating IP 67
- Read the operating instructions before starting operation.
- Connection, assembly, and commissioning only by competent technicians.
- No safety component in accordance with EU machine guidelines.

Proper Use

Magnetic NAMUR proximity sensors / cylinder sensors according to EN 60 947-5-6 are used for detection of magnetic fields in explosion-endangered areas.

Maximum permitted performance data of the sensor

| | |
|-------------------------------|-------------------------|
| Power supply | U _i = 16 V |
| Short-circuit current | I _i = 30 mA |
| Power | P _i = 100 mW |
| Effective internal inductance | L _i ≤ 35 µH |
| Effective internal capacity | C _i ≤ 15 nF |

Commissioning

The following must be observed when connecting the sensor to a voltage source:

- The maximum performance data (U_i, I_i, P_i, L_i, C_i) of the isolating unit
 - The connection diagram of the sensor
 - Do not connect or disconnect the cable or plug while the power is on
- NAMUR sensors are to be considered as passive equipment and consequently do not require any further reverse voltage dividers.

Maintenance

SICK magnetic proximity sensors / cylinder sensors are maintenance free. We recommend checking the plug connections and other connections at regular intervals.

1

| Wire color | Contact | Pin assignment |
|------------|---------|----------------|
| brn | brown | 1 |
| blu | blue | 4 |
| | | 3 |
| | | 2 |

2

| Wire color | Contact | Pin assignment |
|------------|---------|----------------|
| brn | brown | 1 |
| wht | white | 2 |
| | | 3 |
| | | 4 |
| | | 5 |

| Type | Part no. | Type |
|-------------------|----------|---|
| MM12-90A-N-ZQD | 1046762 | Cable with M9 male connector, 2-pin, knurled nuts, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Male connector, M12, 4-pin |
| MM12-60A-N-VW0 | 1028394 | Cable, 2-wire, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Male connector, M12, 4-pin |
| MM12-90A-N-ZUD | 1046761 | Cable with M9 male connector, 2-pin, knurled nuts, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Cable with M9 male connector, 2-pin, knurled nuts, 2 m, PUR |
| MM12-60A-N-ZW0 | 7900286 | Cable, 2-wire, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Male connector, M12, 4-pin |
| MM18-70A-N-ZW0 | 7900288 | Cable, 2-wire, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Male connector, M12, 4-pin |
| MZR2-03V-N-AW0 | 7901321 | Cable, 2-wire, 2 m, PVC |
| MZZ1-03V-N-AW0 | 7901323 | Cable, 2-wire, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Male connector, M12, 4-pin |



8008842.YSF9 0316 COMAT

Magnetischer NAMUR-Näherungssensor / Zylindersensor
Magnetic NAMUR proximity sensor / cylinder sensor

Ex II 2G Ex ib IIC T6 Gb
TÜV 99 ATEX 1398

| | |
|---|---|
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| Austria Phone +43 (0)22 36 62 28 8 0 | New Zealand Phone +64 9 415 0459 |
| Belgium/Luxembourg Phone +32 (0)2 466 55 66 | Norway Phone +47 67 81 50 00 |
| Brazil Phone +55 11 3215-4900 | Poland Phone +48 22 837 40 50 |
| Canada Phone +1 905 771 14 44 | Romania Phone +40 356 171 120 |
| Czech Republic Phone +420 2 57 91 18 50 | Russia Phone +7 495-775-05-30 |
| China Phone +86 4000 121 000 | Singapore Phone +65 6744 3732 |
| Denmark Phone +45 45 82 64 00 | Slovakia Phone +421 482 901201 |
| Finland Phone +358-9-2515 800 | Slovenia Phone +386 (0)1-47 69 990 |
| France Phone +33 1 64 62 35 00 | South Africa Phone +27 11 472 3733 |
| Germany Phone +49 211 5301.301 | South Korea Phone +82 2 786 6321 |
| Great Britain Phone +44 (0)1727 831121 | Spain Phone +34 93 480 31 00 |
| Hong Kong Phone +852 2153 6300 | Sweden Phone +46 10 110 10 00 |
| Hungary Phone +36 1 371 2680 | Switzerland Phone +41 41 619 29 39 |
| India Phone +91-22-4033 8333 | Taiwan Phone +886 2 2375-6288 |
| Israel Phone +972-4-6881000 | Thailand Phone +66 2645 0009 |
| Italy Phone +39 02 27 43 41 | Turkey Phone +90 (216) 528 50 00 |
| Japan Phone +81 (0)3 5309 2112 | United Arab Emirates Phone +971 (0) 4 98 65 878 |
| Malaysia Phone +603 808070425 | Vietnam Phone +84 8 62920204 |

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Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com

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その他の営業所は www.sick.com よりご確認ください · 予告なしに変更されることがあります · 記載されている製品機能および技術データは保証を明示するものではありません。

DEUTSCH

Magnetischer NAMUR-Näherungssensor / Zylindersensor
nach EN 60 947-5-6
Betriebsanleitung

Sicherheitshinweise

- Bei den NAMUR-Ausführungen der magnetischen Näherungssensoren / Zylindersensoren handelt es sich um eigensichere elektrische Betriebsmittel gemäß der NAMUR-Norm EN 60 947-5-6, die an Trennschaltverstärkern mit Ex-Konformitätsbescheinigung betrieben werden dürfen. Sie sind für den Einsatz in der EX-Gruppe II, ab Zone 1 (nach EN 60079-0 und EN 60079-11) geeignet.
- Umgebungstemperatur T_a = -25 °C ... +70 °C.
- Temperaturklasse T6
- Schutzart IP 67
- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Montage, Anschluss und Inbetriebnahme nur durch Fachpersonal.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.

Bestimmungsgemäße Verwendung

Magnetische NAMUR-Näherungssensoren / Zylindersensoren nach EN 60 947-5-6 werden zum Erfassen von magnetischen Feldern in explosionsgefährdeten Bereichen eingesetzt.

Maximal zulässige Leistungsdaten des Sensors

| | |
|------------------------------|-------------------------|
| Versorgungsspannung | U _i = 16 V |
| Kurzschlussstrom | I _i = 30 mA |
| Leistung | P _i = 100 mW |
| Wirksame innere Induktivität | L _i ≤ 35 µH |
| Wirksame innere Kapazität | C _i ≤ 15 nF |

Inbetriebnahme

Beim Anschluss des Sensors an eine Spannungsquelle müssen folgende Punkte berücksichtigt werden:

- Die maximalen Leistungsdaten (U_i, I_i, P_i, L_i, C_i) des Trennschaltverstärkers
 - Das Anschlussdiagramm des Sensors
 - Leitung bzw. Stecker nicht unter Spannung verbinden oder trennen
- NAMUR-Sensoren sind als passive Geräte zu betrachten und benötigen deshalb keine weiteren Schutzbeschaltungen.

Wartung

Magnetische Näherungssensoren / Zylindersensoren von SICK sind wartungsfrei. Wir empfehlen, in regelmäßigen Abständen die Steckverbindungen und Anschlüsse zu überprüfen.

1

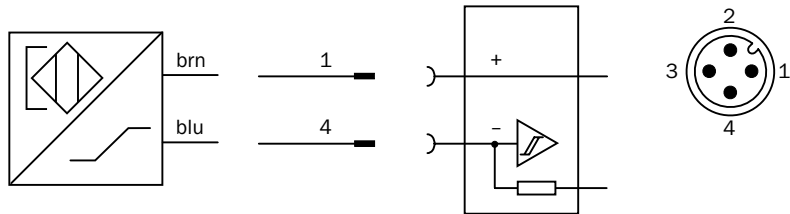
| Aderfarbe | Kontakt | Belegung |
|-----------|---------|----------|
| brn | braun | 1 |
| blu | blau | 4 |
| | | 3 |
| | | 2 |

2

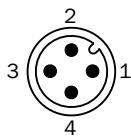
| Adernfarbe | Kontakt | Belegung |
|------------|---------|----------|
| brn | braun | 1 |
| wht | weiß | 2 |
| | | 3 |
| | | 4 |
| | | 5 |

| Typ | Bestell-Nr. | Ausführung |
|-------------------|-------------|--|
| MM12-90A-N-ZQD | 1046762 | Leitung mit Stecker M9, 2-pin, Rändelverschraubung, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Stecker M12, 4-pin |
| MM12-60A-N-VW0 | 1028394 | Leitung, 2-adrig, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Stecker M12, 4-pin |
| MM12-90A-N-ZUD | 1046761 | Leitung mit Stecker M9, 2-pin, Rändelverschraubung, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Leitung mit Stecker M9, 2-pin, Rändelverschraubung, 2 m, PUR |
| MM12-60A-N-ZW0 | 7900286 | Leitung, 2-adrig, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Stecker M12, 4-pin |
| MM18-70A-N-ZW0 | 7900288 | Leitung, 2-adrig, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Stecker M12, 4-pin |
| MZR2-03V-N-AW0 | 7901321 | Leitung, 2-adrig, 2 m, PVC |
| MZZ1-03V-N-AW0 | 7901323 | Leitung, 2-adrig, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Stecker M12, 4-pin |

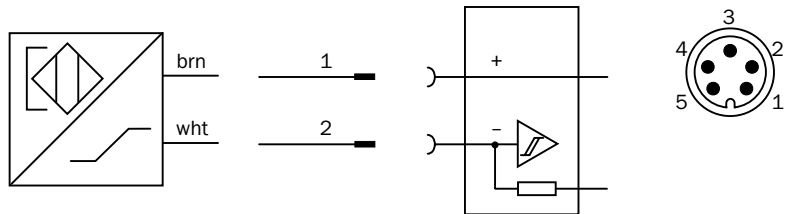
1 Connection diagram / Anschlusschema



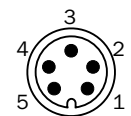
M12



2 Connection diagram / Anschlusschema



M9



EC Declaration of conformity

The undersigned, representing the following manufacturer

SICK AG
Erwin-Sick-Strasse 1
79183 Waldkirch
Germany

herewith declares, that the products listed above are in conformity with the provisions of the following EC directives (including all applicable amendments), and that the standards and/or technical specifications referenced below have been applied.

Following inspection result has been achieved for the listed devices:

Ex II 2G Ex ib IIC T6 Gb

The performance of a type examination belonging to the above-mentioned product family with the regulations from the EC-directive 94/9/EC (ATEX) has been certified by:

Address of notified body: TÜV NORD CERT GmbH / Langemarckstraße 20
D – 45141 Essen
0044
EC-type-examination-No.: TÜV 99 ATEX 1398

Production certified by: TÜV NORD CERT GmbH / Langemarckstraße 20
Address of notified body: D – 45141 Essen
0044
EC-type-examination-No.: TÜV 02 ATEX 1845 Q

| Directives | Title or short description | Issued |
|--------------------------------|---|-----------|
| Official Journal of the EU L86 | | |
| Directive 2014/30/EU | EMC Directive – electromagnetic compatibility | 2014 - 02 |
| Directive 2014/34/EU | Equipment and protective systems intended for use in potentially explosive atmosphere | 2014 - 02 |
| Standards | Title or short description | Issued |
| EN 60947 - 5 - 2 | Low voltage switchgear and controlgear - part 5-2: Control circuit devices and switching elements – proximity switches | 2007 - 12 |
| EN 60947 - 5 - 2 / A1 | Low voltage switchgear and controlgear - part 5-2: Control circuit devices and switching elements – proximity switches (amendment) | 2012 - 11 |
| EN 60947 - 5 - 6 | Low voltage switchgear and controlgear - part 5-6: Control circuit devices and switching elements – DC interface for proximity sensors and switching amplifiers (NAMUR) | 2000 - 01 |
| EN 60079 - 0 | Explosive atmospheres - part 0: Equipment - General requirements | 2012 - 08 |
| EN 60079 - 0 / A11 (amendment) | Explosive atmospheres - part 0: Equipment - General requirements (amendment) | 2013 - 11 |
| EN 60079 - 11 | Explosive atmospheres - part 11: Equipment protection by intrinsic safety „i“ | 2012 - 01 |

Date: 2016-15-03

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| FRANÇAIS |
|---|
| |
| Captur de proximité / Capteur de vérin magnétiques NAMUR selon EN 60 947-5-6 <div>Instructions de Service</div> |

Conseils de sécurité

- Les versions NAMUR des capteurs de proximité / capteurs de vérin magnétiques constituent un matériel électrique à sécurité intrinsèque conforme à la norme NAMUR EN 60 947-5-6 qu'on peut faire fonctionner sur des amplificateurs-sectionneurs munis d'un certificat de conformité « antidéflagrant ». Ils conviennent à une utilisation dans le groupe EX II à partir de la Zone 1 (selon EN 60079-0 et EN 60079-11).
- Température ambiante T_a = −25 °C à +70 °C.
- Classe de température T6
- Type de protection IP 67
- Lire les Instructions de Service avant la mise en marche.
- Installation, racordement et réglage ne doivent être effectués que par du personnel qualifié.
- N'est pas un composant de sécurité au sens de la directive européenne concernant les machines.

Utilisation correcte

Les capteurs de proximité / capteurs de vérin magnétiques NAMUR selon EN 60 947-5-6 s'utilisent pour la détection des champs magnétiques dans les atmosphères explosibles.

Performances maximales admissibles du capteur

| | |
|--------------------------------|-------------------------|
| Tension d'alimentation | U _i = 16 V |
| Courant de court-circuit | I _i = 30 mA |
| Puissance | P _i = 100 mW |
| Inductance intérieure efficace | L _i ≤ 35 µH |
| Capacité intérieure efficace | C _i ≤ 15 nF |

Mise en service

Lors du racordement du capteur à une source de tension, il faut tenir compte des points suivants :

- Les performances maximales (U_i, I_i, P_i, L_i, C_i) de l'amplificateur-sectionneur
- Le schéma de racordement du capteur
- Ne pas raccorder ou débrancher les câbles ou les fiches tant qu'ils sont encore sous tension

Les capteurs NAMUR sont à considérer comme des appareils passifs qui ne nécessitent donc aucun autre câblage de protection.

Maintenance

Les capteurs de proximité / capteurs de vérin magnétiques SICK ne nécessitent aucun entretien. Nous recommandons de contrôler à intervalles réguliers les raccordements et les connections à fiche et à prise.

| Couleur du fil | Contact | Affectation |
|----------------|---------|-------------|
| brn | brun | 1 L+ |
| blu | bleu | 4 M |
| | | 3 Libre |
| | | 2 Libre |

| Couleur du fil | Contact | Affectation |
|----------------|---------|-------------|
| brn | marron | 1 L+ |
| wht | blanc | 2 M |
| | | 3 Libre |
| | | 4 Libre |
| | | 5 Libre |

| Type | Référence | Versjon |
|-------------------|-----------|---|
| MM12-90A-N-ZQD | 1046762 | Câble avec connecteur mâle, M9, 2 pôles, avec bague moletée, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Connecteur mâle M12, 4 pôles |
| MM12-60A-N-VWO | 1028394 | Câble, 2 fils, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Connecteur mâle M12, 4 pôles |
| MM12-90A-N-ZUD | 1046761 | Câble avec connecteur mâle, M9, 2 pôles, avec bague moletée, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Câble avec connecteur mâle, M9, 2 pôles, avec bague moletée, 2 m, PUR |
| MM12-60A-N-ZWO | 7900286 | Câble, 2 fils, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Connecteur mâle M12, 4 pôles |
| MM18-70A-N-ZWO | 7900288 | Câble, 2 fils, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Connecteur mâle M12, 4 pôles |
| MZR2-03V-N-AWO | 7901321 | Câble, 2 fils, 2 m, PVC |
| MZZ1-03V-N-AWO | 7901323 | Câble, 2 fils, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Connecteur mâle M12, 4 pôles |

| PORTUGUÊS |
|---|
| |
| Sensor magnético de aproximação / sensor cilíndrico NAMUR de acordo com EN 60 947-5-6 <div>Instruções de operação</div> |

Instruções de segurança

- Os modelos NAMUR de sensores magnéticos de aproximação / sensores cilíndricos são equipamentos elétricos intrinsecamente seguros de acordo com a norma NAMUR EN 60 947-5-6, que podem ser operados em amplificadores de chaves seccionadoras com certificado de conformidade EX. Eles são apropriados para utilização no grupo EX a partir da zona 1 (de acordo com EN 60079-0 e EN 60079-11).
- Temperatura ambiente T_a = −25 °C … +70 °C.
- Classe de temperatura T6
- Tipo de proteção IP 67
- Antes do comissionamento dev ler as instruções de operação.
- Conexões, montagem e ajuste devem ser executados exclusivamente por pessoal devidamente qualificado.
- Não se trata de elemento de segurança segundo a Diretiva Máquinas da União Européa.

Utilização devida

Sensores magnéticos de aproximação / sensores cilíndricos NAMUR de acordo com EN 60 947-5-6 são utilizados para detectar campos magnéticos em áreas expostas ao perigo de explosão.

Desempenho máximo permitido do sensor

| | |
|----------------------------|-------------------------|
| Tensão de alimentação | U _i = 16 V |
| Corrente de curto-circuito | I _i = 30 mA |
| Potência | P _i = 100 mW |
| Indutância interna eficaz | L _i ≤ 35 µH |
| Capacidade interna eficaz | C _i ≤ 15 nF |

Comissionamento

Observar o seguinte quando se conecta o sensor a uma fonte de tensão:

- O desempenho máximo do amplificador (U_i, I_i, P_i, L_i, C_i) de chave seccionadora
- O diagrama de conexões do sensor
- Não conectar nem desconectar o cabo ou o conector sob tensão

Sensores NAMUR deverão ser considerados como equipamentos passivos e por consequência não requerem quaisquer outros circuitos de proteção.

Manutenção

Sensores magnéticos de aproximação / sensores cilíndricos SICK são isentos de manutenção. Recomendamos o controle periódico dos conectores de ficha e dos terminais.

| 1 | | |
|------------|---------|---------|
| Cor do fio | Contato | Pinout |
| brn | marrom | 1 L+ |
| blu | azul | 4 M |
| | | 3 Livre |
| | | 2 Livre |

| 2 | | |
|------------|---------|---------|
| Cor do fio | Contato | Pinout |
| brn | marrom | 1 L+ |
| wht | branco | 2 M |
| | | 3 Livre |
| | | 4 Livre |
| | | 5 Livre |

| Tipo | N.º encomenda | Modelo |
|-------------------|---------------|--|
| MM12-90A-N-ZQD | 1046762 | Cabo com conector macho M9, 2 pinos, aparafusamento serrilhado, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Conector macho M12, 4 pinos |
| MM12-60A-N-VWO | 1028394 | Cabo, 2 fios, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Conector macho M12, 4 pinos |
| MM12-90A-N-ZUD | 1046761 | Cabo com conector macho M9, 2 pinos, aparafusamento serrilhado, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Cabo com conector macho M9, 2 pinos, aparafusamento serrilhado, 2 m, PUR |
| MM12-60A-N-ZWO | 7900286 | Cabo, 2 fios, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Conector macho M12, 4 pinos |
| MM18-70A-N-ZWO | 7900288 | Cabo, 2 fios, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Conector macho M12, 4 pinos |
| MZR2-03V-N-AWO | 7901321 | Cabo, 2 fios, 2 m, PVC |
| MZZ1-03V-N-AWO | 7901323 | Cabo, 2 fios, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Conector macho M12, 4 pinos |

| ITALIANO |
|--|
| |
| Sensore magnetici di prossimità NAMUR a norma EN 60 947-5-6 <div>Instruzioni per l'uso</div> |

Avvertimenti di sicurezza

- I sensori magnetici di prossimità NAMUR sono dispositivi elettrici a sicurezza intrinseca conformi alla norma NAMUR EN 60 947-5-6, per i quali è consentito l'impiego con amplificatori separatori dotati di certificazione per utilizzo in aree classificate Ex. Questi sensori sono indicati per l'uso nel gruppo Ex II a partire dalla zona 1 (a norma EN 60079-0 e EN 60079-11).
- Temperatura ambiente T_a = −25 °C … +70 °C
- Classe di temperatura T6
- Tipo di protezione IP 67
- Leggere prima della messa in esercizio.
- Allacciamento, montaggio e regolazione solo da parte di personale qualificato.
- Non componente di sicurezza secondo la Direttiva macchine EN.

Impiego conforme allo scopo

I sensori magnetici di prossimità NAMUR a norma EN 60 947-5-6 vengono impiegati per il rilevamento dei campi magnetici in aree soggette al rischio di esplosioni.

Valori massimi ammessi del sensore

| | |
|-----------------------------|-------------------------|
| Tensione di alimentazione | U _i = 16 V |
| Corrente di cortocircuito | I _i = 30 mA |
| Potenza | P _i = 100 mW |
| Induttanza interna efficace | L _i ≤ 35 µH |
| Capacità interna efficace | C _i ≤ 15 nF |

Messa in esercizio

Per il collegamento del sensore all'alimentazione elettrica attenersi a quanto segue:

- Valori massimi ammessi (U_i, I_i, P_i, L_i, C_i) dell'amplificatore
 - Schema di collegamento del sensore
 - Non collegare né scollegare conduttori o spine in tensione
- I sensori NAMUR sono da considerarsi apparecchi passivi e non necessitano quindi di ulteriori protezioni.

Manutenzione

I sensori magnetici di prossimità Beta non richiedono manutenzione. Consigliamo di controllare i connettoni e gli altri collegamenti ad intervalli regolari.

| 1 | | |
|-------------|----------|--------------|
| Colore filo | Contatto | Assegnazione |
| brn | marrone | 1 L+ |
| blu | blu | 4 M |
| | | 3 Libero |
| | | 2 Libero |

| 2 | | |
|-------------|----------|--------------|
| Colore filo | Contatto | Assegnazione |
| brn | bruno | 1 L+ |
| wht | bianco | 2 M |
| | | 3 Libero |
| | | 4 Libero |
| | | 5 Libero |

| Tipo | Codice art. | Versione |
|-------------------|-------------|---|
| MM12-90A-N-ZQD | 1046762 | Cavo con connettore maschio M9, 2 pin, vite a testa zigrinata, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Connettore maschio M12, 4 pin |
| MM12-60A-N-VWO | 1028394 | Cavo , 2 fili, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Connettore maschio M12, 4 pin |
| MM12-90A-N-ZUD | 1046761 | Cavo con connettore maschio M9, 2 pin, vite a testa zigrinata, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Cavo con connettore maschio M9, 2 pin, vite a testa zigrinata, 2 m, PUR |
| MM12-60A-N-ZWO | 7900286 | Cavo , 2 fili, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Connettore maschio M12, 4 pin |
| MM18-70A-N-ZWO | 7900288 | Cavo, 2 fili, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Connettore maschio M12, 4 pin |
| MZR2-03V-N-AWO | 7901321 | Cavo, 2 fili, 2 m, PVC |
| MZZ1-03V-N-AWO | 7901323 | Cavo, 2 fili, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Connettore maschio M12, 4 pin |

| ESPAÑOL |
|---|
| |
| Sensor de proximidad / sensor para cilindro NAMUR magnético según EN 60 947-5-6 <div>Manual de servicio</div> |

Observaciones sobre seguridad

- Los modelos NAMUR de los sensores de proximidad / sensores para cilindro magnéticos son unos equipos eléctricos intrínsecamente seguros de acuerdo con la norma NAMUR EN 60 947-5-6, que pueden ser operados en amplificadores separadores con certificación de conformidad Ex. Estos son adecuados para la utilización en el grupo EX II, a partir de la zona 1 (según EN 60079-0 y EN 60079-11).
- Temperatura ambiente T_a = −25 °C … +70 °C.
- Clase de temperatura T6
- Tipo de protección IP 67
- Leer el Manual de Servicio antes de la puesta en marcha.
- Conexión, montaje y ajuste solo por personal técnico.
- No es elemento constructivo de seguridad según la Directiva UE sobre maquinaria.

Empleo para usos debidos

Los sensores de proximidad / sensores para cilindro NAMUR magnéticos según EN 60 947-5-6 se utilizan para la detección de campos magnéticos en áreas con riesgo de explosión.

Datos de rendimiento máximos admisibles del sensor

| | |
|-------------------------------|-------------------------|
| Tensión de alimentación | U _i = 16 V |
| Corriente de cortocircuito | I _i = 30 mA |
| Potencia | P _i = 100 mW |
| Inductividad interna efectiva | L _i ≤ 35 µH |
| Capacidad interna efectiva | C _i ≤ 15 nF |

Puesta en marcha

Al conectar el sensor a una fuente de tensión deberán tenerse en cuenta los siguientes puntos:

- Los datos de rendimiento máximos (U_i, I_i, P_i, L_i, C_i) del amplificador separador
- El diagrama de conexión del sensor
- No intente enchufar o desenchufar el cable o el conector cuando haya tensión

Los sensores NAMUR deben considerarse como aparatos pasivos y por este motivo no requieren ningún circuito de protección adicional.

Mantenimiento

Los sensores de proximidad / sensores para cilindro magnéticos de SICK son libres de mantenimiento. Recomendamos comprobar a intervalos regulares las conexiones por enchufe y otras conexiones.

| 1 | | |
|----------------|----------|------------|
| Color del hilo | Contacto | Asignación |
| brn | marrón | 1 L+ |
| blu | azul | 4 M |
| | | 3 Libre |
| | | 2 Libre |

| 2 | | |
|----------------|----------|------------|
| Color del hilo | Contacto | Asignación |
| brn | marrón | 1 L+ |
| wht | blanco | 2 M |
| | | 3 Libre |
| | | 4 Libre |
| | | 5 Libre |

| Tipo | N.º de pedido | Versión |
|-------------------|---------------|---|
| MM12-90A-N-ZQD | 1046762 | Cable con conector macho M9 de 2 pines, moleteado, 0,5 m, PUR |
| MM18-00A-N-ZCO | 1026614 | Conector macho M12 de 4 pines |
| MM12-60A-N-VWO | 1028394 | Cable de 2 hilos, 2 m, PVC |
| MM12-60A-N-VCO | 1028395 | Conector macho M12 de 4 pines |
| MM12-90A-N-ZUD | 1046761 | Cable con conector macho M9 de 2 pines, moleteado, 0,8 m, PUR |
| MM12-90A-N-ZUXS02 | 1060742 | Cable con conector macho M9 de 2 pines, moleteado, 2 m, PUR |
| MM12-60A-N-ZWO | 7900286 | Cable de 2 hilos, 2 m, PVC |
| MM12-60A-N-ZCO | 7900287 | Conector macho M12 de 4 pines |
| MM18-70A-N-ZWO | 7900288 | Cable de 2 hilos, 2 m, PVC |
| MM18-70A-N-ZCO | 7900289 | Conector macho M12 de 4 pines |
| MZR2-03V-N-AWO | 7901321 | Cable de 2 hilos, 2 m, PVC |
| MZZ1-03V-N-AWO | 7901323 | Cable de 2 hilos, 2 m, PVC |
| MZZ1-03V-N-ACO | 7901324 | Conector macho M12 de 4 pines |

| 中文 |
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| |
| 磁性 NAMUR 接近传感器 / 气缸传感器 符合 EN 60 947-5-6 标准 <div>操作规程</div> |

安全须知

- NAMUR 规格的磁性接近传感器/气缸传感器为符合 EN 60 947-5-6 标准的 NAMUR 本安型电气装备，可在具有防爆合格证书的隔离开关大器上运行。其适合在区域 1 以上的防爆组别 II 内使用（符合 EN 60079-0 和 EN 60079-11 标准）。
- 工作环境-温度 T_a = -25 °C … +70 °C.
- 温度级别 T6
- 保护种类 IP 67
- 调试前请阅读操作规程。
- 仅允许由专业人员进行接线、安装和设置。
- 本设备非欧盟机械指令中定义的安全部件。

正确使用须知

符合 EN 60 947-5-6 标准的磁性 NAMUR 接近传感器 / 气缸传感器，用于检测爆炸危险区域中的磁场。

| | |
|--------------------|-------------------------|
| 传感器最大允许的性能参数 | |
| 电源电压U _i | U _i = 16 V |
| 短路电流 | I _i = 30 mA |
| 性能 | P _i = 100 mW |
| 内部有效电感 | L _i ≤ 35 µH |
| 内部有效电容 | C _i ≤ 15 nF |

调试

传感器连接电源时必须考虑下列事项：

- 隔离开关放大器最大性能参数 (U_i, I_i, P_i, L_i, C_i)
- 传感器连接图
- 通电时不得脱开导线或插头

NAMUR 传感器可视为被动设备，无需其他保护电路。

保养

SICK 磁性接近传感器 / 气缸传感器免维护。我们建议，定期检查插头连接和接口。

| 1 | | |
|------|------|------|
| 导线颜色 | 联系方式 | 引脚分配 |
| brn | 棕色 | 1 L+ |
| blu | 蓝色 | 4 M |
| | | 3 空闲 |
| | | 2 空闲 |

| 2 | | |
|------|------|------|
| 导线颜色 | 联系方式 | 引脚分配 |
| brn | 棕色 | 1 L+ |
| wht | 白色 | 2 M |
| | | 3 空闲 |
| | | 4 空闲 |
| | | 5 空闲 |

| 型号 | 订购编号 | 规格 |
|-------------------|---------|------------------------------------|
| MM12-90A-N-ZQD | 1046762 | 电缆，配有 M9 插头，2 针 滚花螺栓，0.5 米长，PUR 电缆 |
| MM18-00A-N-ZCO | 1026614 | 插头，M12，4 针 |
| MM12-60A-N-VWO | 1028394 | 电缆，2 芯，2 米长，聚氯乙烯材质 |
| MM12-60A-N-VCO | 1028395 | 插头，M12，4 针 |
| MM12-90A-N-ZUD | 1046761 | 电缆，配有 M9 插头，2 针 滚花螺栓，0.8 米长，PUR 电缆 |
| MM12-90A-N-ZUXS02 | 1060742 | 电缆，配有 M9 插头，2 针 滚花螺栓，2 米长，PUR 电缆 |
| MM12-60A-N-ZWO | 7900286 | 电缆，2 芯，2 米长，聚氯乙烯材质 |
| MM12-60A-N-ZCO | 7900287 | 插头，M12，4 针 |
| MM18-70A-N-ZWO | 7900288 | 电缆，2 芯，2 米长，聚氯乙烯材质 |
| MM18-70A-N-ZCO | 7900289 | 插头，M12，4 针 |
| MZR2-03V-N-AWO | 7901321 | 电缆，2 芯，2 米长，聚氯乙烯材质 |
| MZZ1-03V-N-AWO | 7901323 | 电缆，2 芯，2 米长，聚氯乙烯材质 |
| MZZ1-03V-N-ACO | 7901324 | 插头，M12，4 针 |

| 日本語 |
|---|
| |
| NAMUR 磁気型近接センサ / シリンダ専用センサ EN 60 947-5-6 に準拠 <div>取扱説明書</div> |

安全上の注意事項

- 磁気型近接センサ / シリンダ専用センサの NAMUR モデルは、旧通合証明書を持つ絶縁増幅器での動作が許可されている NAMUR 規格 EN 60 947-5-6 に準拠した本質防爆タイプの電気機器です。これは旧グループ II、ゾーン 1 (EN 60079-0 および EN 60079-11 に準拠) 以上での使用に適しています。
- 使用周囲温度 T_a = −25 °C … +70 °C.
- 温度クラス T6
- 保護等級 IP 67
- 使用を開始する前に取扱説明書をお読みください。
- 接続、取付けおよび設定できるのは専門技術者に限ります。
- 本製品は EU 機械指令の要件を満たす安全コンポーネントではありません。

使用目的

EN 60 947-5-6 に準拠した NAMUR 磁気型近接センサ / シリンダ専用センサは、危険区域における磁場の検出に使用されます。

| | |
|--------------|--|
| センサの最大許可能データ | |
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