

Produktübersicht 2019 – Komponenten
Product overview 2019 – Components



Das Unternehmen

The Company

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Die Schienle Magnettechnik + Elektronik GmbH ist ein Unternehmen der HAWE Gruppe. Seit über 40 Jahren entwickelt und produziert Schienle Antriebslösungen und Sensoren für ein breites Anwendungsspektrum.

Unsere Erzeugnisse finden sich weltweit in einer Vielzahl bekannter Produkte namhafter Hersteller aus folgenden Branchen:

- + Rohstoff/Energieträgergewinnung
- + Hydraulik
- + Pneumatik
- + Medizintechnik
- + Nahrungsmittelindustrie

In den vergangenen 15 Jahren haben wir uns zu einem international anerkannten Unternehmen für Explosionsschutzlösungen entwickelt.

Als eines der wenigen Unternehmen der Elektromagnetbranche verfügen wir über sämtliche erforderliche Zulassungen, welche es uns erlauben, explosionsgeschützte Produkte für alle Regionen weltweit zu entwickeln und zu produzieren, sowie dort zu vertreiben.

Hierbei unterliegen wir einer strengen externen Prozessüberwachung mit einer Vielzahl an Überwachungsaudits durch die unterschiedlichsten Zertifizierungspartner rund um den Globus. Eine derartige Form der Überwachung übertrifft die Anforderungen der herkömmlichen DIN ISO Norm 9001 bei weitem.

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Schienle Magnettechnik + Elektronik GmbH is a HAWE Group company. For more than 40 years, Schienle has been developing and producing drive solutions and sensors for a wide range of applications.

Our products can be found worldwide in numerous well-known products from acclaimed manufacturers in the following sectors:

- + Raw material/Energy source extraction
- + Hydraulics
- + Pneumatics
- + Medical technology
- + Foodstuffs industry

During the last 15 years, we have developed into an internationally recognised specialist in explosion protection solutions.

As one of just a few companies in the electromagnet sector, we have been awarded all the necessary approvals, which enables us to develop and produce explosion-proof products for all regions worldwide, as well as to market them in their respective territories.

We are therefore subject to strict external process monitoring with numerous monitoring audits from the widest variety of certification partners around the world. Monitoring on this scale greatly surpasses the requirements of the customary DIN ISO 9001 standard.

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Unsere Kernsegmente

Our core segments

Komponenten
Components

Hubmagnete, Sensoren,
Ventilmagnete,
Haftmagnete etc.

Linear solenoids, sensors,
valve solenoids, holding
solenoids etc.

Explosionsschutz
Explosion protection

Aktuatoren und Sensoren
für den weltweiten Einsatz

Actuators and sensors
for worldwide use

Systemlösungen
System solutions

Busgesteuerte Aktoren,
Aktor- / Sensorkombinationen

Bus-controlled actuators,
actuator/sensor combinations

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Unsere Motivation ist es, als Ihr Partner und serviceorientierter Systemlieferant für alle Aufgabenstellungen rund um Antriebs- und Sensorlösungen gemeinsam mit Ihnen erfolgreich zu sein.

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Our motivation is to share in your success as your partner and service-orientated system supplier for all requirements relating to drive and sensor-based solutions.



Unsere Prozesse Our Processes

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Qualitätsprozess

Neben der Basis-Zertifizierung nach DIN ISO 9001:2015 unterliegt Schienle folgenden internationalen Überwachungsaudits:

- + FM-Approval USA/CDN
- + ATEX
- + IECEX
- + MA Chinese Mining

Als ausgewiesener Spezialist für Explosionsschutzprodukte sind für uns höchste Anforderungen in Sachen Qualität, Zuverlässigkeit sowie Rückverfolgbarkeit üblicher Standard. Das gilt für unser komplettes Produktsortiment.

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Quality Process

As well as base certification to DIN ISO 9001:2015, Schienle is also subjected to the following international monitoring audits:

- + FM-Approval USA/CDN
- + ATEX
- + IECEX
- + MA Chinese Mining

As a proven specialist in explosion protection products, even the highest demands in respect of quality, reliability and traceability are a matter of course for us. This applies to our complete product range.

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Entwicklung

Gemeinsam mit unseren Partnern entwickeln und zertifizieren wir innovative kundenspezifische Elektromagnetlösungen. Dank jahrzehntelanger Erfahrung und standardisierten Ablaufprozessen steht Schienle für eine termingerechte Durchführung von Aufträgen jeder Größenordnung.

Development

Together with our partners, we develop and certify innovative customer-specific electromagnet solutions. Thanks to decades of experience and standardised workflows, Schienle is able to fulfil orders of any size, and on schedule.

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Fertigung

Wir bauen konsequent auf eine hohe Fertigungstiefe sowie Gleichteilbauweise. Unser Erfolgsgeheimnis lautet: bestens ausgebildete Fachkräfte, moderne Maschinen sowie straffe Prozesse. Das Resultat ist ein Höchstmaß an Effizienz und Flexibilität – für kostengünstige Premiumlösungen.

Manufacturing

We consistently manufacture with a high level of vertical integration and using a common part construction approach. The secret of our success lies in our highly qualified expert personnel, modern machinery and lean processes. The result is the maximum degree of efficiency and flexibility – for economical premium solutions.

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Montage

Bei Kleinserien kommen flexible Kanban-gelenkte Montageinseln zum Einsatz – bei größeren Serien effiziente Montagelinien.

Vor der Auslieferung durchläuft jedes unserer Erzeugnisse je nach Eignung voll- beziehungsweise teilautomatisierte Prüfstände. Im Anschluss erfolgt eine präzise Dokumentation der Prüfergebnisse.

Assembly

For small batches we use flexible assembly islands based on the kanban principle. For larger series we use efficient assembly lines.

Before delivery, every single one of our products passes through fully or partially automated test benches, as appropriate. And afterwards, the test results are precisely documented.

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Ventilmagnete für die Hydraulik

Valve solenoids for hydraulic applications



Proportionalmagnete
Proportional solenoids

10 – 17

PAGE



Zwilling-Ventilsteuerer magneten
Twin solenoids

18 – 23

PAGE



Schaltmagnete Baugröße 25 bis 60 mm
On/Off solenoids size 25 to 60 mm

24 – 26

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Betätigungssysteme
Hydraulic solenoids – tubes

27 – 30

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Elektromechanische Produkte

Electromechanical products



Hubmagnete (Einfachhub, Doppelhub, Umkehrhub)
Linear solenoids

31 – 39

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Kundenspezifische Lösungen
Special solutions

40 – 46

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Proportionalmagnete Proportional solenoids

Proportionalmagnete für Hydraulikventile – in Standard- und explosionsgeschützter Ausführung.

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Proportionalmagnete sind in der Elektrohydraulik die taktgebende Instanz – vergleichbar mit einem Dirigenten. Einerseits bestimmen sie die Dynamik, andererseits lautet die Anforderung, selbst hoher Dynamik unbeschadet standzuhalten. Deswegen müssen Proportionalmagnete robust, langlebig und zuverlässig sein.

Aufgrund langjähriger weltweiter Erfahrung im Bereich explosionsgeschützter Elektromagnete vertrauen unsere Kunden auf den besonderen „Schienle-Qualitätsstandard“ und integrieren unsere Hydraulikmagnet-Lösungen häufig in betont anspruchsvolle Anwendungen.

Durch ein breites Spektrum an standardisierten Antriebslösungen bieten wir für jede erdenkliche Anforderung das passende Produkt.

Unser Sortiment im Bereich Hydraulische Anwendungen:

- + Schaltmagnete
- + Proportionalmagnete
- + Betätigungssysteme
- + International zertifizierte Ex-Schalt- und Proportionalmagnete sowie Sensoren

Spezifische Lösungen führen wir den individuellen Wünschen und Anforderungen des Kunden entsprechend aus.

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Proportional solenoids for hydraulic valves – in standard and explosion-proof designs.

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In the field of electrohydraulics, proportional solenoids set the pace – comparable to the conductor of an orchestra. On the one hand, they determine the dynamics, but they must also be able to resist even the highest dynamics and remain undamaged. Proportional solenoids therefore need to be robust, long-lasting and reliable.

On the basis of our many years' experience in the field of explosion-proof electromagnets, our customers rely on that particular 'Schienle quality standard', and integrate our hydraulic solenoid solutions into what are often the most decidedly demanding applications.

With a wide range of standardised drive solutions, we have the appropriate product for any conceivable requirement.

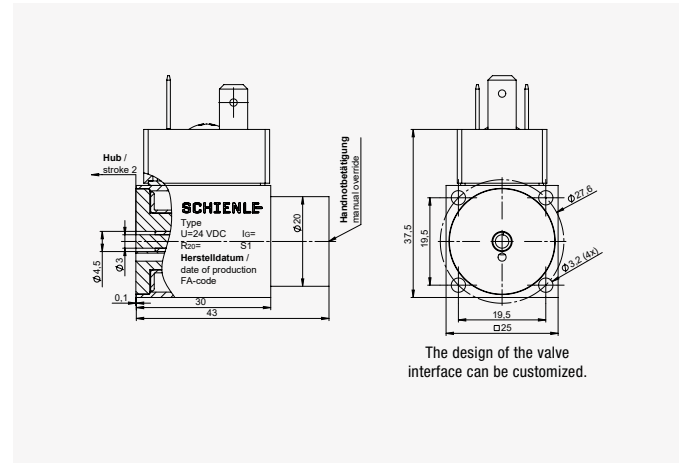
Our range in the area of hydraulic applications:

- + Switching solenoids
- + Proportional solenoids
- + Actuator systems
- + Internationally certified Ex switching and proportional solenoids, plus sensors

We produce custom solutions according to clients' individual desires and requirements.

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Proportional solenoid PDA 025x 0yy



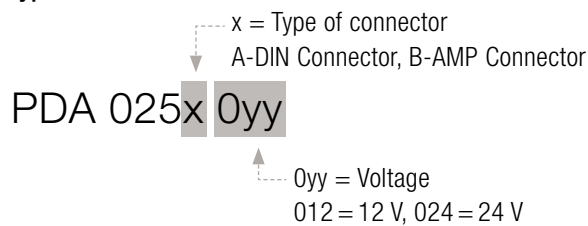
Proportional solenoid for hydraulic valves – Size 25

Square electromagnet in proven sturdy, long-lasting design. Enclosed by solid square housing, which is affixed to the valve with four screws, this pressure-resistant armature tube withstands operating pressure of 320 bar.

The armature's bearings are of high quality with low friction, and in the event of a fault it can be operated via the integrated manual override.

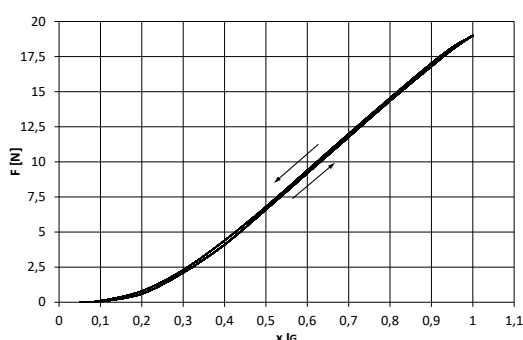
- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803
- Protection class in accordance with DIN VDE 0470, EN 60529

Type code:



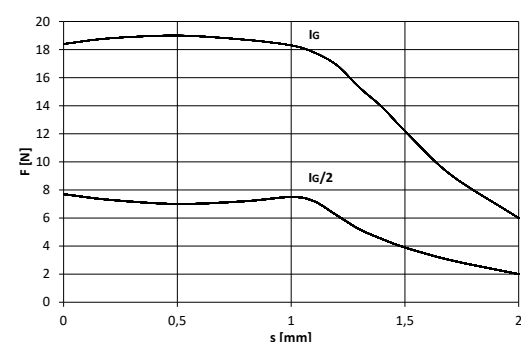
| Technical data | 24 V | 12 V |
|-------------------------------|------|------|
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 50 | 50 |
| static working pressure [bar] | 320 | 320 |
| total stroke [mm] | 2 | 2 |
| working stroke [mm] | 1 | 1 |
| force hysteresis [%] | ~5 | ~5 |
| current hysteresis [%] | ~5 | ~5 |
| nominal resistance [Ω] | 26 | 6.5 |
| nominal current [A] | 0.44 | 0.92 |
| limit current [A] | 0.44 | 0.92 |
| nominal output [W] | 5 | 5.5 |
| limit output [W] | 7.8 | 7.9 |
| armature weight [kg] | 0.01 | 0.01 |
| total weight [kg] | 0.12 | 0.12 |
| ingress protection rating | IP65 | IP65 |
| inductance [mH] | 45 | 15 |
| thermal class (coil) | F | F |

Force vs. current diagram

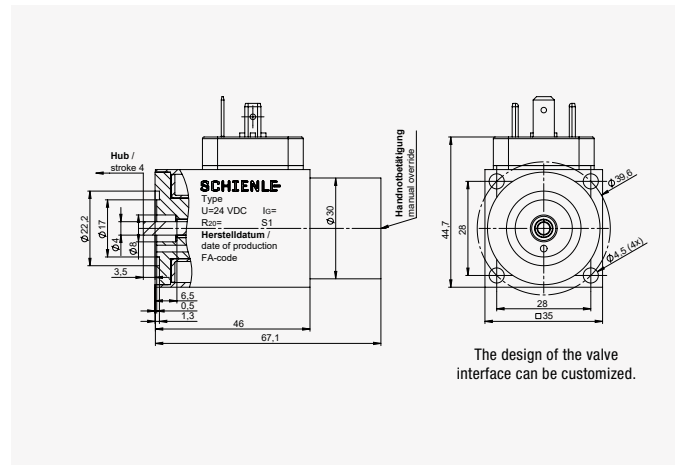


The values can deviate +/- 5 %

Force vs. stroke diagram



Proportional solenoid PDA 035x 0yy



Proportional solenoid for hydraulic valves – Size 35

Square electromagnet in proven sturdy, long-lasting design. Enclosed by solid square housing, which is affixed to the valve with four screws, this pressure-resistant armature tube withstands operating pressure of 320 bar.

The armature's bearings are of high quality with low friction, and in the event of a fault it can be operated via the integrated manual override.

- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803
- Protection class in accordance with DIN VDE 0470, EN 60529

Type code:

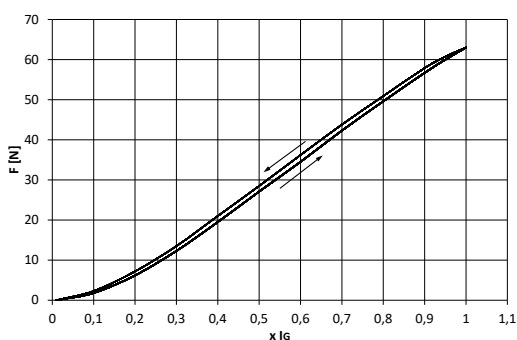
x = Type of connector
 A-DIN Connector, B-AMP Connector

PDA 035x 0yy

0yy = Voltage
 012 = 12 V, 024 = 24 V

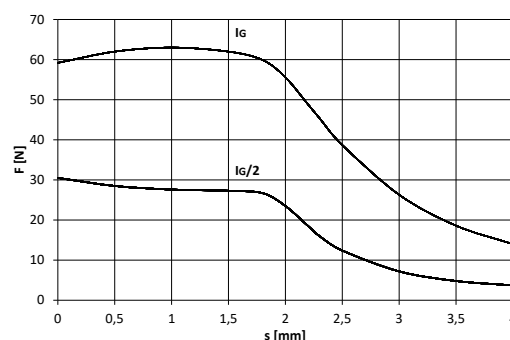
| Technical data | 24 V | 12 V |
|-------------------------------|-------|-------|
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 50 | 50 |
| static working pressure [bar] | 320 | 320 |
| total stroke [mm] | 4 | 4 |
| working stroke [mm] | 2 | 2 |
| force hysteresis [%] | ~5.5 | ~5.5 |
| current hysteresis [%] | ~5 | ~5 |
| nominal resistance [Ω] | 24 | 7 |
| nominal current [A] | 0.7 | 1.3 |
| limit current [A] | 0.7 | 1.3 |
| nominal output [W] | 11.8 | 11.8 |
| limit output [W] | 17.4 | 17.7 |
| armature weight [kg] | 0.037 | 0.037 |
| total weight [kg] | 0.47 | 0.47 |
| ingress protection rating | IP65 | IP65 |
| inductance [mH] | 72 | 21 |
| thermal class (coil) | F | F |

Force vs. current diagram

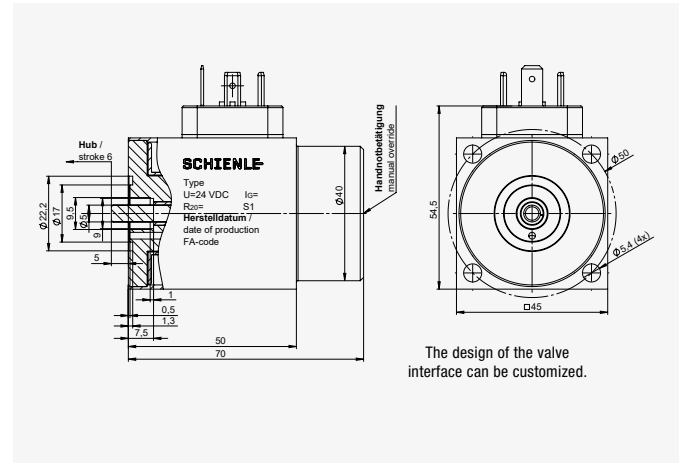
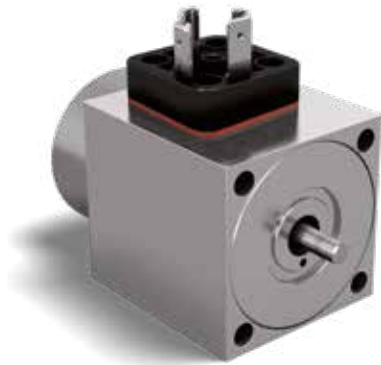


The values can deviate +/- 5%

Force vs. stroke diagram



Proportional solenoid PDA 045x 0yy



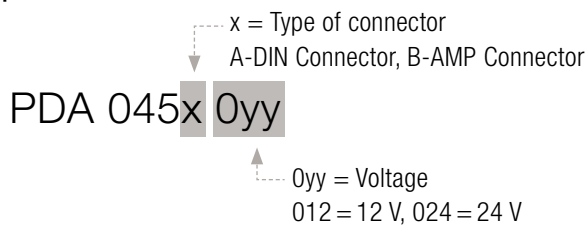
Proportional solenoid for hydraulic valves – Size 45

Square electromagnet in proven sturdy, long-lasting design. Enclosed by solid square housing, which is affixed to the valve with four screws, this pressure-resistant armature tube withstands operating pressure of 320 bar.

The armature's bearings are of high quality with low friction, and in the event of a fault it can be operated via the integrated manual override.

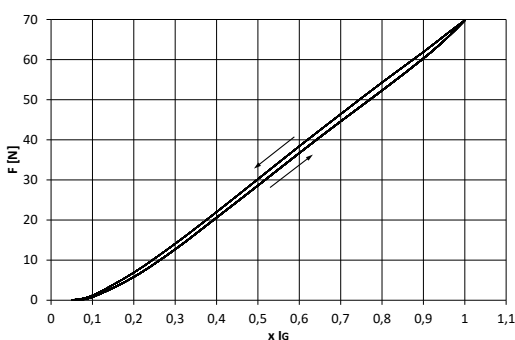
- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803
- Protection class in accordance with DIN VDE 0470, EN 60529

Type code:

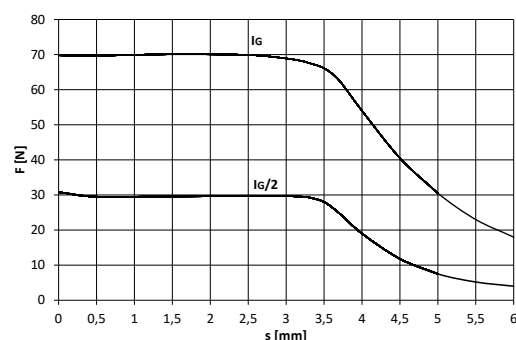


| Technical data | 24 V | 12 V |
|-------------------------------|-------|-------|
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 50 | 50 |
| static working pressure [bar] | 320 | 320 |
| total stroke [mm] | 6 | 6 |
| working stroke [mm] | 3 | 3 |
| force hysteresis [%] | ~5.5 | ~5.5 |
| current hysteresis [%] | ~5 | ~5 |
| nominal resistance [Ω] | 21.7 | 4.6 |
| nominal current [A] | 0.81 | 1.8 |
| limit current [A] | 0.81 | 1.8 |
| nominal output [W] | 14.2 | 14.9 |
| limit output [W] | 20.4 | 21.6 |
| armature weight [kg] | 0.064 | 0.064 |
| total weight [kg] | 0.83 | 0.83 |
| ingress protection rating | IP65 | IP65 |
| inductance [mH] | 87 | 20 |
| thermal class (coil) | F | F |

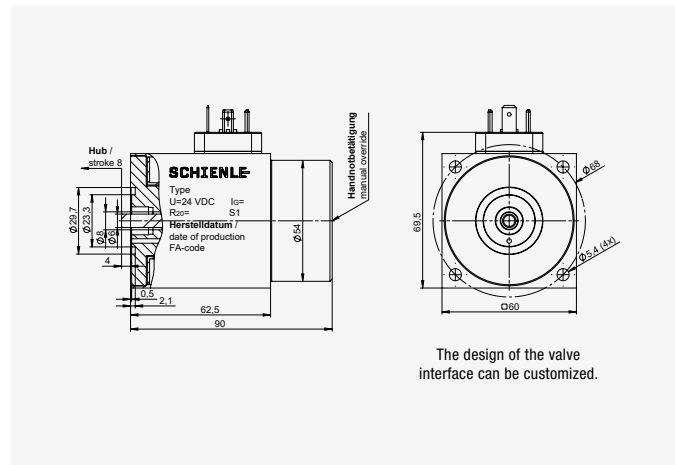
Force vs. current diagram



Force vs. stroke diagram



Proportional solenoid PDA 060x 0yy



Proportional solenoid for hydraulic valves – Size 60

Square electromagnet in proven sturdy, long-lasting design. Enclosed by solid square housing, which is affixed to the valve with four screws, this pressure-resistant armature tube withstands operating pressure of 320 bar.

The armature's bearings are of high quality with low friction, and in the event of a fault it can be operated via the integrated manual override.

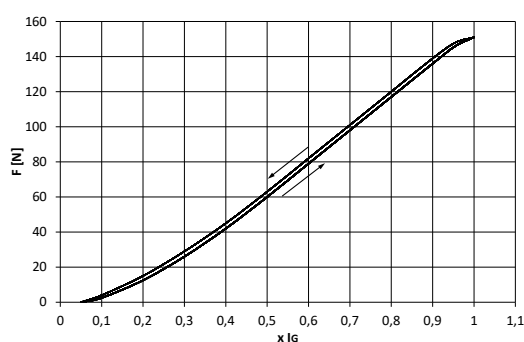
- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803
- Protection class in accordance with DIN VDE 0470, EN 60529

Type code:

x = Type of connector
 A-DIN Connector, B-AMP Connector
PDA 060x 0yy
 $0yy$ = Voltage
 012 = 12 V, 024 = 24 V

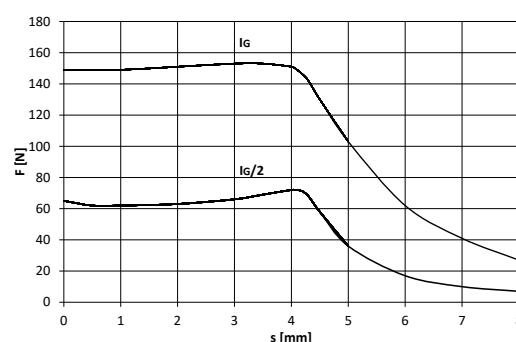
| Technical data | 24 V | 12 V |
|---------------------------------|------|------|
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 50 | 50 |
| static working pressure [bar] | 320 | 320 |
| total stroke [mm] | 8 | 8 |
| working stroke [mm] | 4 | 4 |
| force hysteresis [%] | ~6 | ~6 |
| current hysteresis [%] | ~5.5 | ~5.5 |
| nominal resistance [Ω] | 16.5 | 4.1 |
| nominal current [A] | 1.15 | 2.3 |
| limit current [A] | 1.15 | 2.3 |
| nominal output [W] | 22 | 22 |
| limit output [W] | 29.5 | 30.1 |
| armature weight [kg] | 0.12 | 0.12 |
| total weight [kg] | 1.75 | 1.75 |
| ingress protection rating | IP65 | IP65 |
| inductance [mH] | 97 | 24 |
| thermal class (coil) | F | F |

Force vs. current diagram

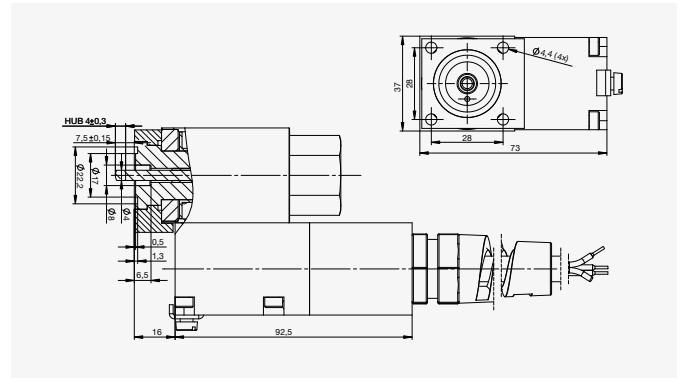


The values can deviate +/- 5%

Force vs. stroke diagram



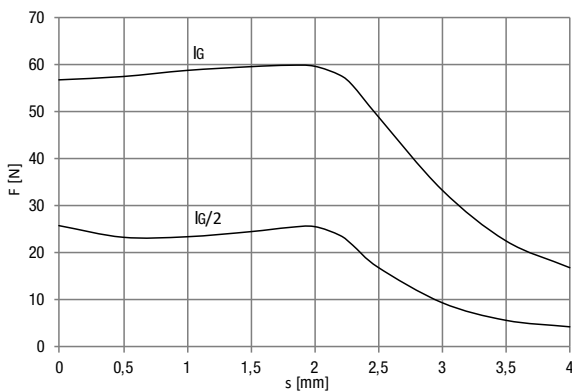
Proportional solenoid Ex 14



Proportional solenoid for hydraulic valves – Size 37

- Square electromagnet in explosion-proof design.
- Thanks to the protection class-compliant flame proof “d” and “XP” enclosure, this product can be used worldwide – USA, RUS, IECEx, ATEX approval for Division 1 and Zone 1, 21 in gas and dust atmospheres.
- Ideal for NG4 and NG6 valves.
- The solenoid tube and valve interface can be customised to a large extent.

Force vs. stroke diagram



The values can deviate +/- 5%

| Technical data | 24 V | 12 V |
|-------------------------------|--|--|
| limit current [A] | 0.67 | 1.35 |
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [°C] | 55 | 55 |
| max. medium temperature [°C] | +70 | +70 |
| ingress protection rating | IP67 | IP67 |
| thermal class (coil) | H | H |
| tube diameter [mm] | 19 | 19 |
| static working pressure [bar] | 250 | 250 |
| working stroke [mm] | 3; 2,5 (5,5); 1,8; 1,6; 2,5 (5,5) | 3; 2,5 (5,5); 1,8; 1,6; 2,5 (5,5) |
| adaptor flange | free | free |
| manual override | yes | yes |
| surface treatment | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//TO RoHS-conformed | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//TO RoHS-conformed |

| Type | Certification | Ambient temperature | Labeling |
|------|--------------------------------|---------------------|--|
| EX14 | NEC 500 (USA) | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | NEC 505 (USA) NEC 506 (USA) | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db |
| | CEC Section 18 Annex J | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | CEC Section 18 | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb |
| | ATEX | -40 °C up to +55 °C | ⊕ II 2G Ex d IIB T4 Gb ⊕ II 2D Ex tb IIIC T135 °C Db |
| | IECEx | -40 °C up to +55 °C | Ex d IIB T4 Gb Ex tb IIIC T135 °C Db |



Zwilling-Ventilsteuermagnete Twin solenoids

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Unsere proportionalen Zwillingsmagnete bestehen aus zwei unabhängig arbeitenden Ventilmagneten, die sich ein gemeinsames Gehäuse teilen. Dies spart Raum. Die Magnete sind für Drücke von 50 bis 100 bar belastbar.

Für Mobilhydraulik und Industrieanwendungen stellen wir zwischenzeitlich 112 verschiedene Zwillingsmagnettypen her. Für explosionsgefährdete Bereiche stehen 62 Varianten zur Verfügung.

Eigenschaften:

- + Standard Baugröße 25 x 39 [mm] oder 30 x 49 [mm]
- + Statische Nenndruckbelastbarkeit 50 bis 100 bar
- + Wahlweise mit und ohne Handnotbedienung
- + Spannungen von 12 bis 24 VDC
- + Leistungen von 20 bis 22 W

In unserem Programm führen wir

u.a. folgende Steckersockel:

Deutsch
 AMP-Junior
 DIN A,B
 Canon-CA
 Desina M12X1

Kundenspezifische Lösungen führen wir entsprechend Ihrer individuellen Wünsche und Anforderungen aus.

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Compact constructions are currently in vogue. Our proportional twin valve magnets comprise two valve solenoids that work independently of each other, but which share a common enclosure. This saves space. The magnets can handle pressure of 50 to 100 bar.

In the meantime, for mobile hydraulics and industrial applications, we currently manufacture 112 different types of twin magnet. We have a further 62 different varieties available for explosive atmospheres.

Properties:

- + Standard size: 25 x 39 [mm] or 30 x 49 [mm]
- + Static nominal pressure 50 to 100 bar
- + Available with or without manual override
- + Voltages of 12 to 24 VDC
- + Output from 20 to 22 W

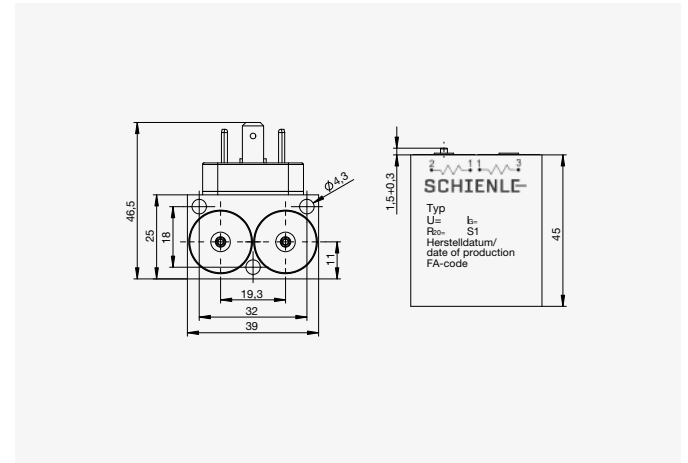
Our range includes the following connector sockets, among others:

Deutsch
 AMP-Junior
 DIN A, B
 Cannon-CA
 Desina M12X1

We produce customer-specific solutions according to your individual desires and requirements.

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Twin solenoid SZ 8A2 xx



Twin valve control solenoid for hydraulic valves – Size 1

Twin valve control solenoids combine two separately controllable pressure-resistant single-stroke linear solenoids in a common enclosure. They are used for actuating valves (mostly pilot valves) and are characterised by their extremely compact construction.

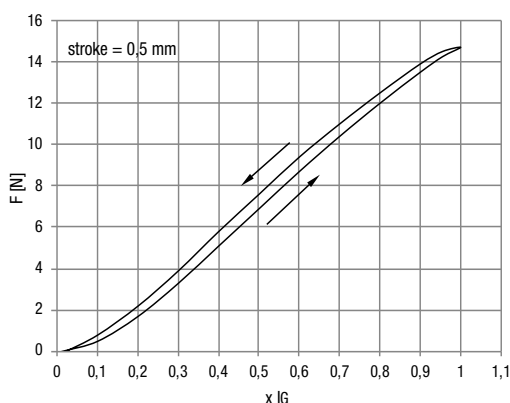
The solid housing, which is affixed to the valve with three screws, holds the pressure-resistant armature tube and permits operating pressure of 50 bar.

Optionally available with manual emergency override and the widest variety of connector sockets (AMP, German, DIN, Schlemmer etc), it is one of the products we offer in the greatest number of variants.

- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803 Form 'A'
- Protection class IP65 in accordance with DIN VDE 0470EN 60529 when used with an appliance socket that complies with DIN 43640

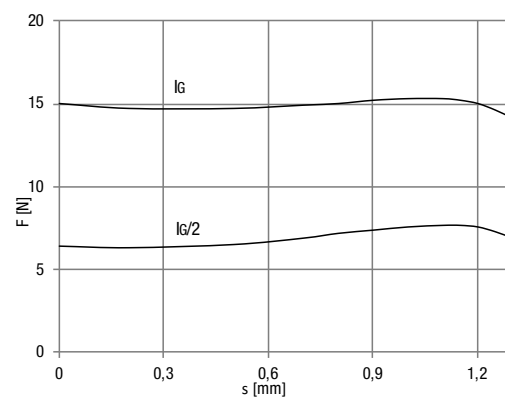
| Technical data | 24 V | 12 V |
|---------------------------------|---|---|
| limit current [A] | 0.6 | 1.2 |
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 40 | 40 |
| force vs. stroke characteristic | proportional | proportional |
| static working pressure [bar] | 50 | 50 |
| thermal class (coil) | F | F |
| ingress protection rating | IP65 | IP65 |
| electrical connection | DIN A, B, C, Desina, Junior Timer AMP, Deutsch, ITT-Canon | DIN A, B, C, Desina, Junior Timer AMP, Deutsch, ITT-Canon |

Force vs. current diagram

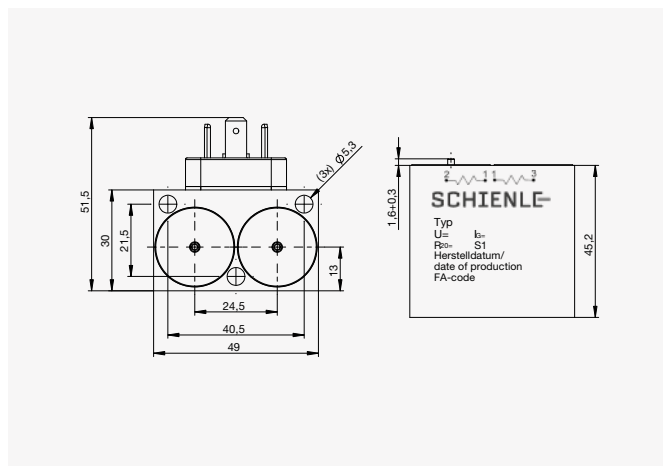


The values can deviate +/- 5%

Force vs. stroke diagram



Twin solenoid SZ 8A3 xx



Twin valve control solenoid for hydraulic valves – Size 2

Twin valve control solenoids combine two separately controllable pressure-resistant single-stroke linear solenoids in a common enclosure. They are used for actuating valves (mostly pilot valves) and are characterised by their extremely compact construction.

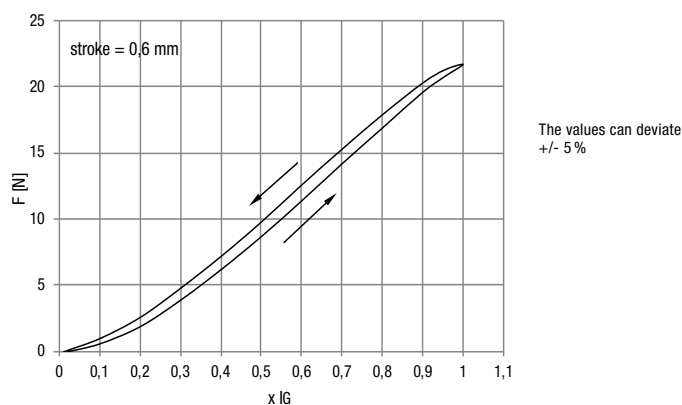
The solid housing, which is affixed to the valve with three screws, holds the pressure-resistant armature tube and permits operating pressure of 50 bar.

Optionally available with manual emergency override and the widest variety of connector sockets (AMP, German, DIN, Schlemmer etc), it is one of the products we offer in the greatest number of variants.

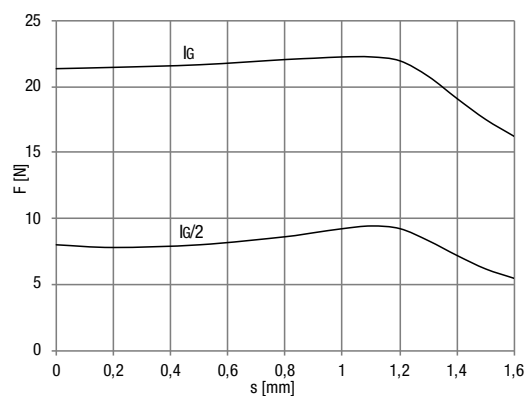
- Electrical design: Construction type and inspection in accordance with VDE 0580
- Electrical connection: DIN EN 175301-803 Form 'A'
- Protection class IP65 in accordance with DIN VDE 0470EN 60529 when used with an appliance socket that complies with DIN 43640

| Technical data | 24 V | 12 V |
|---------------------------------|---|---|
| limit current [A] | 0.63 | 1.33 |
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | 40 | 40 |
| force vs. stroke characteristic | proportional | proportional |
| static working pressure [bar] | 50 | 50 |
| thermal class (coil) | F | F |
| ingress protection rating | IP65 | IP65 |
| electrical connection | DIN A, B, C, Desina, Junior Timer AMP, Deutsch, ITT-Canon | DIN A, B, C, Desina, Junior Timer AMP, Deutsch, ITT-Canon |

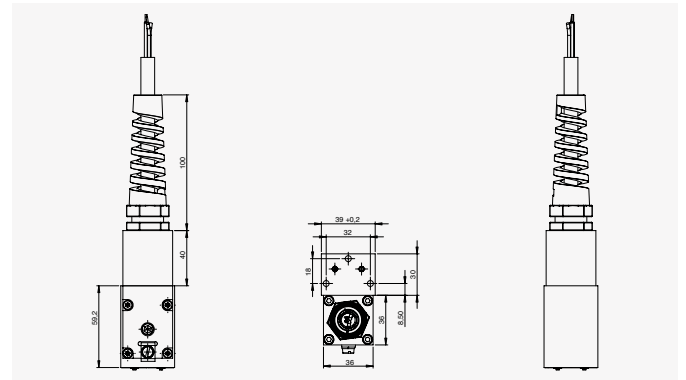
Force vs. current diagram



Force vs. stroke diagram



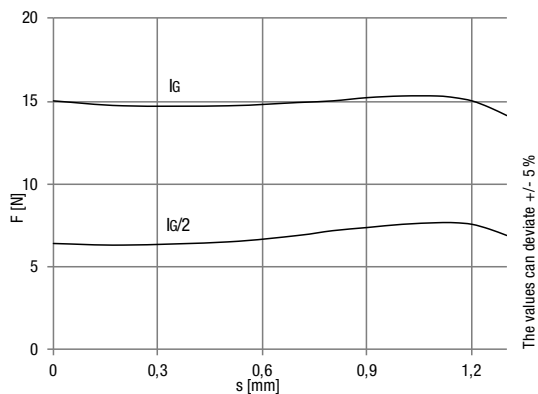
Twin solenoid Ex 04



Ex twin solenoid for hydraulic valves proportional – Size 1

- Twin electromagnet in explosion-proof design.
- Thanks to the protection class-compliant pressure-resistant enclosure, this product can be used worldwide – USA, RUS, IECEx, ATEX
- Approved for Division 1 plus Zone 1, 21 with gas and dust atmospheres.
- With its 39 x 25 mm valve interface and two independent coils, this twin model is ideal for very compact valve concepts.

Force vs. stroke diagram

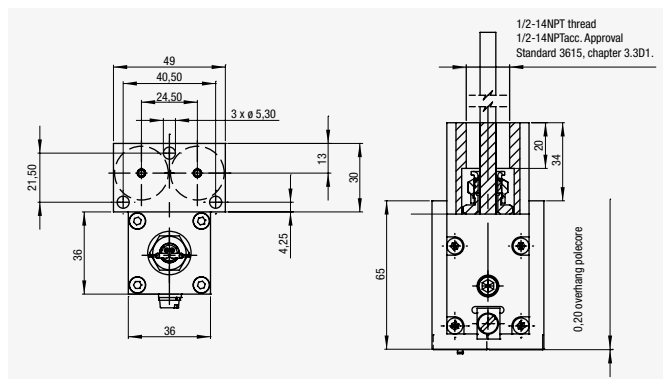


| Technical data | 24 V | 12 V |
|-------------------------------|--|--|
| limit current [A] | 0.6 | 1.2 |
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | +55 | +55 |
| max. medium temperature [%] | +70 | +70 |
| ingress protection rating | IP67 | IP67 |
| thermal class (coil) | H | H |
| static working pressure [bar] | 50 | 50 |
| working stroke [mm] | 1.2 | 1.2 |
| manual override | yes | yes |
| surface treatment | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//TO RoHS-conformed | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//TO RoHS-conformed |

| Type | Certification | Ambient temperature | Labeling |
|------|--------------------------------|---------------------|--|
| EX04 | NEC 500 (USA) | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | NEC 505 (USA) NEC 506 (USA) | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db |
| | CEC Section 18 Annex J | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | CEC Section 18 | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb |
| | ATEX | -40 °C up to +55 °C | ⊕ II 2G Ex d IIB T4 Gb ⊕ II 2D Ex tb IIIC T135 °C Db |
| | IECEx | -40 °C up to +55 °C | Ex d IIB T4 Gb Ex tb IIIC T135 °C Db |



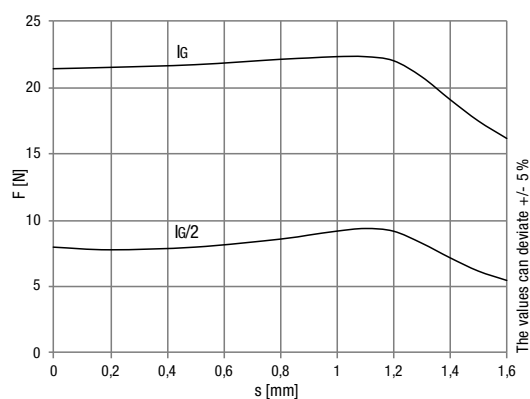
Twin solenoid Ex 11



Ex twin solenoid for hydraulic valves proportional – Size 2

- Twin electromagnet in explosion-proof design.
- Thanks to the protection class-compliant pressure-resistant enclosure, this product can be used worldwide – USA, RUS, IECEx, ATEX
- Approved for Division 1 plus Zone 1, 21 with gas and dust atmospheres.
- With its 49 x 30 mm valve interface and two independent coils, this twin model is ideal for very compact valve concepts.

Force vs. stroke diagram



| Technical data | 24 V | 12 V |
|-------------------------------|--|--|
| limit current [A] | 0.63 | 1.33 |
| duty cycle [%] | 100 | 100 |
| max. ambient temperature [C°] | +55 | +55 |
| max. medium temperature [%] | +70 | +70 |
| ingress protection rating | IP67 | IP67 |
| thermal class (coil) | H | H |
| static working pressure [bar] | 50 | 50 |
| working stroke [mm] | 1 | 1 |
| manual override | yes | yes |
| surface treatment | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed | iron parts zinc-plated EN 12329-Fe/Zn8/C or DIN 50979 Fe//ZnNi4-8//Cn//T0 RoHS-conformed |

| Type | Certification | Ambient temperature | Labeling |
|------|--------------------------------|---------------------|--|
| EX11 | NEC 500 (USA) | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | NEC 505 (USA) NEC 506 (USA) | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb Zone 21, AEx tb IIIC T135 °C Db |
| | CEC Section 18 Annex J | -40 °C up to +55 °C | ⊕ XP, Class I, Division 1, Group C, D, T4 DIP, Class II, Division 1, Group E, F, G T4 DIP, Class III, Division 1 & 2 |
| | CEC Section 18 | -40 °C up to +55 °C | ⊕ Class I, Zone 1, AEx d IIB, T4 Gb |
| | ATEX | -40 °C up to +55 °C | ⊕ II 2G Ex d IIB T4 Gb ⊕ II 2D Ex tb IIIC T135 °C Db |
| | IECEx | -40 °C up to +55 °C | Ex d IIB T4 Gb Ex tb IIIC T135 °C Db |



Schaltmagnete Baugröße 25 bis 60 mm
On/Off solenoids size 25 to 60 mm

+

Die Ventilmagnete der Baureihe SDA gelten aufgrund ihres Vierkantprofils mit vier Befestigungspunkten als besonders robust.

Das druckfeste Magnetrohr dient als Führung des beweglichen Ankers und wird durch das Vierkantgehäuse stabil gegen den hydraulischen Druck gehalten.

Eigenschaften:

Vierkantbauform der Größen 25 mm, 35 mm, 37 mm, 45 mm, 60 mm
Statische Nenndruckbelastbarkeit 100 bis 350 bar
Wahlweise mit oder ohne Handnotbedienung

In unserem Programm führen wir u.a. folgende Steckersockel:

Deutsch
AMP-Junior
DIN A,B
Canon-CA
Desina M12X1

Kundenspezifische Lösungen führen wir entsprechend Ihrer individuellen Wünsche und Anforderungen aus.

+

+

Thanks to their square profile and four attachment points, the valve solenoids in the SDA series can be considered especially robust.

The pressure-resistant solenoid tube serves as a guide for the moveable armature, and the square enclosure holds it steady against the hydraulic pressure.

Properties:

Square construction in the following sizes: 25 mm, 35 mm, 37 mm, 45 mm, 60 mm
Static nominal pressure 100 to 350 bar
Available with or without manual override

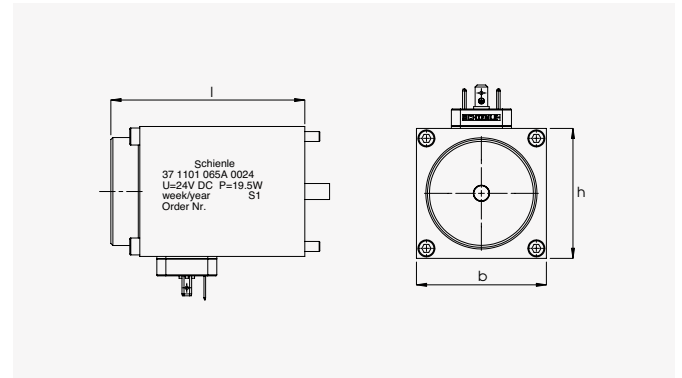
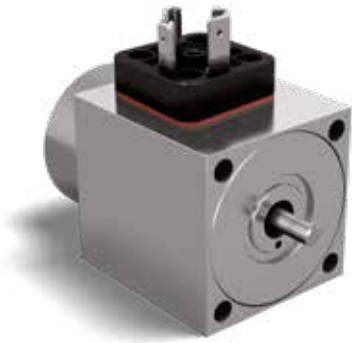
Our range includes the following connector sockets, among others:

Deutsch
AMP Junior
DIN A, B
Cannon CA
Desina M12X1

We produce customer-specific solutions according to your individual desires and requirements.

+

On/Off solenoids



Valve solenoid with pressure-proof core tube up to 350 bar

The force-current characteristics have a rising head curve and can be adapted to customer-specific demands.

Specially designed for use in oil hydraulics, optional manual override and a variety of electrical plug types (also MIL solutions) are available. The mechanically and electrically robust construction guarantees a long lifespan and reliable operation, even in adverse environmental conditions. For devices of this series, we offer extensive benefits even from medium lot sizes, like for example individual identification by serial number, with access to the inspection protocol.

Dimensions: 25 x 25 mm, 35 x 35 mm, 45 x 45 mm, 60 x 60 mm
The technical data can be obtained from the attached table.

| General | |
|-----------------------------|-------------|
| Medium: | Mineral oil |
| Maximum operating pressure: | see table |

| Elektrische Daten | |
|---|---------------------------------|
| Operating voltage: | see table 1 |
| Power consumption: | see table 1 |
| Pull power: | see table 1 |
| On-time: | S1 |
| Electrical connection: | DIN A,B,C, AMP, DT, Desina etc. |
| Class of insulating material according to VDE 0580: | F |
| Insulation strength: | ≥ 10 M Ohm |

| Environmental conditions | |
|--------------------------------------|--|
| Temperature | |
| Medium: | -40° to +135 °C |
| Environment: | -40° to +135 °C |
| Protection type (DIN 40050): | IP65, depending on plug type |
| Wear resistance of housing material: | Iron parts galvanized according to DIN 50979 Fe//Zn8//Cn//T0 |

Table 1

| Type | Lift [mm] | Force [N] | Power [W] | Voltage [V] | w [mm] | h [mm] | l [mm] | Pressure [bar] |
|------|-----------|-----------|-----------|-------------|--------|--------|--------|----------------|
| 25er | 1 + 0.7 | 20 – 80 | 22 | 12 – 24 | 25 | 25 | 42 | 100 |
| 35er | 3 + 3 | 30 – 100 | 25 | 12 – 205 | 35 | 35 | 67 | 350 |
| 45er | 4 + 1 | 70 – 130 | 32 | 13 – 205 | 45 | 45 | 70 | 350 |
| 60er | 4.5 + 4.5 | 90 – 235 | 38 | 14 – 205 | 60 | 60 | 90 | 350 |



Betätigungssysteme Hydraulic solenoids – tube

+

Der zweiteilige Aufbau aus abnehmbarer Erregerspule und Magnetrohr (auch Druckrohre, Führungsrohre oder Armaturen genannt) ist durch die Trennung des mechanischen und elektrischen Bauteiles sehr reparaturfreundlich .

Das Kernstück stellt das druckfeste Magnetrohr dar. Es dient als Führung des beweglichen Ankers und wird durch ein Zentralgewinde oder eine Montageplatte am Ventil befestigt.

Magnetrohr Eigenschaften:

Standard Rohrdurchmesser 19 mm

(Auf Anfrage 10 mm bis 32 mm)

Statische Nenndruckbelastbarkeit ab 100 bis 500 bar.

Wahlweise mit und ohne Handnotbedienung

Wir setzen mit unseren Standardlösungen auf hohe Wirkungsgrade durch geringe parasitäre Luftspalte zwischen Erregerspule und Magnetrohr.

Dadurch sind gegenüber konventionellen Lösungen bis zu 20 % mehr Kraft möglich.

Erregerspule Eigenschaften:

Vierkantbauform der Größen 37 und 45 mm

Spannungen von 12 bis 205 VDC

Leistungen von 3 bis 30 W

In unserem Programm führen wir u.a. folgende Steckersockel:

Deutsch

AMP-Junior

DIN A,B

Canon-CA

Desina M12X1

Kundenspezifische Lösungen führen wir entsprechend Ihrer individuellen Wünsche und Anforderungen aus.

+

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The two-part construction comprising removable exciter coil and solenoid tube (also known as pressure tube, guide tube or armature) is extremely easy to repair thanks to the mechanical and electrical components being separate.

Its key component is the pressure-resistant solenoid tube. It serves as a guide for the moveable armature, and is affixed to the valve by a central thread or a mounting plate.

Solenoid tube properties:

Standard tube diameter 19 mm

(10 mm to 32 mm upon request)

Static nominal pressure 100 to 500 bar.

Available with or without manual override

Our standard solutions achieve a high degree of efficiency thanks to smaller parasitical air gaps between the exciter coil and solenoid tube.

They therefore achieve up to 20 % more force than conventional solutions.

Exciter coil properties:

Square construction in the following sizes:

37 and 45 mm

Voltages of 12 to 205 VDC

Output from 3 to 30 W

Our range includes the following connector sockets, among others:

Deutsch

AMP Junior

DIN A, B

Cannon CA

Desina M12X1

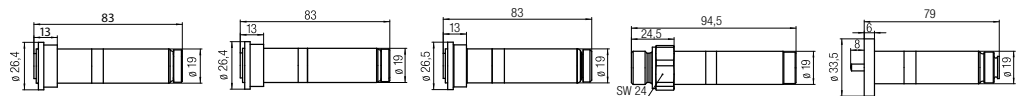
We produce customer-specific solutions according to your individual desires and requirements.

+

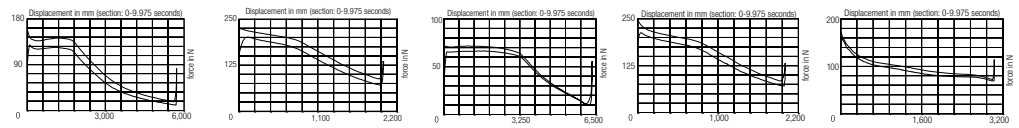
Valve solenoid – tube kit

| Solenoid tube 19 mm | long stroke | short stroke | proportional | high pressure | air-operated |
|--|-------------|--------------|--------------|---------------|--------------|
| Pressure-tight up to [bar] | 350 | 350 | 350 | 500 | / |
| Working stroke [mm] | 1,8 | 1 | 3 | 1 | 2,6 |
| Pushing version | X | X | X | X | X |
| Magnetic force [N] (Exc. coil 47 x 47) | 110 | 140 | 65 | 140 | 75 |

Fig.



Force vs. stroke diagram



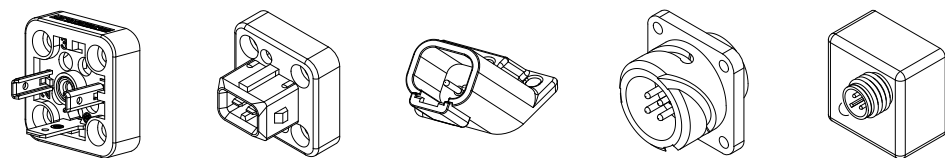
| Excitation coil | Excitation coil 37 x 37 | Excitation coil 47 x 47 |
|------------------|-------------------------|-------------------------|
| Duty cycle [%] | 100 | 100 |
| Insulation class | F | 1 |
| Output [W] | 3–30 | 3–30 |
| Voltage [V] | 12–230 | 12–230 |

Fig.



| Connector socket | DIN-A | AMP-Junior | Deutsch | Cannon-CA | DESINA M12X1 |
|---|-------|------------|---------|-----------|--------------|
| IP protection class DIN EN 60529 (protection class with connector fitted) | IP 65 | IP 67 | IP 67 | IP 67 | IP 67 |

Fig.





Hubmagnete Linear solenoids

+

Die Einfach.- und Doppelhubmagnete der SLA Serie sind Geräte mit großem Leistungsvermögen. Durch die waagrechte Kennlinie stehen über den gesamten Hubverlauf hohe Zug oder Druckkräfte zur Verfügung. Die beidseitige hochwertige Lagerung des Ankers ist wartungsfrei und verschleißarm.

Hohe Leistungsdichte, geringe Abmessungen, niedrige Leistungsaufnahme bei größter Hubarbeit, kurze Schaltzeiten und eine robuste Bauart sind typisch für unsere Hubmagnete.

Eingesetzt werden unsere Hubmagnete unter anderem in der Nahrungsmittelindustrie, der Gebäudetechnik und der Automatisierung.

Alle Produkte sind gefertigt und geprüft nach DIN VDE 0580/07.2000.

Die angegebenen Magnetkräfte werden bei 90% der Nennspannung und im betriebswarmen Zustand erreicht.

Varianten:

Hubbereiche von 3 mm bis 20 mm
 Kräfte von 6 bis 300 N
 Spannungen von 12 bis 205 VDC

+

+

The single and double lifting magnets in the SLA series are devices with high performance capability. Thanks to their horizontal characteristic, high tractive or compressive force is available over the entire course of lifting. The high quality armature bearing at both sides is maintenance-free and low-wear.

High output densities, compact dimensions, low power consumption during even the most demanding lifting works, short switch times and sturdy construction are typical of our lifting magnets.

Our lifting magnets are used in the food, building technology and automation sectors, among many others.

All products are manufactured and tested in accordance with DIN VDE 0580/07.2000.

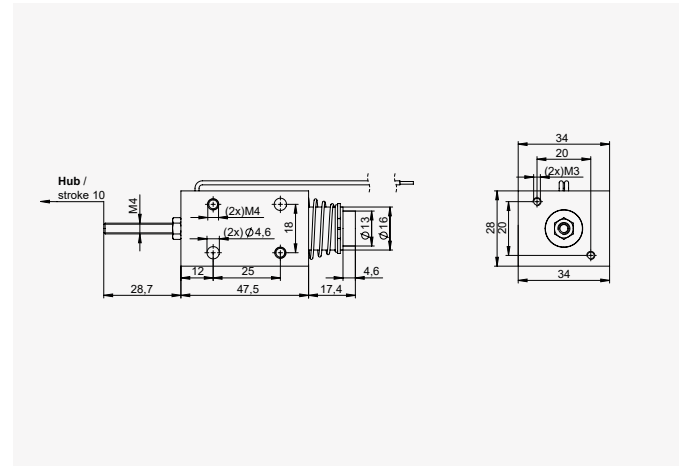
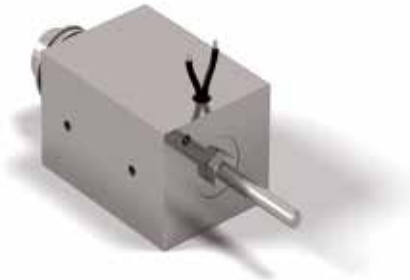
The magnetic forces stated are achieved at 90% of the nominal voltage and at operational temperature.

Variants:

Lifting ranges from 3 to 20 mm
 Forces from 6 to 300 N
 Voltages of 12 to 205 VDC

+

Single stroke solenoid SLA 034E yyy



The direct acting solenoid SLA 034E is a solid solenoid with plunger. The plunger is guided in highly wear-resistant maintenance-free precision bearings on both sides.

Housing surfaces are corrosion protected. The plunger is chemically nickel-plated. The stroke movement takes place from the stroke starting position to the stroke stop position by electro-magnetic forces, whereas the reset is accomplished by a pressure spring. The force transfer should be in axial direction only. Either lateral or front mounting via threaded holes is possible.

Type code:

SLA 034x yyy

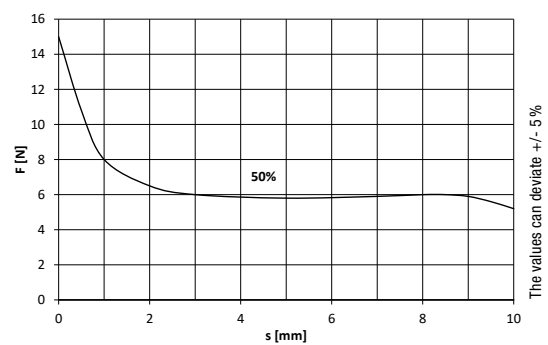
x = Type of connector
A-DIN Connector, B-AMP Connector

yyy = Voltage
012 = 12 V, 024 = 24 V

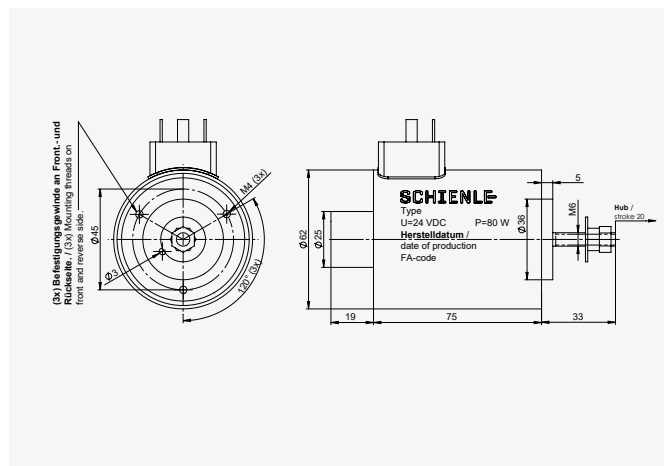
Technical data

| | |
|-------------------------------|---|
| duty cycle [%] | 50 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 10 |
| nominal power [W] | 16 |
| nominal voltage [V] | 24 |
| ingress protection rating | IP 00 |
| thermal class (coil) | F |
| electrical connection | flexible lead ends |
| surface protection | pole core and housing zinc-plated / plunger chemically nickel-plated |

Force vs. stroke diagram



Single stroke solenoid SLA 062x yyy



The direct acting solenoid SLA 062 is a solid solenoid with plunger. The plunger is guided in highly wear-resistant maintenance-free precision bearings on both sides.

Housing surfaces are corrosion protected. The plunger is chemically nickel-plated. The stroke movement takes place from the stroke starting position to the stroke stop position by electromagnetic forces, whereas the reset is accomplished by a pressure spring. The force transfer should be in axial direction only. Either lateral or front mounting via threaded holes is possible.

Solenoids can be supplied with free cable ends (with DIN VDE 0470 / EN 60529 – IP20 protection), or with DIN 43650 connectors (with DIN VDE 0470 / EN 60529 – IP54 protection).

Type code:

SLA 062x yyy

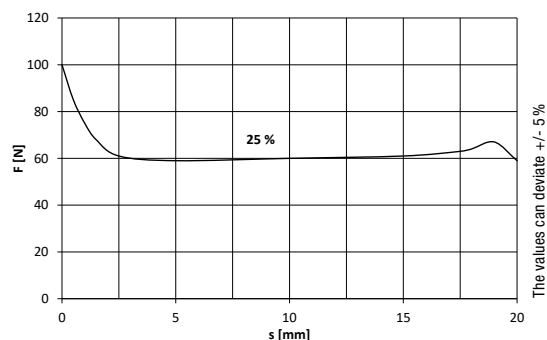
x = Type of connector
 A-DIN Connector, B-AMP Connector

yyy = Voltage
 012 = 12 V, 024 = 24 V

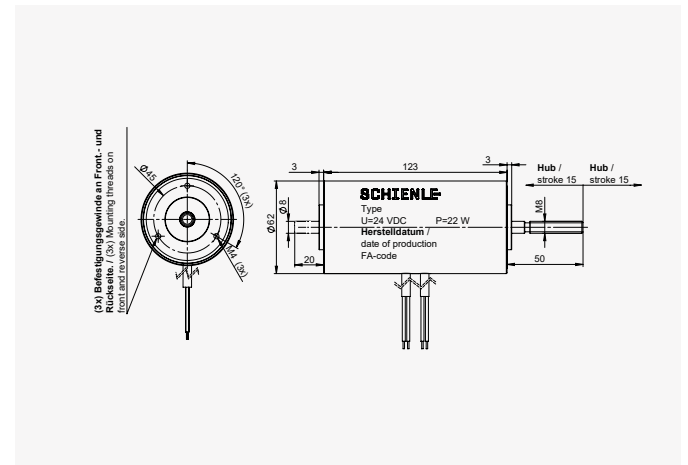
Technical data

| | |
|-------------------------------|--|
| duty cycle [%] | 25 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 20±0,5 |
| nominal power [W] | 80 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 54 |
| thermal class (coil) | F |
| electrical connection | DIN A |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram



Double stroke solenoid SLA 062E yyy A



Double acting solenoids are magnets where electromagnetic forces move the armature from the home position to one of the two stroke end positions. Return to the home position is usually carried out by external forces. On both sides, the armature is guided on maintenance-free precision bearings, ensuring a long working life. An axial power take off is important in this context. The solenoids can be supplied with free cable ends, protection class according to DIN VDE 0470/EN 60529 – IP20, or with plug connectors according to DIN 43650, protection class DIN VDE 0470/EN 60529 – IP54.

Type code:

x = Type of connector
A-DIN Connector, B-AMP Connector

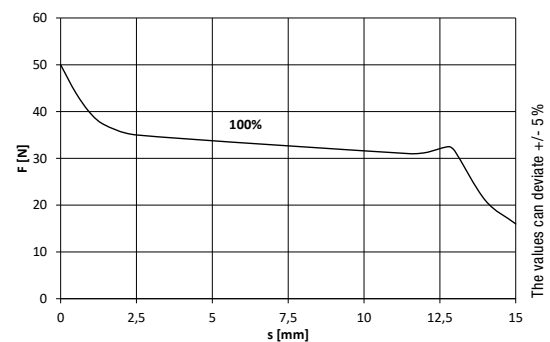
SLA 062E **yyy** A

yyy = Voltage
012 = 12 V, 024 = 24 V

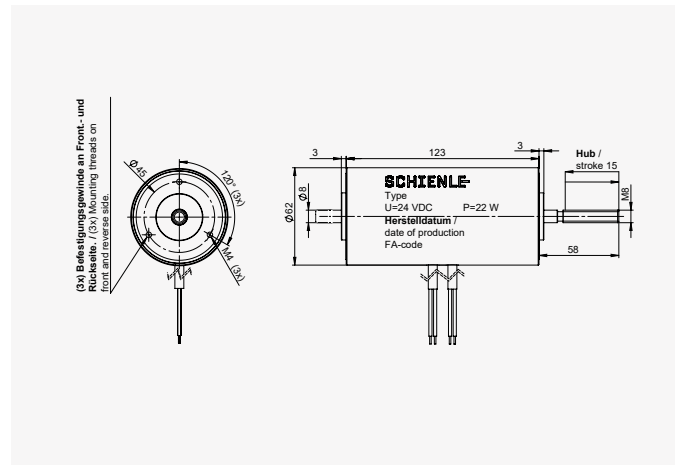
Technical data

| | |
|-------------------------------|---------------------------------------|
| duty cycle [%] | 100 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 15 |
| nominal power [W] | 22 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP20 |
| thermal class (coil) | F |
| electrical connection | DIN A |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram



Reversal stroke solenoid SLA 062E yyy B



Reverse stroke solenoids are effective at both ends. The stroke end position of the plunger in a solenoid system is also the starting position of the stroke in another solenoid system. In this version, the plunger does not have to be reset using mechanical force. The plunger is operated at both ends in zero-maintenance precision bearings, ensuring a long lifetime. It is important that force is drawn off axially. Solenoids can be supplied with free cable ends (with DIN VDE 0470/EN 60529 – IP20 protection), or with DIN 43650 connectors (with DIN VDE 0470/EN 60529 – IP54 protection).

Type code:

x = Type of connector
 A-DIN Connector, B-AMP Connector

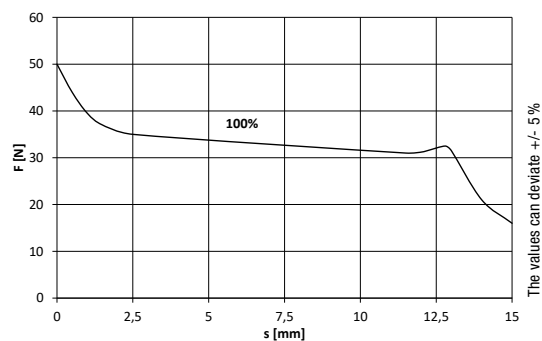
SLA 062E yyy B

yyy = Voltage
 012 = 12 V, 024 = 24 V

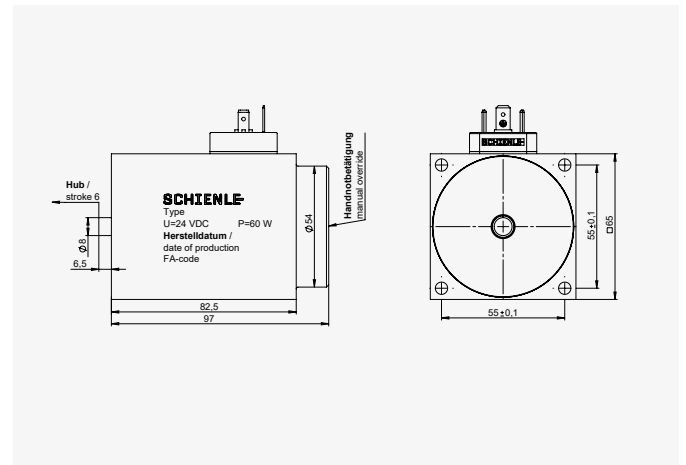
Technical data

| | |
|-------------------------------|--|
| duty cycle [%] | 100 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 15,5 + 1 |
| nominal power [W] | 22 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 20 |
| thermal class (coil) | F |
| electrical connection | DIN A |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram



Single stroke solenoid SLA 065x yyy



The force-current characteristics have enormous force capabilities and can be adapted to customer-specific demands. The axis is workable as a valve plunger or an M8 thread axis. Applications including water valves, water hydraulics, high pressure valves or other mechanical tasks with high power requirements. The mechanically and electrically robust construction guarantees a long lifespan and reliable operation, even in adverse environmental conditions.

For devices of this series, we offer extensive benefits even from medium lot sizes, like for example individual identification by serial number, with access to the inspection protocol.

Dimensions: 65 x 65 mm in two power levels: 60 W and 19 W. The technical data can be obtained from the attached table or diagram.

Type code:

x = Type of connector
A-DIN Connector, B-AMP Connector

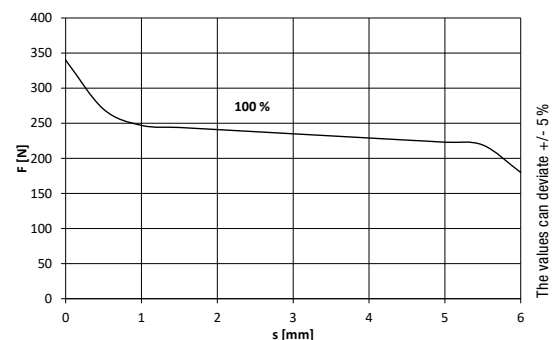
SLA 065x yyy

yyy = Voltage
012 = 12 V, 024 = 24 V

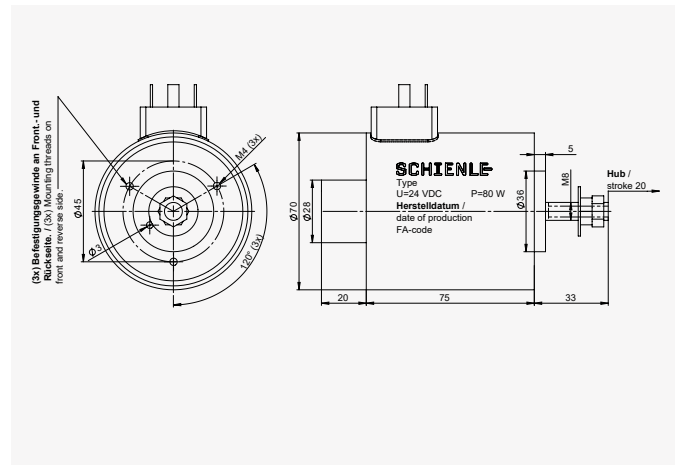
Technical data

| | |
|-------------------------------|--|
| duty cycle [%] | 100 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 6+0,8 |
| nominal power [W] | 60 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 65 |
| thermal class (coil) | F |
| electrical connection | DIN A, B, C, AMP, DT, Desina usw. |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram



Single stroke solenoid SLA 070x yyy



Our single-acting solenoids are available in different versions, designed for either pulling or pushing action. The plunger must be returned to its original position using external force and is operated in zero-maintenance precision bearings, ensuring a long lifetime. It is important that force is drawn off axially.

Type code:

x = Type of connector
 A-DIN Connector, B-AMP Connector

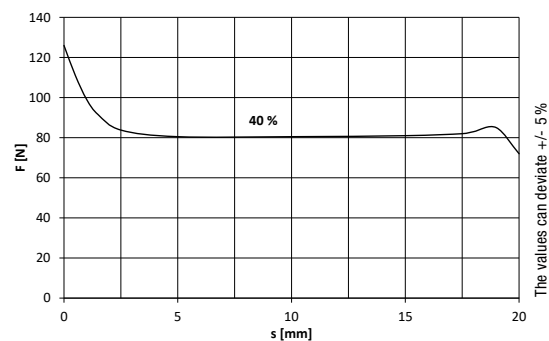
SLA 070x yyy

yyy = Voltage
 012 = 12 V, 024 = 24 V

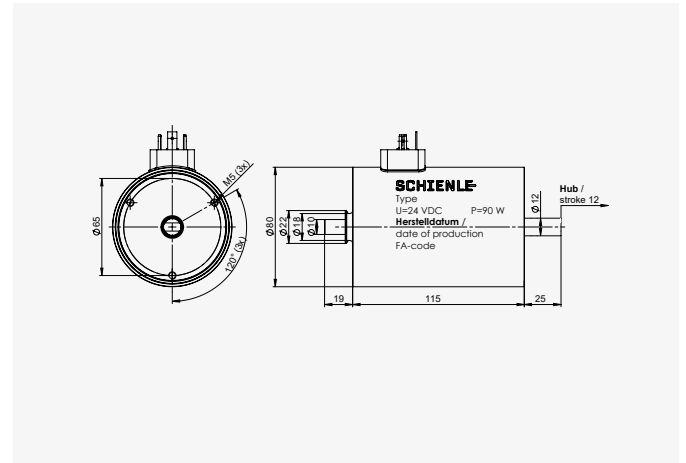
Technical data

| | |
|-------------------------------|---------------------------------------|
| duty cycle [%] | 40 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 20±0,5 |
| nominal power [W] | 80 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 54 |
| thermal class (coil) | F |
| electrical connection | DIN A |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram



Single stroke solenoid SLA 080x yyy



Our single-acting solenoids are available in different versions, designed for either pulling or pushing action. The plunger must be returned to its original position using external force and is operated in zero-maintenance precision bearings, ensuring a long lifetime. It is important that force is drawn off axially.

Type code:

x = Type of connector
A-DIN Connector, B-AMP Connector

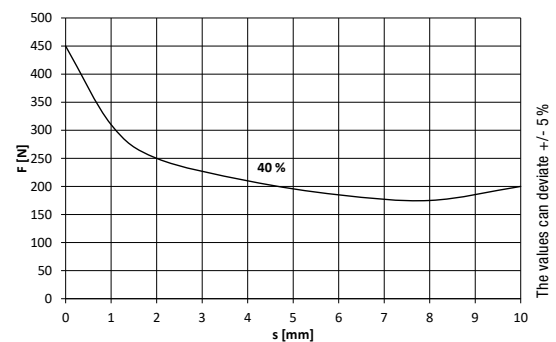
SLA 080x yyy

yyy = Voltage
012 = 12 V, 024 = 24 V

Technical data

| | |
|-------------------------------|--|
| duty cycle [%] | 40 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 12+0,6/-0,4 |
| nominal power [W] | 90 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 67 |
| thermal class (coil) | F |
| electrical connection | DIN A |
| surface protection | conical cover and housing zinc-coated |

Force vs. stroke diagram





Kundenspezifische Lösungen
Special solutions

+

Die vorliegende Broschüre gibt nur ein sehr kleines Spektrum unserer Produkte wieder. Unsere kundenspezifischen Lösungen bilden den Großteil unseres Produktportfolios.

Gerne entwickeln wir gemeinsam mit Ihnen die für Ihre Aufgabenstellung passgenaue Lösung oder passen eine unserer bestehenden Lösungen auf Ihre Bedürfnisse an.

Einige Beispiele solcher Lösungen haben wir dieser Broschüre mitgegeben.

Darüber hinaus verfügen wir über Erfahrungen in den Bereichen:

- + Zentralschmiersysteme
- + Wasserhydraulik
- + Bulk & Powder (ATEX, IECEx, NEC)
- + Bergbautechnik
- + Verriegelungstechnik
- + Verpackungsmaschinen
- + Pneumatik
- + Hallsensorik
- + Wirbelstrombremsen
- u.v.m

Nehmen Sie mit uns Kontakt auf und schildern Sie unseren Mitarbeitern Ihre Aufgabenstellung.

+

+

This brochure shows only a small selection of our products. Our customer-specific solutions form the greater part of our product portfolio.

We would be pleased to work in partnership with you to develop a tailor-made solution to meet your needs, or to adapt one of our existing solutions to meet your requirements.

We have included some examples of such solutions in this brochure.

Furthermore, we are also experienced in the following areas:

- + Central lubrication systems
- + Water hydraulics
- + Bulk and powder (ATEX, IECEx, NEC)
- + Mining technology
- + Locking technology
- + Packing machines
- + Pneumatics
- + Hall effect sensors
- + Eddy current brakes
- and much more

Get in touch with us and describe your requirements to our team.

+

Valve solenoid on/off Robust 37

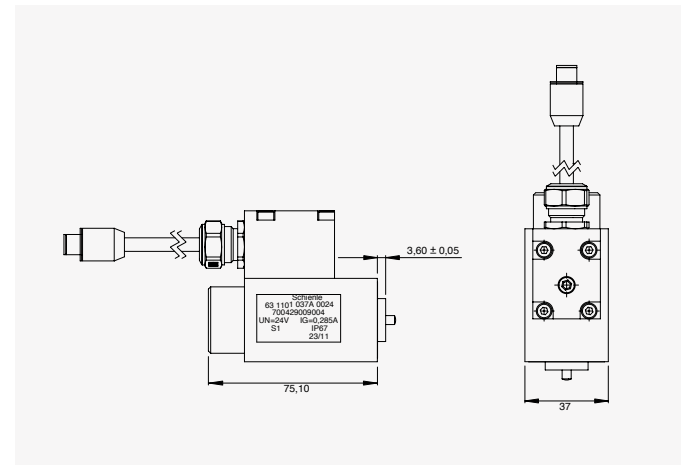


The pressure-proof Robust 37 solenoid stands out thanks to its exceptional reliability under critical operating conditions.

- Extreme ambient und process temperatures of -40 to +135 °C
- Strong vibrations 40 g
- Large fluctuations in supply voltage

The four point valve fastening is designed to secure the solenoids reliably and safely even in the presence of strong vibrations. The reduced anchor mass is designed to guarantee safe operation of the valve even at 40 g (11 ms, half-sine).

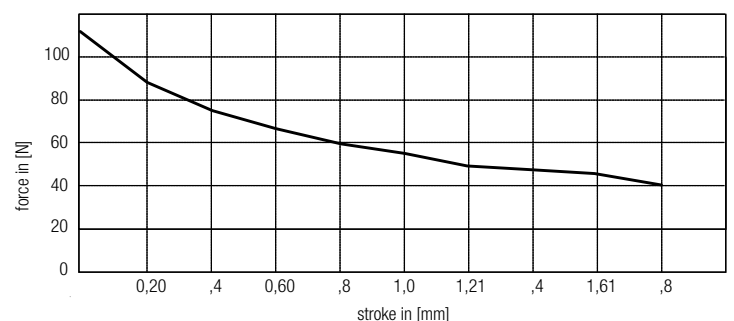
Tailored for mobile applications, the coil is designed to be able to perform lifting work even at 25% undervoltage. Thanks to appropriate lay-out design and material choice, the coil temperature will remain at uncritical levels even at 30% overvoltage.



Technical data

| | |
|-------------------------------|---|
| duty cycle [%] | 100 |
| max. ambient temperature [C°] | 40 |
| working stroke [mm] | 6+0,8 |
| nominal power [W] | 60 |
| nominal voltage [V] | 12 – 205 |
| ingress protection rating | IP 65 |
| thermal class (coil) | F |
| electrical connection | DIN A, B, C, AMP, DT, Desina usw. |
| surface protection | coneical cover and housing zinc-coated |

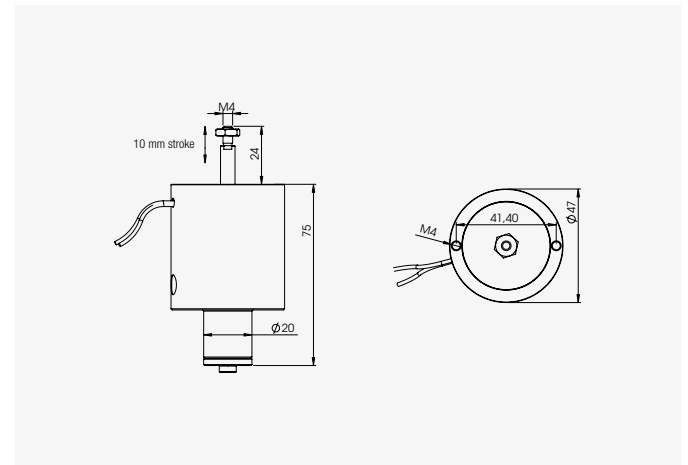
Force vs. stroke diagram



| General | |
|---|--|
| medium: | Mineral oil |
| nominal pressure: | 150 bar |
| maximum operating pressure: | 300 bar |
| Electrical data | |
| operating voltage: | 24 V DC. Voltage tolerance 18 – 32 V |
| power consumption: | 8 W |
| pull power: | max. 0.7 A |
| Rresistance (Ohm, 20°C): | 72 (+10 %/-10 %) |
| duty cycle: | Magnet or V-Block ambient temp. 135 °C S3 30% ED 5 min at 30 V, 15 min at 32 V & 20 °C |
| quenching circuit: | Varistor S10V-S07K50 |
| cable entry: | Bolting |
| electrical connection: | fixed |
| class of insulating material according to VDE 0580: | F |
| insulation strength: | ≥ 10 M Ohm |
| overvoltage strength: | 55 V / 100 ms |
| actuation time: | ≤ 25 ms |
| Environmental conditions | |
| temperature | |
| medium: | -40° to +135 °C |
| environment: | -40° to +135 °C |
| stock: | -50° to +135 °C |
| cable / plug: | -50° to +150 °C |
| humidity: | < 98 % rel. humidity at 55 °C |

| Vibration | |
|--------------------------------------|--|
| white noise: | 30 g rms (10 to 2000 Hz) |
| sine: | 30 g (55,7 to 2000 Hz) |
| shock: | 50 g/11 ms, half-sine |
| protection type (DIN 40050): | IP69 K; IP67 |
| wear resistance of housing material: | Iron parts galvanized according to DIN 50979 Fe//Zn8//Cn//TO aluminium components bl elox. |
| housing / cable wear resistance: | Lubricating oil, diesel fuel, coolant, detergent |
| Interfaces/Connections | |
| electrical | |
| connection: | Cable tail with 3-pole plug M12x1 according to EN 60947-5-2 |
| Mechanical data | |
| cable | |
| tensile strength: | > 100 N at 23 °C and 100 °C |
| EMC | |
| requirements: | MIL-STD 461E (2007), VG 95373, depending on plug and cable |
| Installation info | |
| installation position: | any |
| position of magnet to valve body: | selectable in 90 degree position |

Solenoid – guided axis



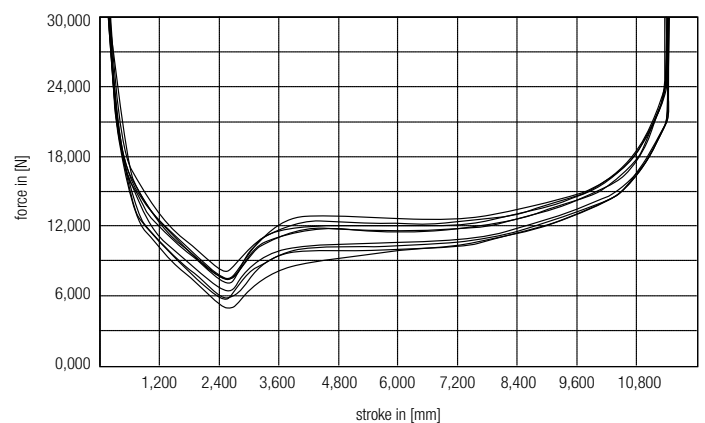
The term lifting cylinder may not be correct, however it does describe the area of application of this solenoid both simply and suitably.

Wherever a pneumatic cylinder is too expensive and too technically demanding, this very compact solenoid is used.

The following features distinguish it from the crowd:

- its speed
- low end-position pulse
- its easy controllability
- simple and compact build

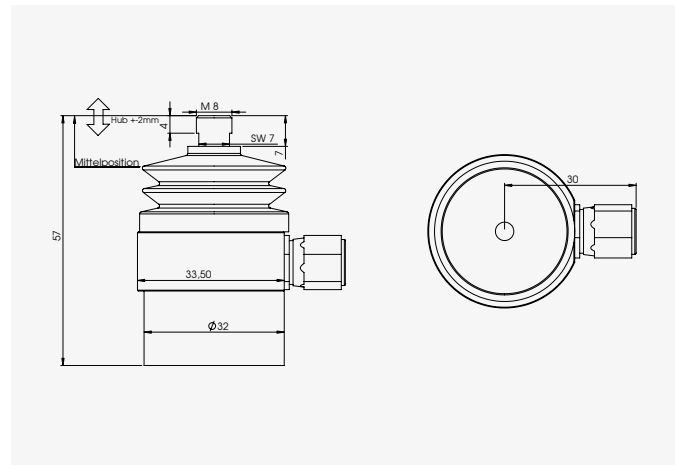
Thanks to a guided axis it is suitable for the direct fitting of tools, e.g. a pinch roller.



Technical data

| | |
|---|---|
| voltage: | 24 V |
| duty cycle: | 20 % (without current limit) |
| ambient temperature: | 0 to 40 °C |
| actuation time: with boost current | < 40 msec |
| fall time: dependent on protective circuit | < 100 msec |
| mass to be moved: | < 50 g |
| transverse force: | < 5 N |
| axle: | Twist-proof |
| lift: | > 10 mm (limitable) |
| mediums: | Cleaning agent/condensed water |
| protection type: | Dependent on chosen electrical connection |
| fastening: | 2 * M4 |
| connection: | 500 mm pig tail |

Inductive vibration sensor ATEX



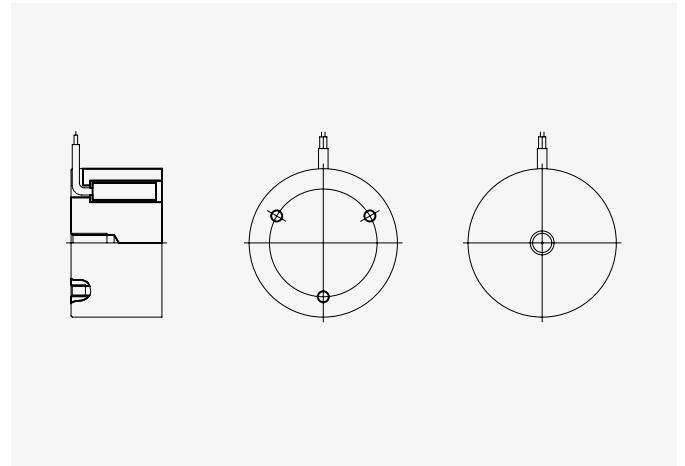
Our ATEX approved motion sensor converts mechanical vibrations into electrical signals. This signal can be used for example in a jogging unit to control the mechanical vibration frequency and amplitude. The ATEX certified sensor complies with II 2D Ex mb IIIC and has therefore been especially developed for dusty atmospheres. The sensor, as a separate armature/coil unit, forms an excellent platform for customer-specific adaptations.

| Electrical data | |
|-------------------------|--------------------------|
| operating voltage: | Operation as a generator |
| power output: | max. 1.5 W |
| resistance (Ohm, 20°C): | 1500 +/- 10 % |
| duty cycle: | 100 % |
| quenching circuit: | none |
| cable entry: | Cable gland Ex „Dust“ |
| electrical connection: | Cable 3 m Ex „Dust“ |

| Environmental conditions | |
|------------------------------|-----------------|
| temperature | |
| medium; | Dust zone 21/22 |
| environment; | 0 to +50 °C |
| protection type (DIN 40050): | IP 67 |

| Explosion protection data | |
|---------------------------|---------------------------------------|
| ex-labelling designation: | Ex II 2D Ex mb IIIC IP65 T135°C Db |

DC Holding Solenoid



DC holding solenoids are shielded solenoids with an open magnetic circuit that, when activated, allows the system to adhere to ferromagnetic parts. When the voltage is deactivated, the adhering part detaches immediately. The forces of magnetism work regardless of surface characteristics, dimensions and the magnetic properties of adhering parts. Holding solenoids have rising solenoid force/stroke characteristic curves.

- Solenoids are supplied with free cable ends (with DIN VDE 0470/EN 60529 – IP20 protection).

Technical Data

| | |
|--------------------|---|
| Dimensions: | 25 – 100 mm |
| Solenoid force: | 150 – 3700 N |
| Voltage: | 12 – 110 VDC for dimensions 25 – 30 mm 12 – 250 VDC for dimensions 40 – 100 mm |
| Insulation class:: | F / 155 °C |

- Special versions available on request.

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MAGNETTECHNIK

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