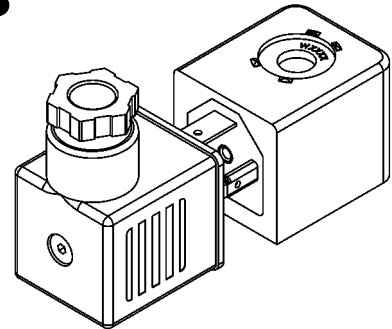


Ex ec tc Solenoid Coil Type 0558



Certificate no. nm 23.0002 X



Operating Instructions

Dear Customer!

To ensure the function and for your own safety, please read these operating instructions attentively before you begin with the installation. If you still have questions, please contact nass magnet GmbH.

Tel ++49 (0) 511 6746-0
Fax ++49 (0) 511 6746-222



www.nassmagnet.com

e-mail vertrieb@nassmagnet.de

General terms and conditions

- We are not liable for any damage caused by non-observation of this operating instructions as well as in case of non-authorised modification regarding this equipment. Our general terms and conditions apply.
- The nass magnet solenoid coil is designed for operation with nass magnet valve systems only; please consider the corresponding power levels.
- The product complies with the standards stated in the certificate and the attached EU Declaration of Conformity. The normative explosion protection marking is as follows:
Gas: Ex ec IIC T5, T4 Gc
Dust: Ex tc IIIC T95°C, T105°C Dc

The equipment protection level (EPL) Gc permits use in Zone 2 and EPL Dc in Zone 22.

- Be sure to follow these Operating Instructions and the regulations applicable at the place of use. If in doubt, seek qualified advice!
- The applicable regulations on electrical safety and electrical systems in potentially explosive atmospheres must be observed for installation, inspection and maintenance, especially IEC 60079-14, -17 and -19.

Specific conditions of use for explosion protection

- The equipment is marked with the symbol “X” and thus refers to the special conditions of use that must be adhered to as follows (as well listed in the certificate):

„X“: 1) Installation only in areas with low level of mechanical danger (IEC 60079-0, Resistance to impact).

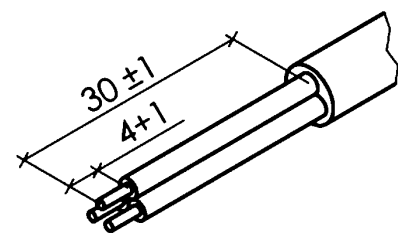
„X“: 2) The place of installation must be protected from light (IEC 60079-0, Resistance to UV light).

„X“: 3) The installation shall provide for a strain relief for the cable in close proximity of the connector to ensure that strain and torsion are not transmitted to the connector.

- „X“: 4) Only armature guides made of metal may be used.
- „X“: 5) Distances to other heat sources must be considered. Distance values to devices of the same type are specified in the Technical Data section.
- „X“: 6) The connector may only be unplugged or opened when electrically de-energized.
- „X“: 7) The equipment is designed for ambient and media temperatures as specified in the Technical Data section and the technical datasheet.
- „X“: 8) The marked degree of ingress protection (IP) is only achieved with properly installed ports. For this purpose, the associated parts supplied must be used and the prescribed tightening torques must be observed.

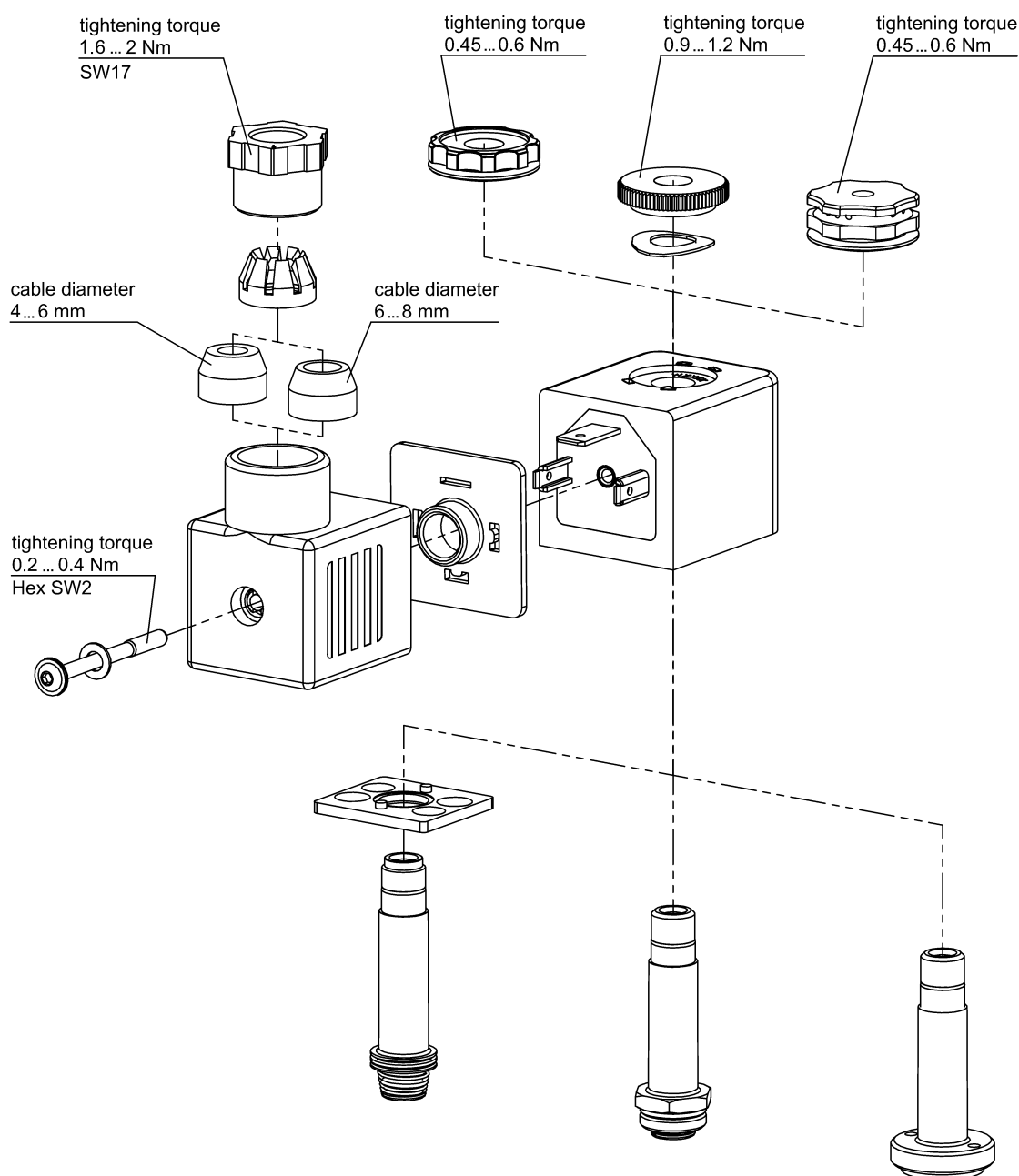
Assembly, Installation and Disassembly

- **Strictly observe the applicable precautionary measures when working on systems for and in potentially explosive atmospheres! Take suitable measures to exclude unintentional activation or inadmissible impairment during work.**
- **Caution! Make sure not to detach pipes and valves of pressurised systems.**
- Before and during installation of the valve system, make sure that there is no dirt in the piping or the valve housing and make sure not to damage O-rings and seals during assembly.
- Observe the minimum distance between the devices for some operating modes (section Technical data).
- Mounting is admissible in any position. Preferably the solenoid coil points upwards. The solenoid coil can be locked when offset by 45°.
- With plastic valve body material, the conditions according to IEC 60079-0 section 7.4 must be observed to prevent the build-up of electrostatic charges.
- You may only use the connector labelled "-0643". Make use of the provided seals and the prescribed tightening torques pursuant to the assembly scheme. Only use original parts provided by nass magnet, the certificate and the declaration of conformity is no longer applicable to modified equipment.
- Observe the rated values of the connecting cable corresponding to the respective requirements and ambient conditions at the point of wiring (see IEC 60079-14).
- The cable gland is suited for cable diameters of 4 mm to 6 mm or 6 mm to 8 mm, one gasket provided for each range. Only one gasket at a time shall be used in the gland. Directly before the connector a strain relief must be provided in order to ensure that strain and torsion are not transmitted to the connector. Prevent the cable and wires from being damaged!
- The wire clamps are rated for wire cross sections from 0.5 mm² to 1.5 mm². The tightening torque of the clamp screw is 0.2 to 0.3 Nm.
- Single-wired conductors may be used or either multi-wired or fine-wired conductors may be used if wire end sleeves are applied. The wire ends must be mounted into the screw joints properly and undamaged. When using ferrules, observe the relevant documentation regarding the correct installation, in particular the suitable conductor diameters and the required stripping length. Observe the recommended stripping lengths when using solid conductors (see Sketch). Only one conductor respectively one end sleeve may be inserted per clamp. Soldering of stranded and fine-stranded wire ends is not permitted.
- The terminal block can be offset in steps of 90° inside the connector housing such that the cable outlet direction is adjustable. No further settings are possible.

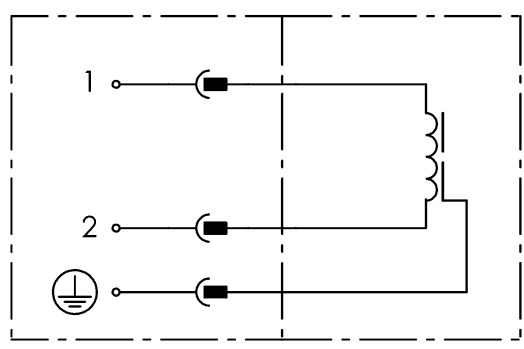


stripping lengths of single-wired conductors

Assembly scheme



circuit diagram



Marking



II 3 G

II 3 D

nm 23.0002 X

Type 0558 50 ...

Ex ec IIC T5 Gc

Ex tc IIIC T95°C Dc

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Type 0558 40 ...

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Ex ec IIC T4 Gc

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Ex tc IIIC T105°C Dc

Technical Data

Type no.	nass magnet Power Level	Nominal Voltage Supply Voltage	Rated Current	Rated Power	Block Assembly Minimum Distance at Surface Temperature	
					T5 95 °C	T4 105 °C
0558 x0/5146	3	24 V DC	87 mA	2,1 W	0 mm	0 mm
0558 x0/5147	4	24 V DC	111 mA	2,7 W	0 mm	0 mm
0558 x0/5143	3	24 V 50 Hz AC	166 mA	4,0 VA	30 mm	0 mm
		24 V 60 Hz AC	128 mA	3,1 VA	0 mm	0 mm
0558 x0/5140	3	110 V 50 Hz AC	36 mA	4,0 VA	30 mm	0 mm
		110 V 60 Hz AC	28 mA	3,1 VA	0 mm	0 mm
		120 V 60 Hz AC	33 mA	4,0 VA	30 mm	0 mm
0558 x0/6395	3	230 V 50 Hz AC	17,5 mA	4,0 VA	30 mm	0 mm
		230 V 60 Hz AC	13,5 mA	3,1 VA	0 mm	0 mm
		240 V 60 Hz AC	14,5 mA	3,5 VA	30 mm	0 mm

The minimum distance refers to the clear distance from wall to wall of the solenoid coils.

Ambient Temperature -20 °C ... +50 °C

Admissible Media Temperature -20 °C ... +50 °C

Voltage Deviation Limit +/- 10 %, max. 45 % ripple with DC voltage

Ingress Protection by Enclosure IP 65

Commissioning and Operation

- **Caution! Danger of arcing! The connector may only be disconnected or opened when it is de-energised!**
- **Caution! Danger of ignition! Solenoid coils must not be energized without mounted valve!**
- **Caution! Risk of injury! The solenoid valve can be very hot during continuous operation!**
- The solenoid coils are designed for an ambient temperature range from -20°C to +50°C and media temperatures of -20°C to +50°C.
- The operating pressure of the equipment depends on the valve system employed. The nass magnet standard valve system is suited for up to 1200 kPa (12 bars) and has no extra identification. For other demands please enquire.
- Admissible media are gases and liquids that do not impair the system and the gasket materials.
- Prevent the equipment's exterior surfaces from getting in contact with liquid or corrosive media.
- Frequent occurrence of condensate can lead to critical accumulation of water, for which the rated IP65 protection class is not sufficient. In this case, provide additional protection. Exposure to natural weather conditions is generally not permitted.
- Do not strain the system by bending or torsion.
- Ensure that the components are accessible for inspection, testing and replacement.

Maintenance and Servicing

- In principle, the solenoid and connector are maintenance-free. The valve parts are subject to load-dependent wear and should be inspected and checked at suitable intervals.
- The sealing materials (HNBR) at the connector age naturally depending on their stress. Plan inspection intervals accordingly if aggressive atmospheres or frequently high temperatures are present. Inspect both the seal on the strain relief and the flat seal to the end unit. Retighten the pressure screw and the fastening screw with the permitted torques.
- When replacing the valve parts, make sure to use original nass magnet parts. These have undergone the required pressure test in order not to impair the safety of the Ex-device.

Troubleshooting and Repair

- **Proceed with caution in the event of any malfunction! Always observe the applicable precautionary measures when working on systems in potentially explosive atmospheres!**
- **Additionally, observe the precautionary measures to be taken when working on systems that are pressurised by a compressed gas and are electrically live!**
- Damaged or defective equipment may not be repaired but must be replaced. Please order the replacement by stating the identification number on the unit, which begins with the digits "108-".



EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer:

nass magnet GmbH, Eckenerstrasse 4-6, 30179 Hannover, Germany

Product, type-number / object of the declaration:

Solenoid Coil Type 0558 40 to 0558 69 Certificate no. nm 23.0002 X

Batch numbers: starting with date of manufacture 2023-05

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/34/EU

...relating to equipment and protective systems intended for use in potentially explosive atmospheres
(recast of 26 February 2014)

2011/65/EU, with (EU) 2015/863 and (EU) 2018/741

on the restriction of the use of hazardous substances in electrical and electronic equipment
(recast of 8 June 2011, modified 31 March 2015 and 1 March 2018)

Relevant harmonised standards used and references to the specifications in relation to which conformity is declared:

EN IEC 60079-0:2018

Explosive atmospheres – Part 0: Equipment - General requirements

EN 60079-7:2015 +A1:2018

Explosive atmospheres – Part 7: Equipment protection by increased safety “e”

EN 60079-31:2014

Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

DIN VDE 0580:2011

Electromagnetic devices and components - General specifications

EN 175301-803:2006

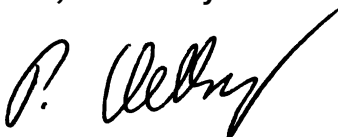
rectangular connectors - flat contacts with a thickness of 0,8 mm, undetachable locking screw

The manufacturer nass magnet GmbH has performed the conformity assessment following Directive 2014/34/EU, Article 13 (1) c), Annex VIII, Module A, and issued the certificate with ID no. **nm 23.0002 X**.

Signed for and on behalf of

nass magnet GmbH, Hannover, 05 February 2024

Patrick Oelkers
General Manager

A handwritten signature in black ink, appearing to read 'P. Oelkers', with a long horizontal stroke extending to the right.