

**SOLENOIDS  
COILS  
ELECTROMAGNETIC  
LOCKS AND INTERLOCKS**

We have a pleasure to present our company, which was founded in 1959. Since 1992, we have been operating as a joint-stock company (Spółka Akcyjna). Our manufacturing offer includes the railway, hydraulic and electrical machinery products. Our products have been well known in Poland and many other European countries for years.

Below is the outlined range of our products and offer\*.

#### RAILWAY:



- ZW-1 and ZW-2 couplers for electric heating of railcars,
- solenoids for railcar door interlocks and turnout control,
- coils and valves used in the railway rolling stock,
- AKP4 and 10PP pantograph contact shoes,
- spare parts for Scharfenberg couplers,
- separation transformers for supply of electric turnout heating equipment.

#### HYDRAULICS AND PNEUMATICS:



- solenoids for hydraulic and pneumatic distributors,
- solenoids for ATEX-compliant gas valves,
- solenoids and coils for Ex zones,
- electromagnetic coils,
- electromagnetic locks and interlocks,
- electric connectors for solenoids (plugs and sockets).

#### ELECTRICAL POWER ENGINEERING:



- low-voltage current transformers in class 1; 0.5; 0.5S; 0.2; 0.2S,
- safety transformers in casing (portable),
- single-phase protective transformers,
- toroidal transformers, including those for halogen lighting.

#### ENGINEERING INDUSTRY:



- BJP electromagnetic chucks for grinders,
- tops for BJP electromagnetic chucks,
- cable handlers (layers) with steel structure.

We also recommend other products that can be made to custom order. We offer the cooperation in manufacturing collaboration, including the development and introduction into production of completely new solutions. On account of constant drive to make our offer more attractive, the appearance and parameters of some products may differ from those in this catalogue. Not all products could be presented in it. For up-to-date information, contact our Marketing and Sales Department:

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Quality Management  
 We are certified  
 Voluntary participation in regular  
 monitoring according to ISO 9001:2008

## SOLENOIDS FOR HYDRAULICS

### EMSG-45X

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

EMSG-45X is supplied with direct current and operates in hydraulic oil environment.

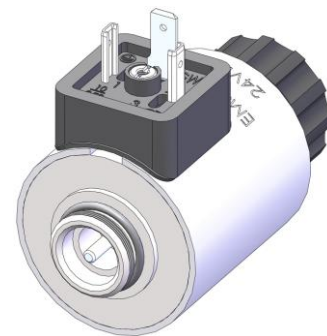
Mode of operation – “pushing”.

The manufacturing programme includes a wide range of voltage configurations.

By default, the solenoid is equipped with a manual control button (emergency control).

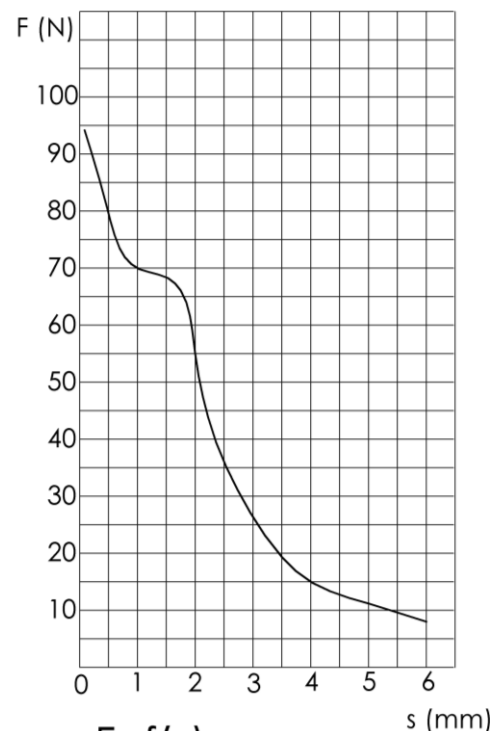
The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



#### SPECIFICATION:

Rated power	[W]	30
Stroke	[mm]	6,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	8
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12;21;24;42;48;60 96;110;125;206;220
Mounting dimensions		M20 x 1
Weight	[kg]	0,55
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 85
Type of electric connector		DIN 43650A



$$F=f(s)$$

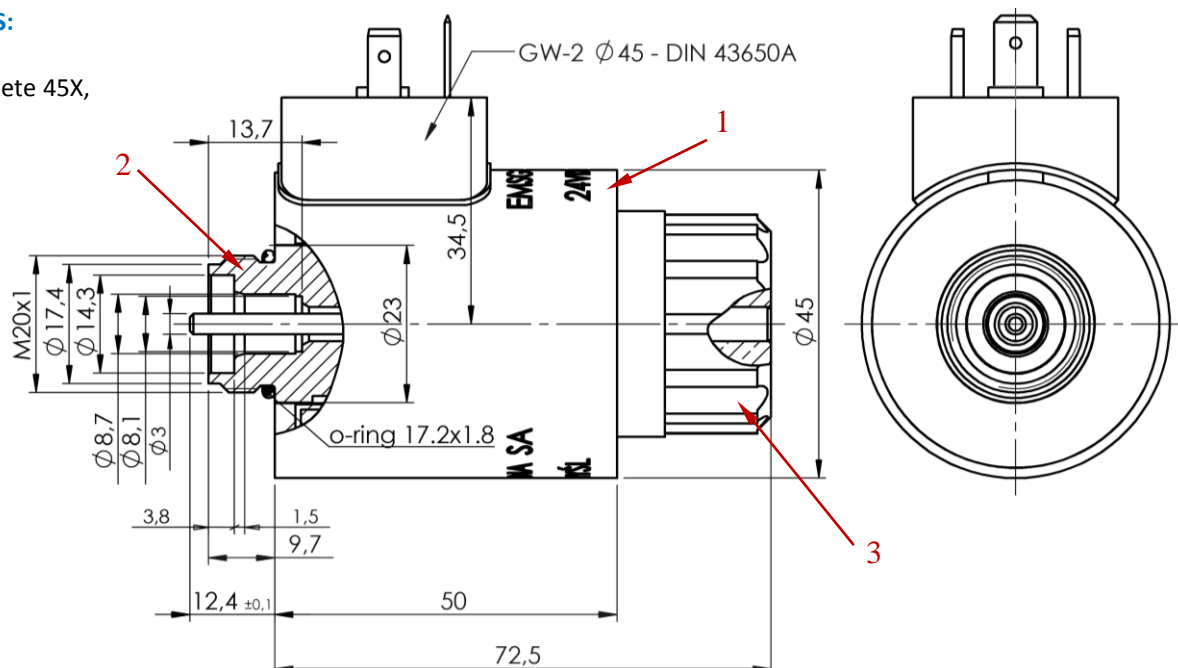
$$I_p=0,857 \text{ Istab.}$$

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

#### AVAILABLE SPARE PARTS:

1. coil 45X,
2. pole tube complete 45X,
3. nut 45X.



## SOLENOIDS FOR HYDRAULICS

## EMSG-45LX

### APPLICATION:

### Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

EMSG-45LX is supplied with direct current and operates in hydraulic oil environment.

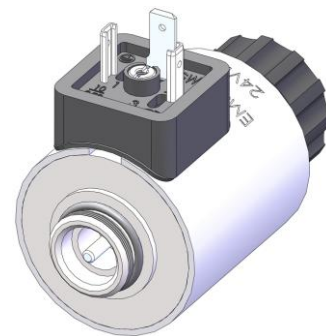
Mode of operation – “pushing”.

The manufacturing programme includes a wide range of voltage configurations.

By default, the solenoid is equipped with a manual control button (emergency control).

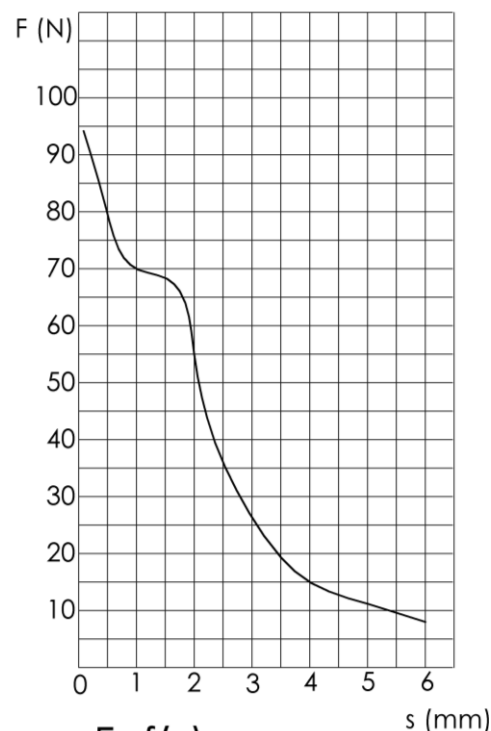
The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



**SPECIFICATION:**

SPECIFICATION		
Rated power	[W]	30
Jumper stroke	[mm]	6,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	8
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	<b>12;21;24;48;60;96</b> 110;125; <b>206;220</b>
Mounting dimensions		M20 x 1
Weight	[kg]	0,55
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 85
Type of electric connector		DIN 43650A



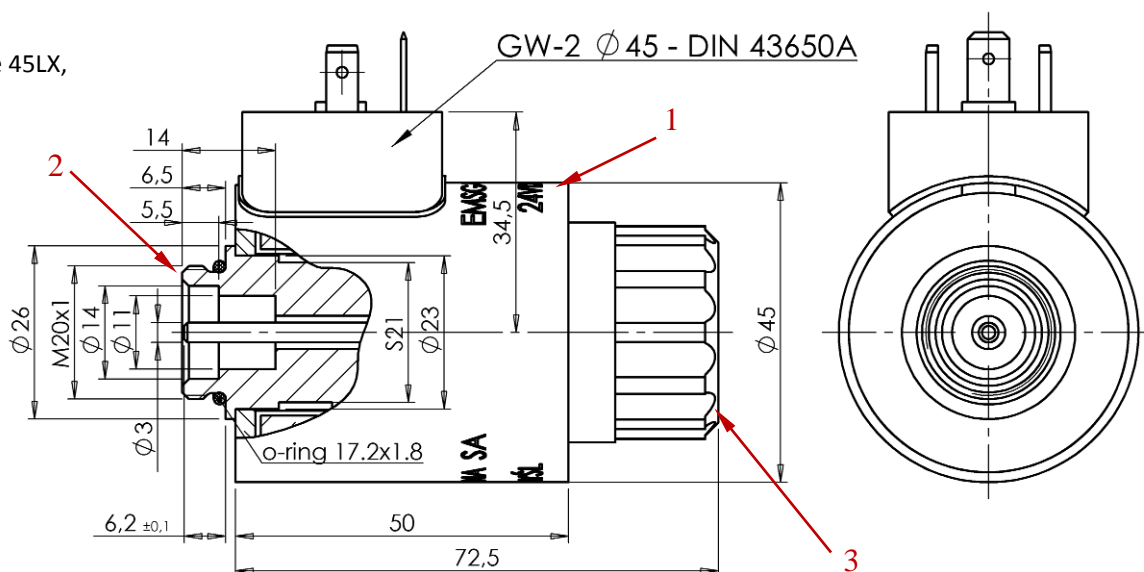
$F=f(s)$   
 $I_p=0,857$  Istab.

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

### AVAILABLE SPARE PARTS:

1. coil 45LX,
2. pole tube complete 45LX,
3. nut 45X.



## SOLENOIDS FOR HYDRAULICS

### EMSG-45XD

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

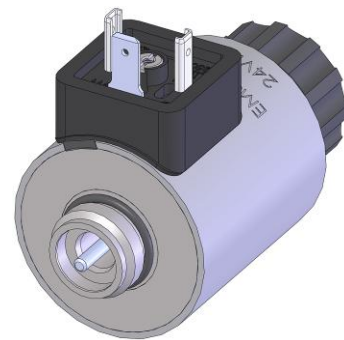
EMSG-45XD is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a manual control button (emergency control).

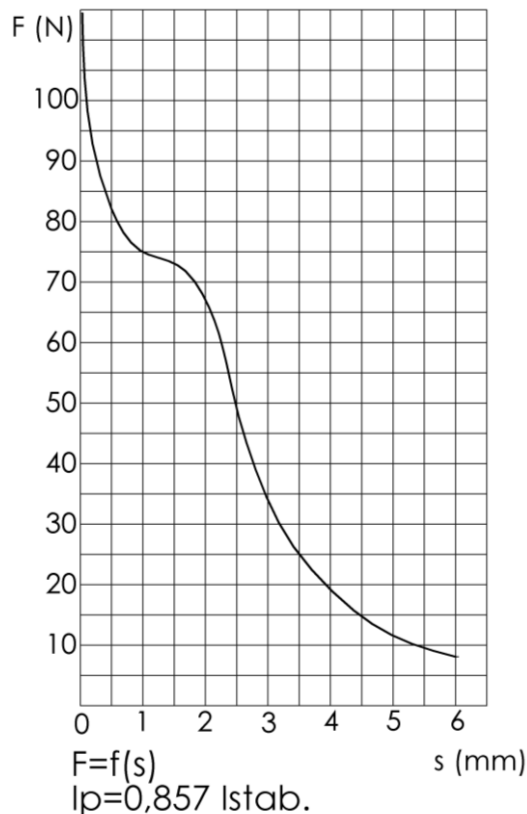
The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



#### SPECIFICATION:

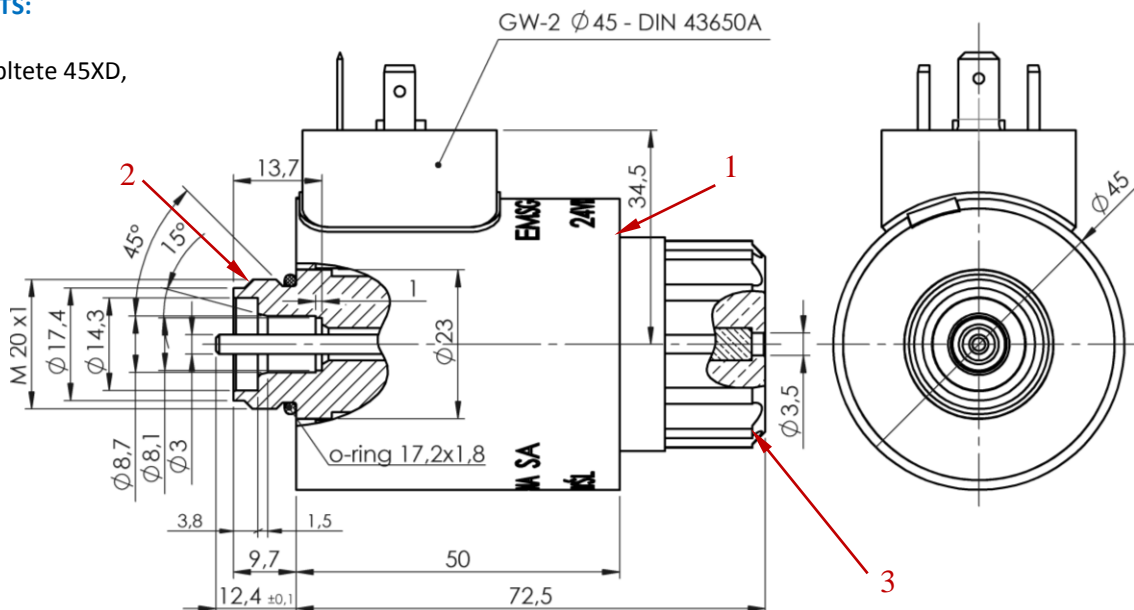
Max power	[W]	35
Jumper stroke	[mm]	6,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	8
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Max oil temperature	[°C]	+70
Voltage configurations	[VDC]	24
Mounting dimensions		M20 x 1
Weight	[kg]	0,55
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 85
Type of electric connector		DIN 43650A



Solenoids may also be custom manufactured according to parameters defined by the Customer.  
The socket plug is available at additional request.

#### AVAILABLE SPARE PARTS:

1. coil 45XD,
2. pole tube complete 45XD,
3. nut 45X.





## SOLENOIDS FOR HYDRAULICS

### EMSG-45FK-ZL

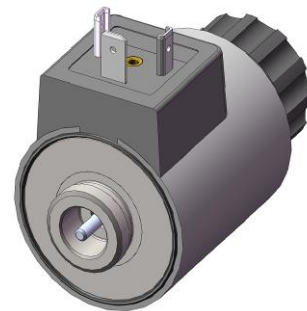
#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

EMSG-45FK-ZL is supplied with direct current and operates in hydraulic oil environment. Mode of operation – “pushing”.

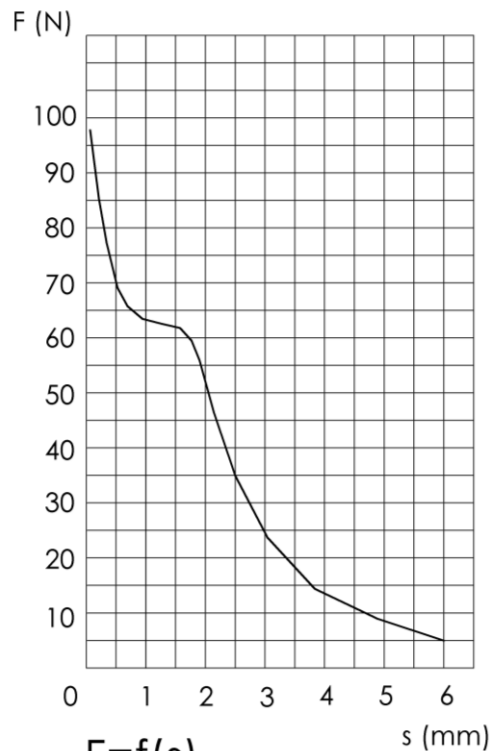
By default, the solenoid is equipped with a manual control button (emergency control). The spool is made of metal, protected against corrosion by electrolytic zinc coating. Complete pole tube is protected against corrosion by electrolytic zinc coating.



IP65

#### SPECIFICATION:

Rated power	[W]	30
Stroke	[mm]	6,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	5
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12;24
Mounting dimensions		M20 x 1
Weight	[kg]	0,53
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 81
Type of electric connector		DIN 43650A



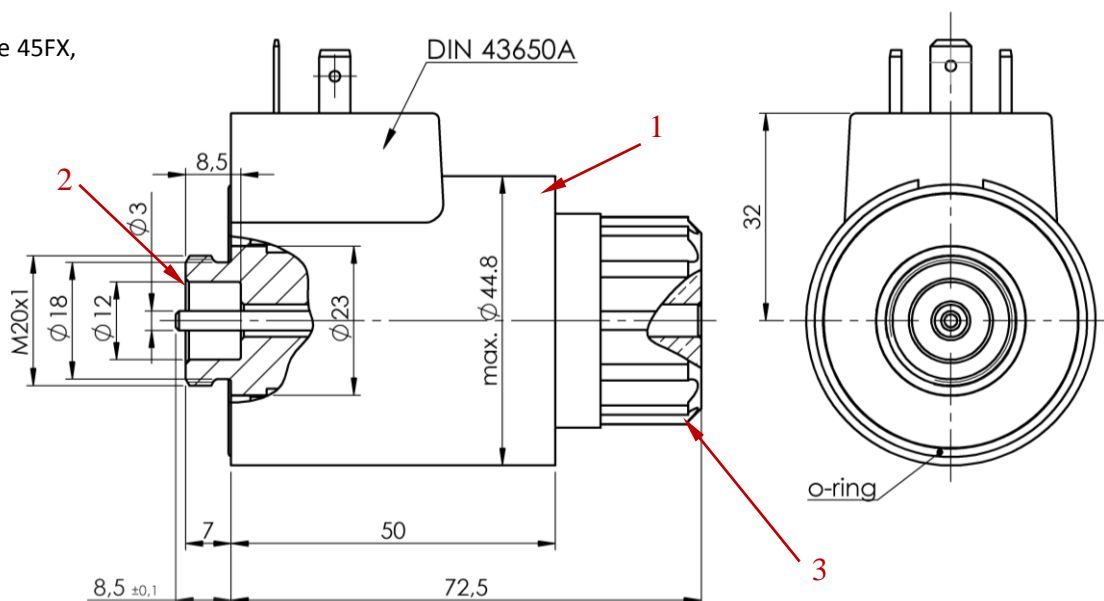
Solenoids may also be custom manufactured according to parameters defined by the Customer. The socket plug is available at additional request.

$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$

#### AVAILABLE SPARE PARTS:

1. coil 45FK-ZL,
2. pole tube complete 45FX,
3. nut 45X.



# SOLENOIDS FOR HYDRAULICS

## EMSG-63X

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

EMSG-63X is supplied with direct current and operates in hydraulic oil environment. Mode of operation – “pushing”.

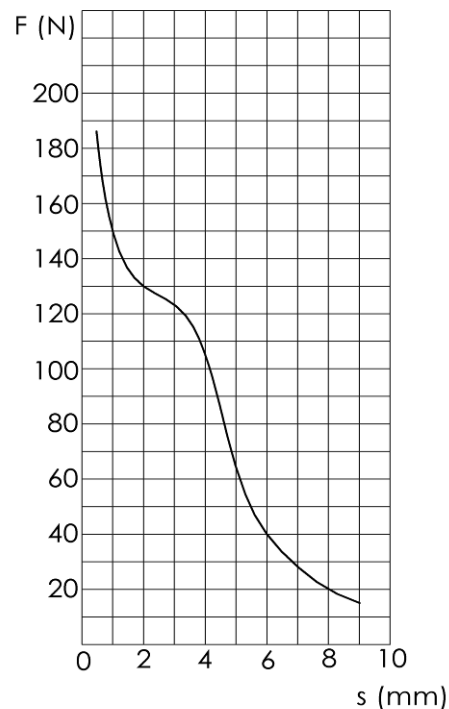
The manufacturing programme includes a wide range of voltage configurations. By default, the solenoid is equipped with a manual control button (emergency control). The spool is made of metal, powder-coated. Complete pole tube is protected against corrosion by electrolytic zinc coating.



CE  
IP65

### SPECIFICATION:

Rated power	[W]	45
Jumper stroke	[mm]	9,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	15
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12;24;42;48;60;96 110;125;206;220
Mounting dimensions		M26 x 1,5
Weight	[kg]	1,5
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø63 x 117
Type of electric connector		DIN 43650A



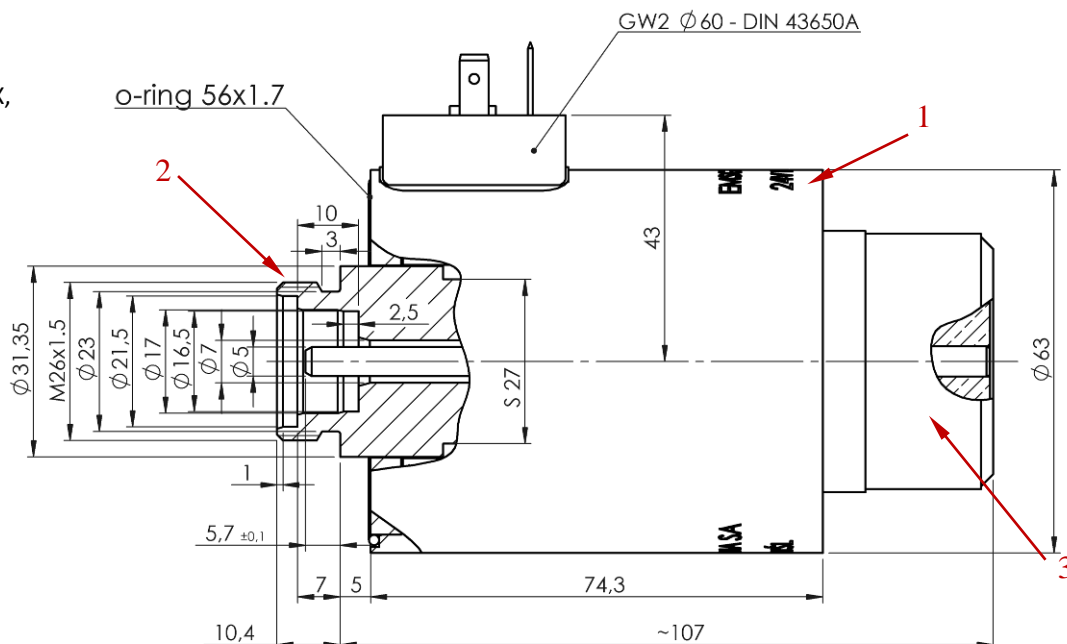
$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$

Solenoids may also be custom manufactured according to parameters defined by the Customer. The socket plug is available at additional request.

### AVAILABLE SPARE PARTS:

1. coil 63X,
2. pole tube complete 63X,
3. nut 63X.



# SOLENOIDS FOR HYDRAULICS

## EMSG-63FK-ZL

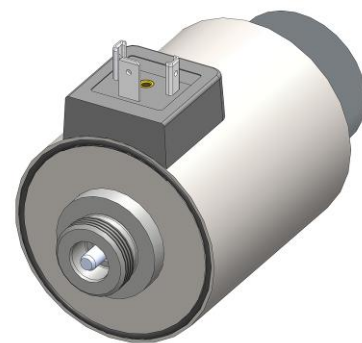
### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

EMSG-63FK-ZL is supplied with direct current and operates in hydraulic oil environment. Mode of operation – “pushing”.

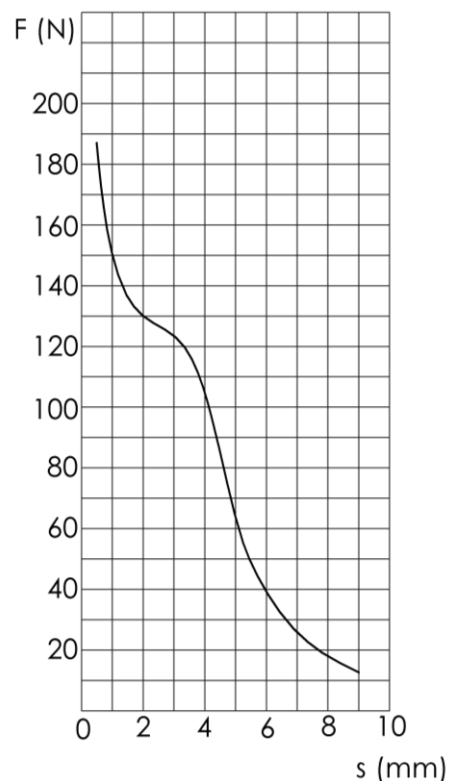
By default, the solenoid is equipped with a manual control button (emergency control). The spool is made of metal, protected against corrosion by electrolytic zinc coating. Complete pole tube is protected against corrosion by electrolytic zinc coating.



IP65

### SPECIFICATION:

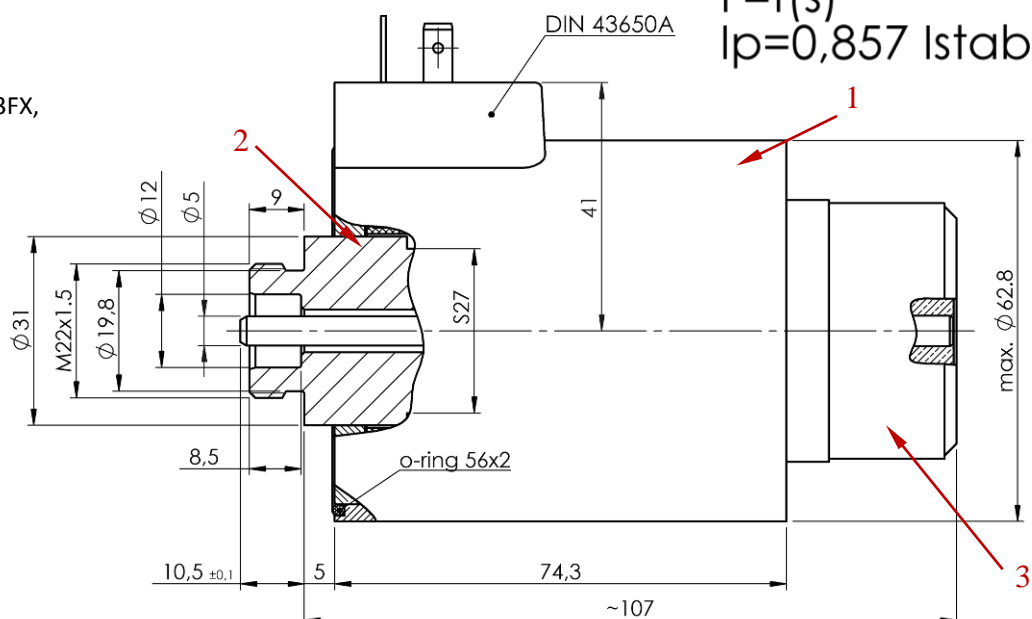
Rated power	[W]	45
Stroke	[mm]	9,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	12
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12;24
Mounting dimensions		M22 x 1,5
Weight	[kg]	1,6
Coil opening diameter	[mm]	Ø 31
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø63 x 117
Type of electric connector		DIN 43650A



Solenoids may also be custom manufactured according to parameters defined by the Customer. The socket plug is available at additional request.

### AVAILABLE SPARE PARTS:

1. coil 63FK-ZL,
2. pole tube complete 63FX,
3. nut 63X.





# SOLENOIDS FOR HYDRAULICS

## EMS-63X

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### OPIS TECHNICZNY:

#### TECHNICAL DESCRIPTION:

EMS-63X is supplied with direct current and operates in hydraulic oil environment.

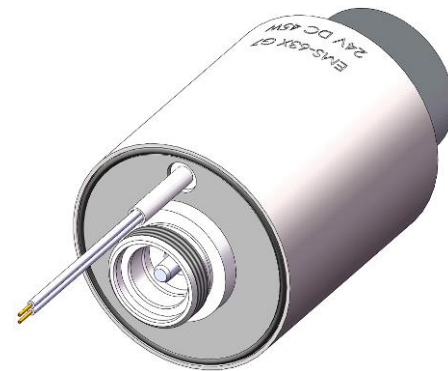
Mode of operation – “pushing”.

By default, the solenoid is equipped with a manual control button (emergency control).

They do not have any power supply connector – power cables are lead out through the opening from the distributor side.

The spool is made of metal, powder-coated.

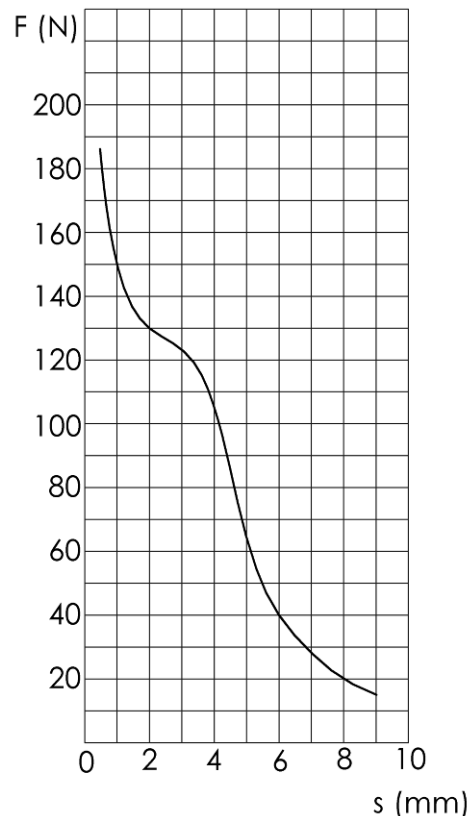
Complete pole tube is protected against corrosion by electrolytic zinc coating.



IP65

### SPECIFICATION:

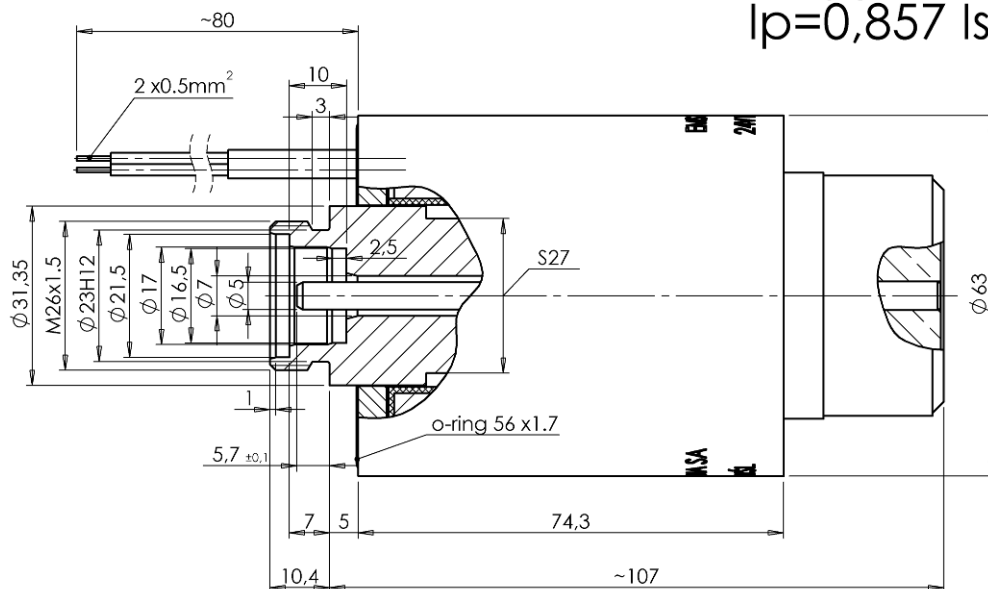
Rated power	[W]	45
Stroke	[mm]	9,0
Work time	[%] ED	100
Type of duty		pushing
Working environment		oil
Start force	[N]	15
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12;24
Mounting dimensions		M26 x 1,5
Weight	[kg]	1,5
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø63 x 107
Type of electric connector		lead wires



Solenoids may also be custom manufactured according to parameters defined by the Customer.

$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$



## SOLENOIDS FOR HYDRAULICS

### EMSG-37

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

EMSG-37 is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

The manufacturing programme includes a wide range of voltage configurations.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of plastic (for 206VDC version – metal spool).

Complete pole tube is protected against corrosion by electrolytic zinc coating.



**CE**  
**IP65**

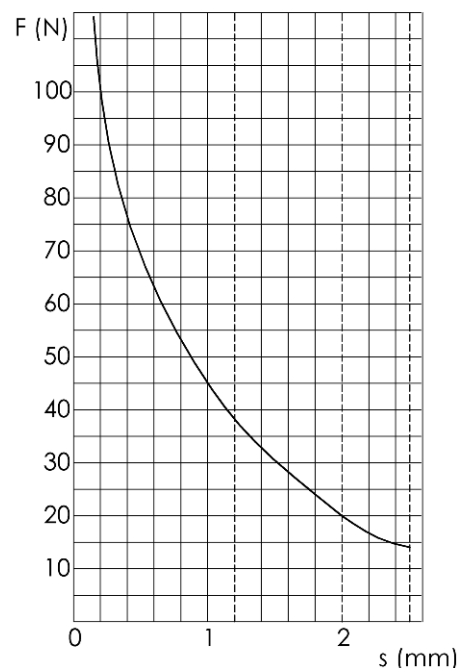
#### SPECIFICATION:

Rated power	[W]	26		
Stroke	[mm]	1,2	2,0	2,5
Work time	[%] ED	100		
Start force	[N]	37	20	14
Max working oil pressure	[MPa]	21		
Max ambient temperature	[°C]	+50		
Voltage configurations	[VDC]	12; 24; 96; 110; 206		
Mounting dimensions		M22 x 1,5		
Weight	[kg]	0,35		
Coil opening diameter	[mm]	Ø 16		
Coil length	[mm]	50		
Overall dimensions	[mm]	Ø36 x 84*		
Type of electric connector		DIN 43650A		

\* for 206VDC version - Ø37 x 84

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

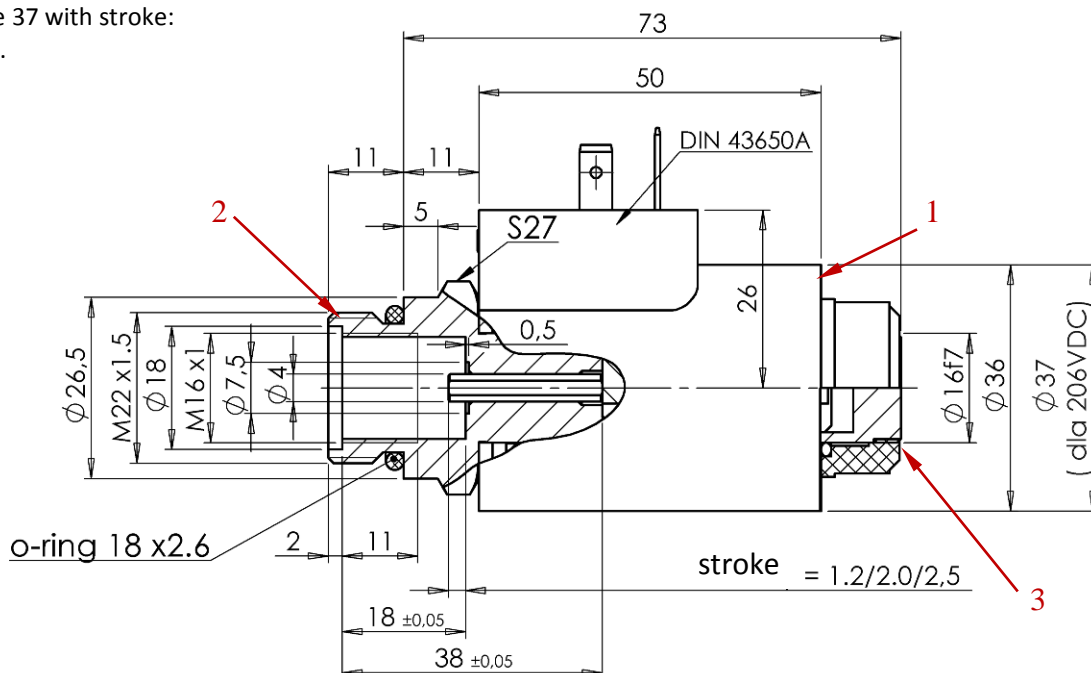


$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$

#### AVAILABLE SPARE PARTS:

1. coil 37,
2. pole tube complete 37 with stroke:  
1,2; 2,0 or 2,5 mm.
3. nut 37.



# SOLENOIDS FOR HYDRAULICS

## EMSG-37BM

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

EMSG-37BM is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

The manufacturing programme includes a wide range of voltage configurations.

By default, the solenoid is equipped with a manual control button (emergency control).

The spool is made of plastic (for 206VDC version – metal spool).

Complete pole tube is protected against corrosion by electrolytic zinc coating.



CE  
IP65

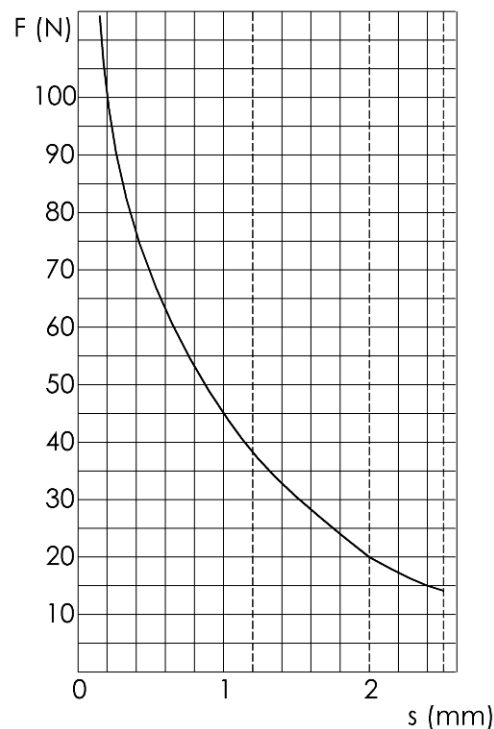
### SPECIFICATION:

Rated power	[W]	26
Stroke	[mm]	1,2 2,0 2,5
Work time	[%] ED	100
Start force	[N]	37 20 14
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12; 24; 96; 110; 206
Mounting dimensions		M22 x 1,5
Weight	[kg]	0,36
Coil opening diameter	[mm]	Ø 16
Coil length	[mm]	50
Overall dimensions	[mm]	Ø36 x 96*
Type of electric connector		DIN 43650A

\* for 206VDC version – Ø37 x 96

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

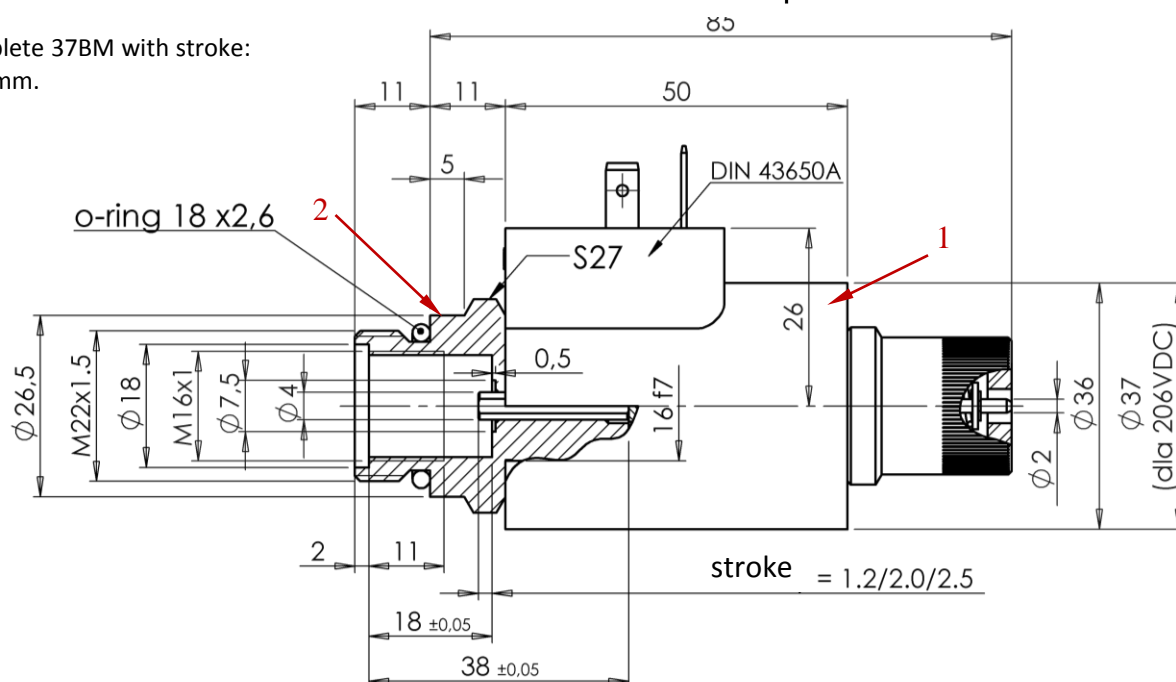


$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$

### AVAILABLE SPARE PARTS:

1. coil 37,
2. pole tube complete 37BM with stroke:  
1,2; 2,0 or 2,5 mm.



## SOLENOIDS FOR HYDRAULICS

### EMSGC-37

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

EMSGC-37 is supplied with direct current and operates in hydraulic oil environment.

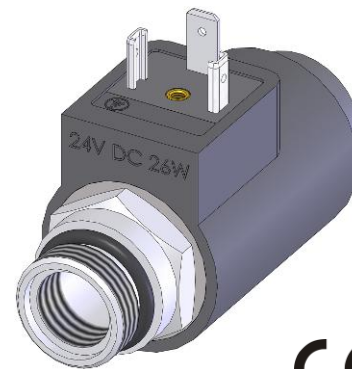
Mode of operation – “pulling”.

The manufacturing programme includes a wide range of voltage configurations.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of plastic (for 206VDC version – metal spool).

Complete pole tube is protected against corrosion by electrolytic zinc coating.

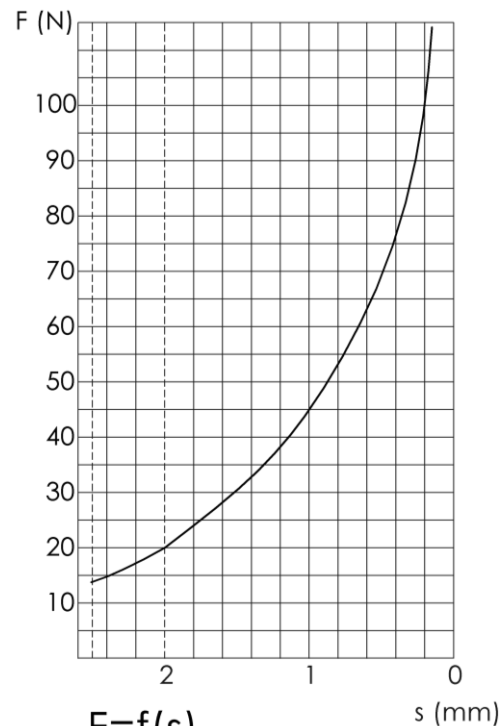


CE  
IP65

#### SPECIFICATION:

Rated power	[W]	26
Stroke	[mm]	2,0   2,5
Work time	[%] ED	100
Start force	[N]	20   14
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12; 24; 96; 110; 206
Mounting dimensions		M22 x 1,5
Weight	[kg]	0,35
Coil opening diameter	[mm]	Ø 16
Coil length	[mm]	50
Overall dimensions	[mm]	Ø36 x 84 *
Type of electric connector		DIN 43650A

\* for 206VDC version – Ø37 x 84



$$F=f(s)$$

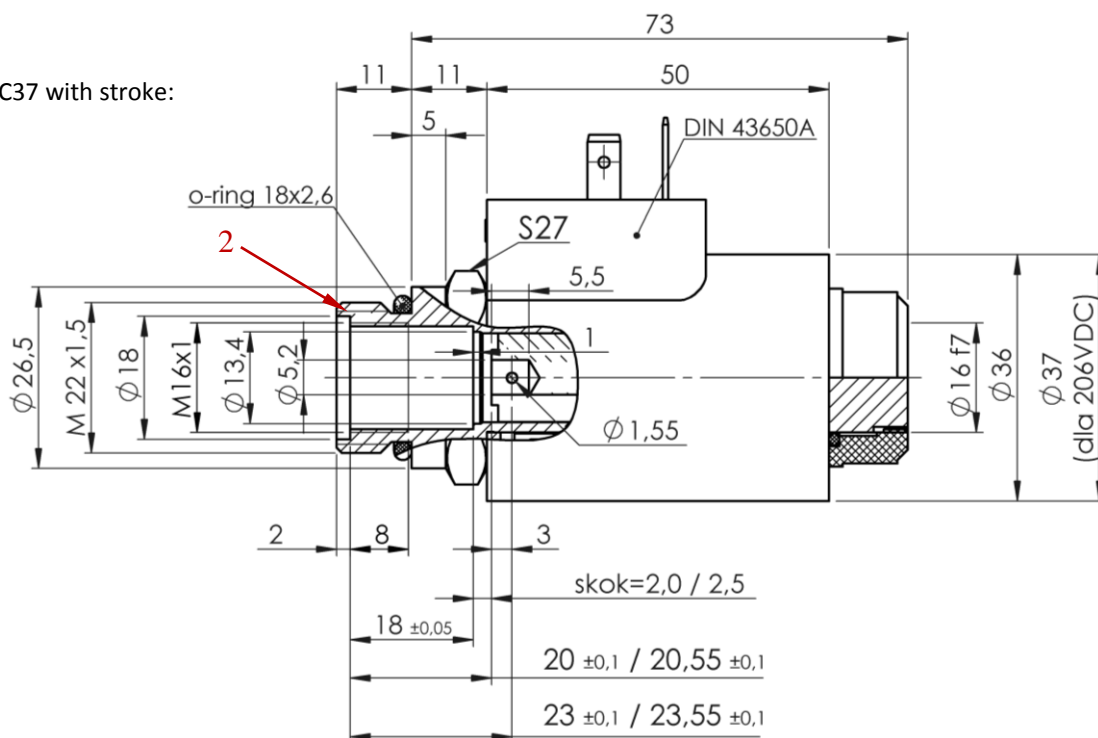
$$I_p=0,857 \text{ Istab.}$$

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

#### AVAILABLE SPARE PARTS:

1. coil 37,
2. pole tube complete C37 with stroke: 2,0 or 2,5 mm.



# SOLENOIDS FOR HYDRAULICS

## EMSGC-36

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

EMSGC-36 is supplied with direct current and operates in hydraulic oil environment.

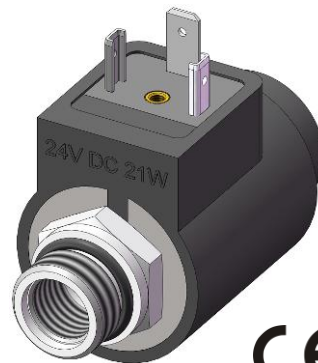
Mode of operation – “pulling”.

The manufacturing programme includes a wide range of voltage configurations.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of plastic.

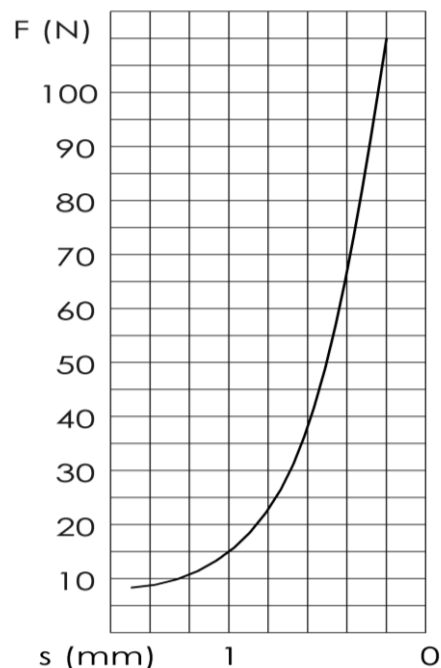
Complete pole tube is protected against corrosion by electrolytic zinc coating.



CE  
IP65

### SPECIFICATION:

Rated power	[W]	21
Stroke	[mm]	1,5
Work time	[%] ED	100
Start force	[N]	8
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12; 24; 196
Mounting dimensions		M18 x 1,5
Weight	[kg]	0,3
Coil opening diameter	[mm]	Ø 13
Coil length	[mm]	41
Overall dimensions	[mm]	Ø36 x 70
Type of electric connector		DIN 43650A

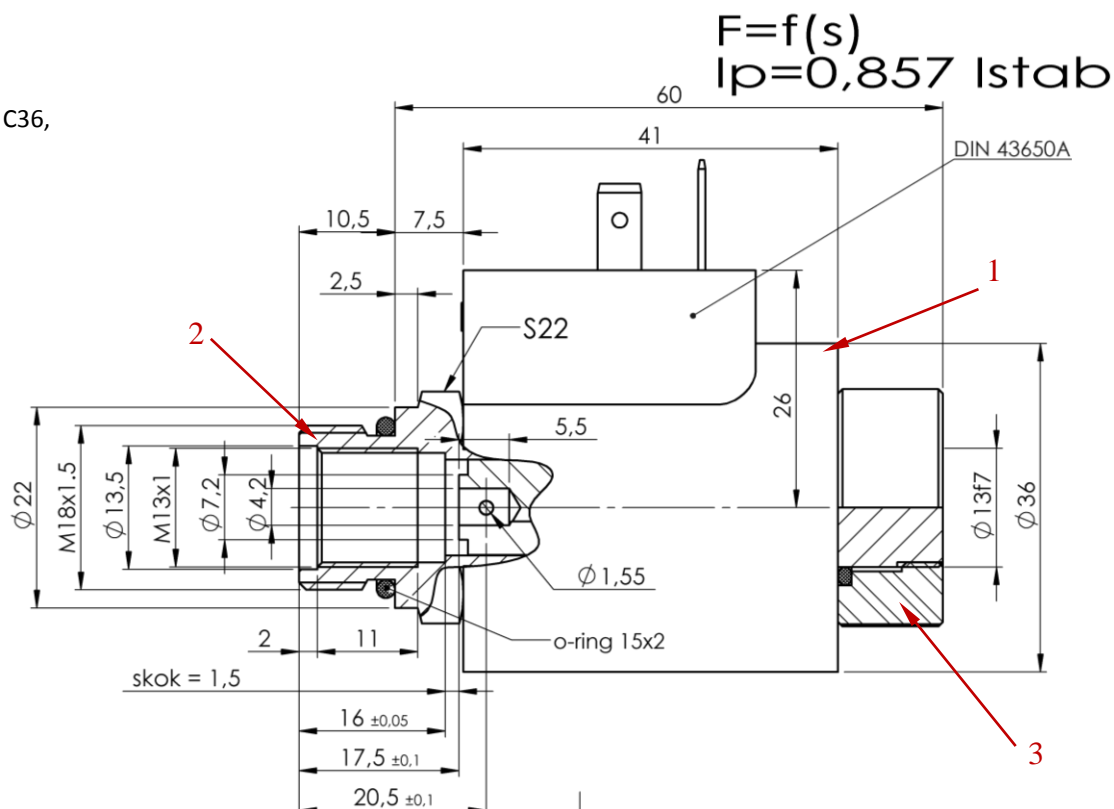


Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

### AVAILABLE SPARE PARTS:

1. coil 36,
2. Pole tube complete C36,
3. nut 36.





# SOLENOIDS FOR HYDRAULICS

## 3EMSG-37

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

3EMSG-37 is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pulling-pushing”.

The manufacturing programme includes a wide range of voltage configurations.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of plastic (for 206VDC version – metal spool).

Complete pole tube is protected against corrosion by electrolytic zinc coating.



CE  
IP65

### SPECIFICATION:

Rated power	[W]	26 (A,B)
Stroke	[mm]	2,0+2,0
Work time	[%] ED	100
Start force	[N]	18 (A,B)
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12; 24; 96; 110; 206
Mounting dimensions		M22x1,5 / M16x1
Weight	[kg]	0,62
Coil opening diameter	[mm]	Ø 16
Coil length (single)	[mm]	50
Overall dimensions	[mm]	Ø 36 x 133,5 *
Type of electric connector		DIN 43650A

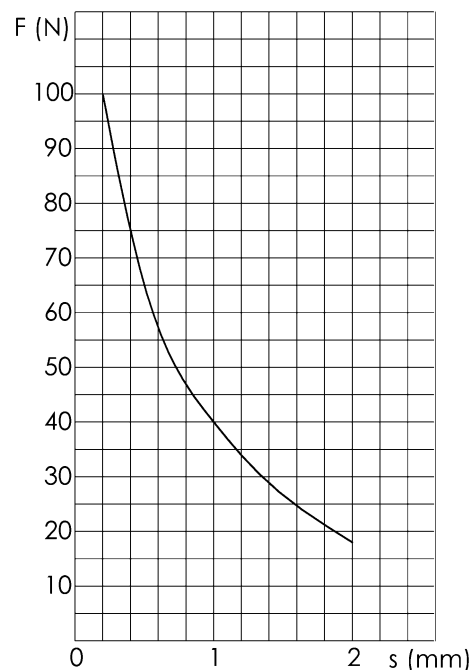
\* for 206VDC version – Ø37 x 133.5

Solenoids may also be custom manufactured according to parameters defined by the Customer.

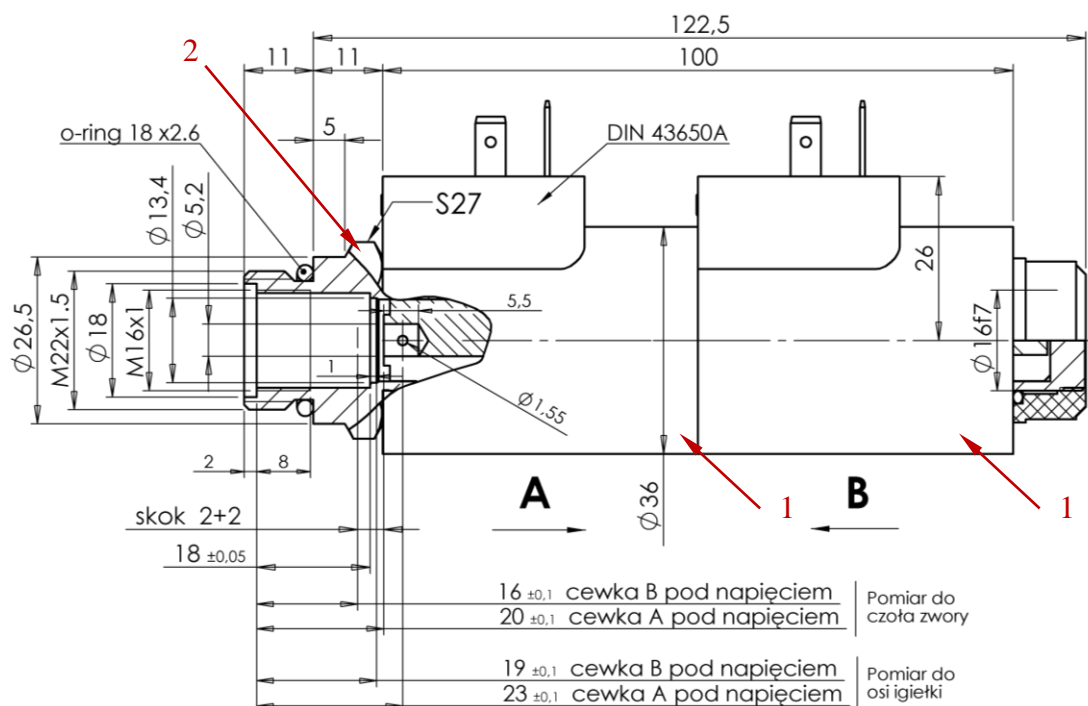
The socket plug is available at additional request.

### AVAILABLE SPARE PARTS:

- coil 37,
- pole tube complete 3EMSG-37.



$F=f(s)$  - A, B  
 $I_p=0,857$  Istab.



# SOLENOIDS FOR HYDRAULICS

## 3EMSG-37B

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

3EMSG-37B is supplied with direct current and operates in hydraulic oil environment.

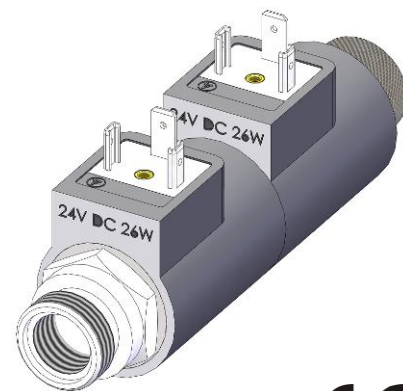
Mode of operation – “pulling-pushing”.

The manufacturing programme includes a wide range of voltage configurations.

By default, the solenoid is equipped with a manual control button (emergency control).

The spool is made of plastic (for 206VDC version – metal spool).

Complete pole tube is protected against corrosion by electrolytic zinc coating.



**CE**  
**IP65**

### SPECIFICATION:

Rated power	[W]	26 (A,B)
Stroke	[mm]	2,0+2,0
Work time	[%] ED	100
Start force	[N]	33 (A,B)
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	12; 24; 96; 110; 206
Mounting dimensions		7/8"-14UNF-2A
Weight	[kg]	0,62
Coil opening diameter	[mm]	Ø 16
Coil length (single)	[mm]	50
Overall dimensions	[mm]	Ø 36 x 138 *
Type of electric connector		DIN 43650A

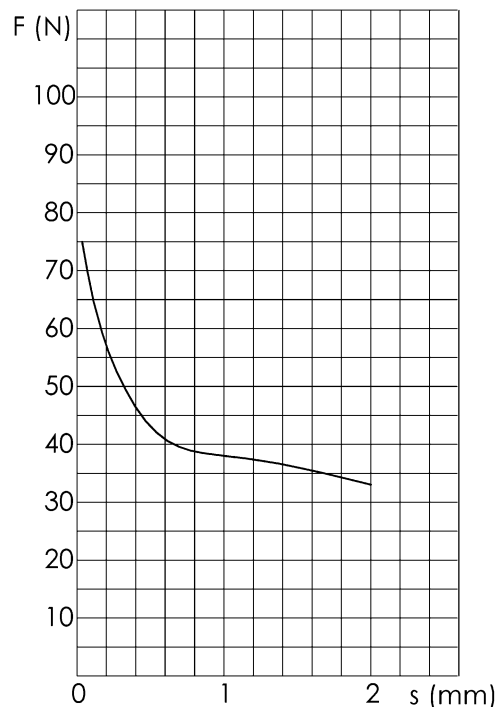
\* for 206VDC version - Ø37 x 138

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

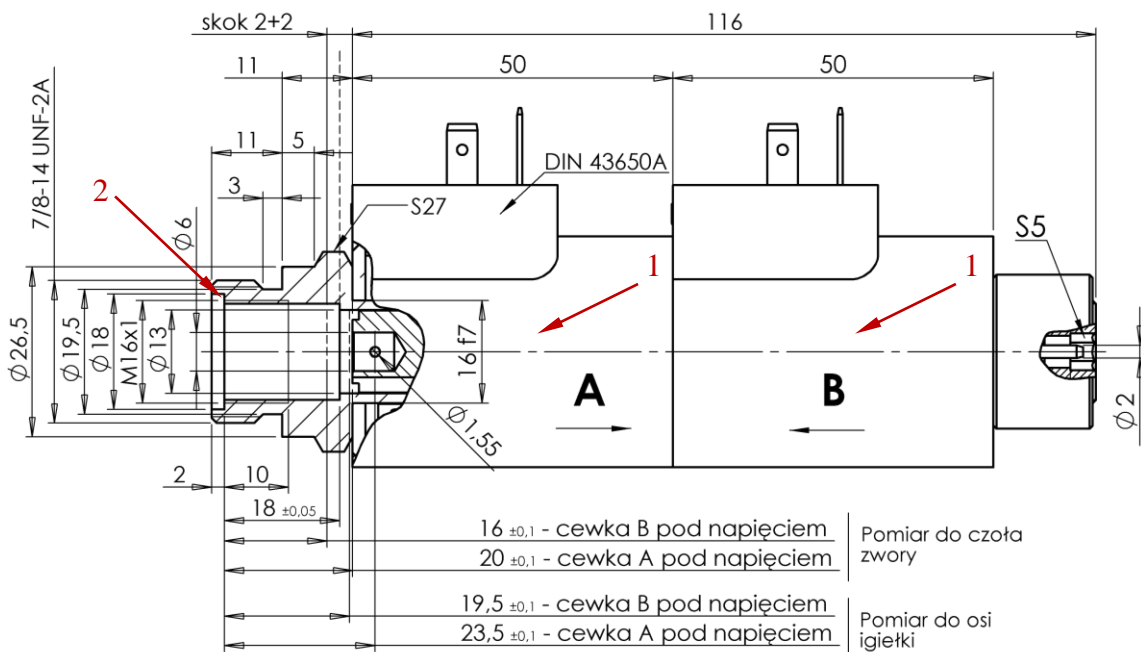
### AVAILABLE SPARE PARTS:

1. coil 37,
2. pole tube complete 3EMSG-37B.



$$F=f(s) - A, B$$

$$I_p=0,857 \text{ Istab.}$$



## SOLENOIDS FOR HYDRAULICS

### ESB-8,6

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

All ESB-series solenoids are supplied with direct current.

The manufacturing programme includes a wide range of voltage configurations.

ESB solenoids are equipped with a manual control button (emergency control) mounted in the cover.

#### MARKING OF SOLENOID TYPES AND VERSIONS:

##### WORKING ENVIRONMENT:

- P – solenoid housing made of plastic,
- M – solenoids operated in hydraulic oil environment,
- F – solenoids operating in dry environment.

##### EQUIPMENT:

- G – by default, equipped with a connection socket.

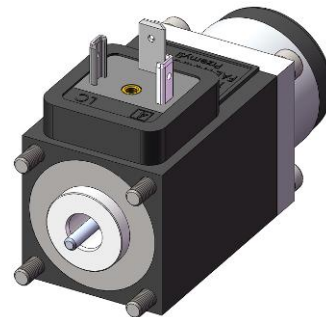
##### SPECIAL VERSIONS:

- S – flanged connection (different way of sealing).

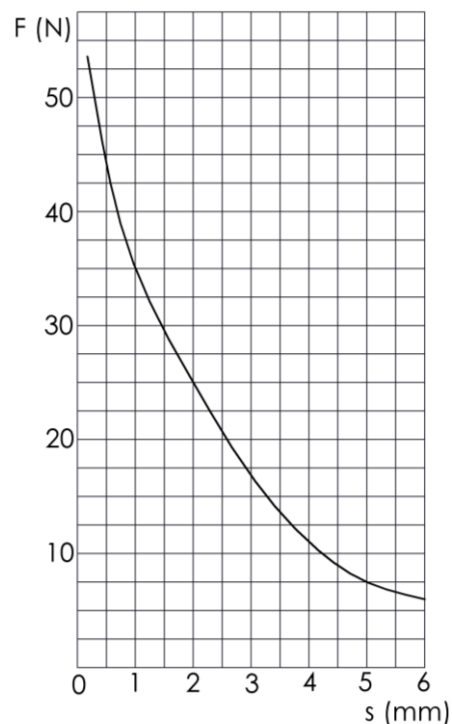
#### SPECIFICATION:

		ESB-8,6PMG	ESB-8,6PMS	ESB-8,6PGF
Rated power	[W]	26	26	26
Stroke	[mm]	6,0	6,0	6,0
Work time	[%] ED	100	100	100
Start force	[N]	6	6	6
Max ambient temperature	[°C]	+50	+50	+50
Max working oil pressure	[MPa]	16	16	dry
Voltage configurations	[VDC]	12; 24; 110	12; 24; 27	12; 24
Weight	[kg]	0,38	0,38	0,38
Type of electric connector		DIN 43650A	DIN 43650A	DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.  
The socket plug is available at additional request.

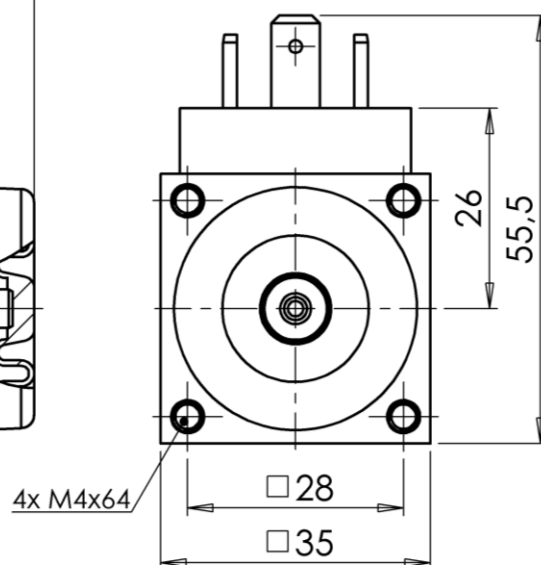
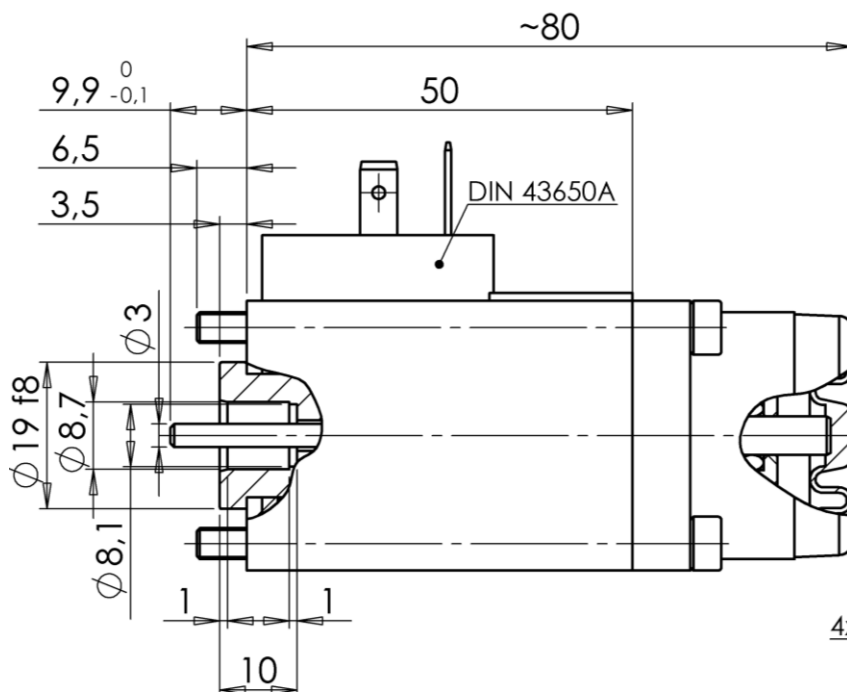


CE  
IP65



$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$



## SOLENOIDS FOR HYDRAULICS

### EZB-12,6

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

Version EZB-12.6MG is operated in hydraulic oil environment and version EZB-12.6GF – in dry environment.

#### TECHNICAL DESCRIPTION:

The ESB-12.6-series solenoids are supplied with **alternate current**.

ESB-12.6 solenoids are equipped with a manual control button (emergency control) mounted in the cover.

#### MARKING OF SOOLENOID TYPES AND VERSIONS:

##### WORKING ENVIRONMENT:

M – solenoids operated in hydraulic oil environment,

F – solenoids operating in dry environment.

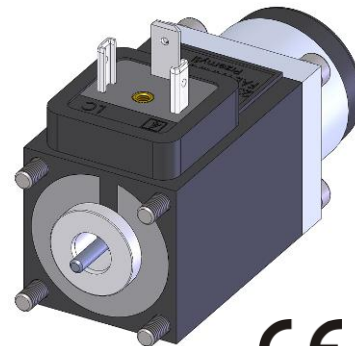
##### EQUIPMENT:

G – by default, equipped with a connection socket.

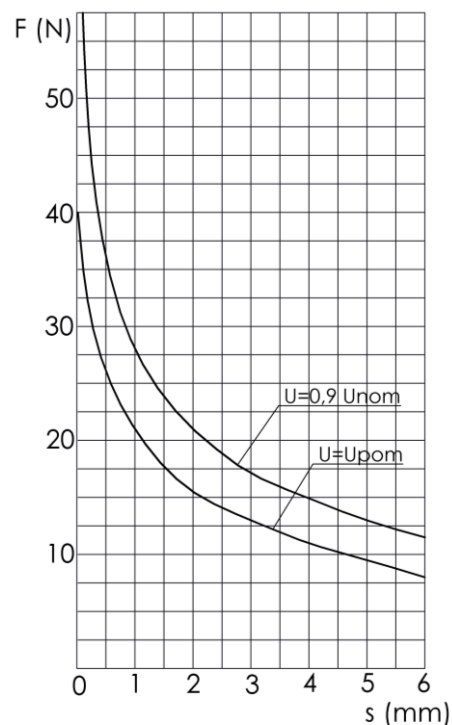
#### SPECIFICATION:

		EZB-12,6MG	EZB-12,6GF
Rated power	[VA]	46	46
Stroke	[mm]	6,0	6,0
Work time	[%] ED	100	100
Start force	[N]	8	8
Max ambient temperature	[°C]	+50	+50
Max working oil pressure	[MPa]	16	oil-free
Voltage configurations	[VAC]	24; 110; 230	24; 230
Weight	[kg]	0,38	0,38
Type of electric connector		DIN 43650A	DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.  
The socket plug is available at additional request.

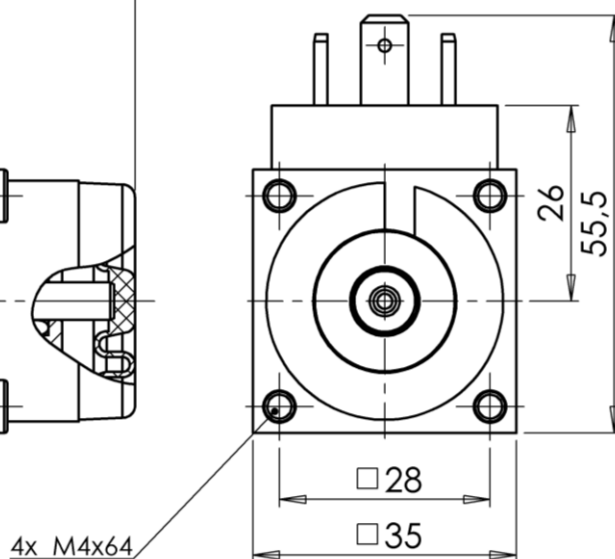
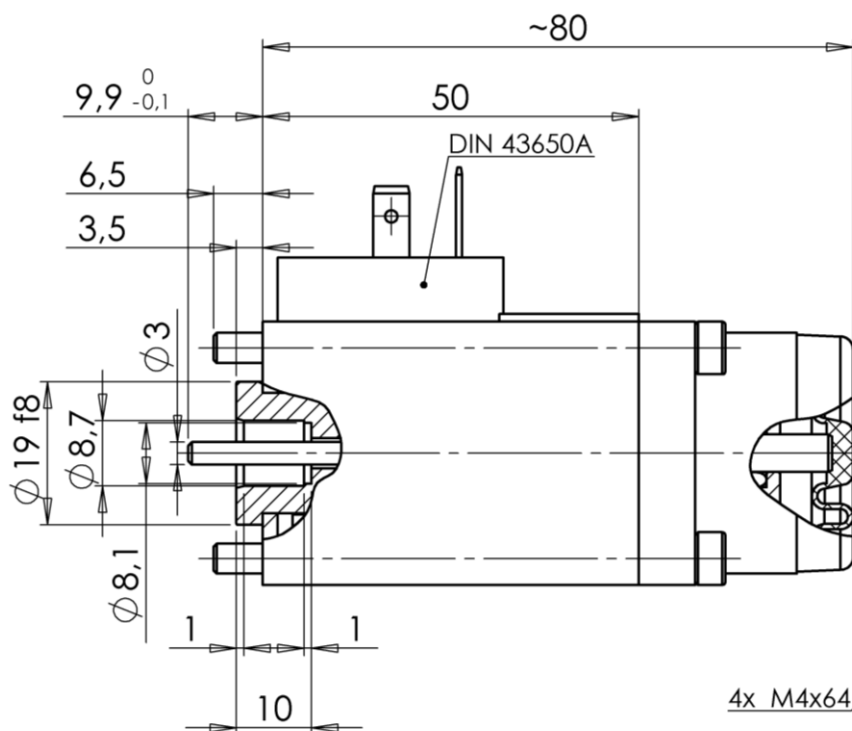


CE  
IP65



$$F=f(s)$$

$$U_{pom} \approx 0,76 U_{nom}$$



# SOLENOIDS FOR HYDRAULICS

## EK-45

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

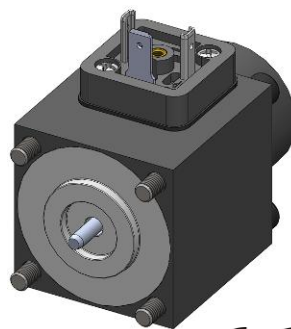
EK-45 is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a manual control button (emergency control).

The spool is made of metal, galvanic blacking-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



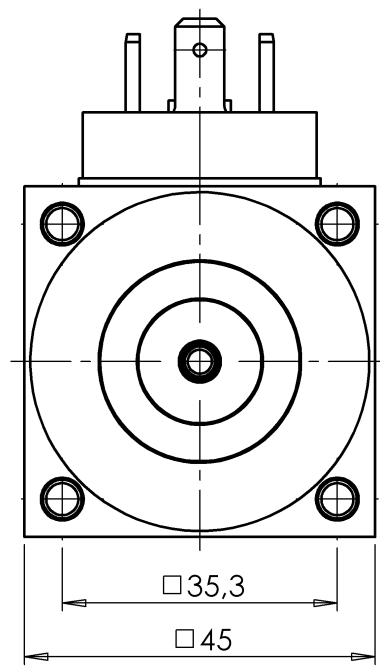
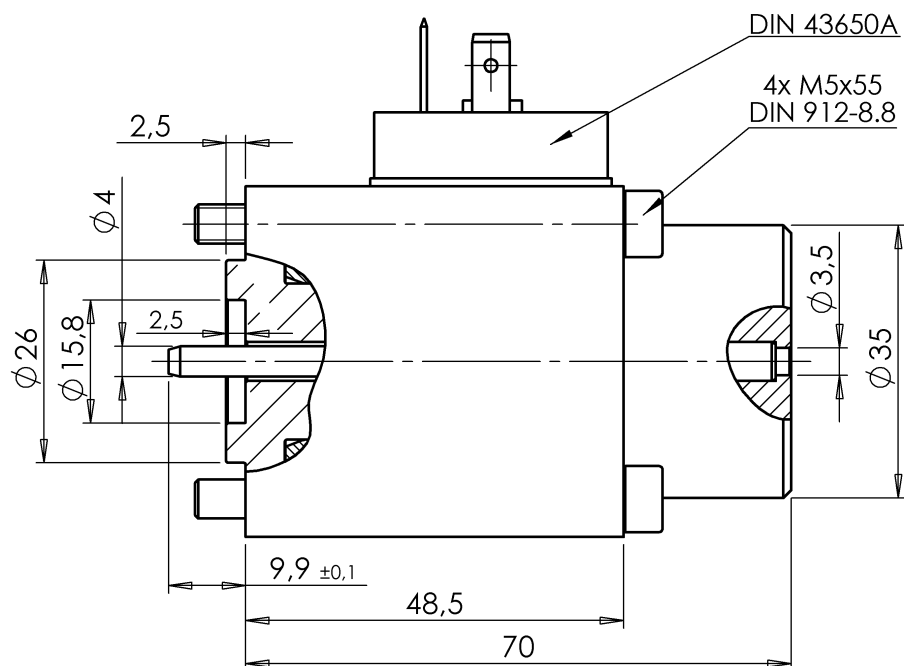
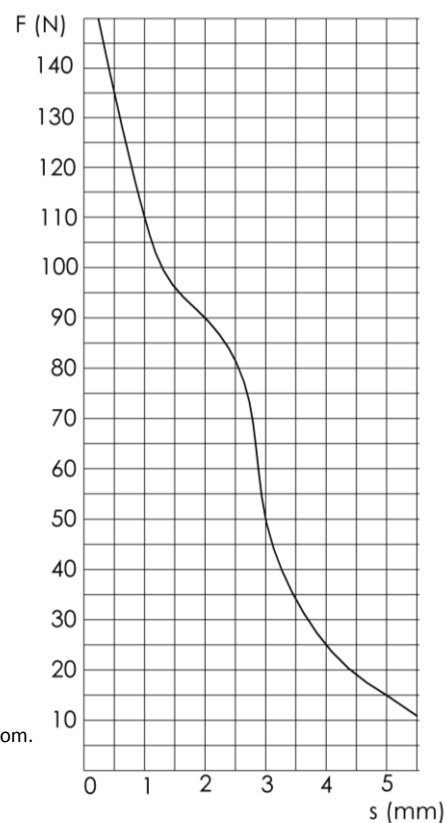
CE  
IP65

### SPECIFICATION:

Stroke	[mm]	5,5
Work time	[%] ED	100
Start force	[N]	10
Max working oil pressure	[bar]	350
Max ambient temperature	[°C]	+50
Rated voltage [VDC]		Nominal current [A]
	12	2,5
	24	1,22
	107	0,32
	110	0,31
	196	0,185
Mounting dimensions	[mm]	# 35,3
Weight	[kg]	0,75
Overall dimensions	[mm]	# 45 x 70
Type of electric connector		DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.





# SOLENOIDS FOR HYDRAULICS

## ESB-10,6MG

### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

ESB-10.6MG is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a manual control button (emergency control).

The spool is made of metal, powder-coated.

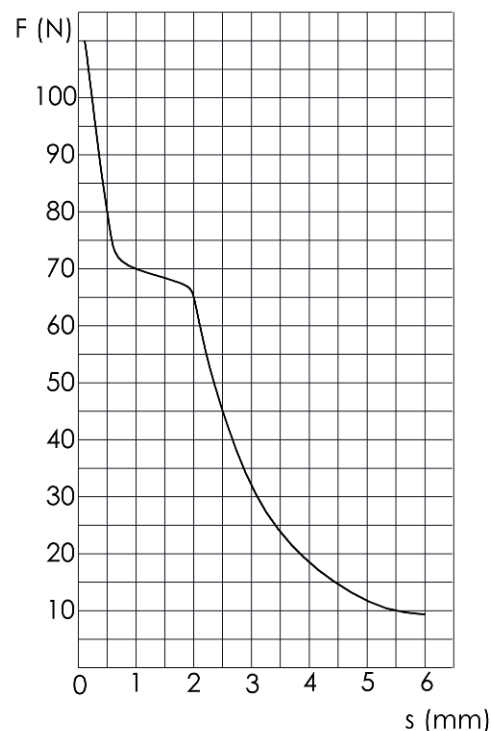
Complete pole tube is protected against corrosion by electrolytic zinc coating.



### SPECIFICATION:

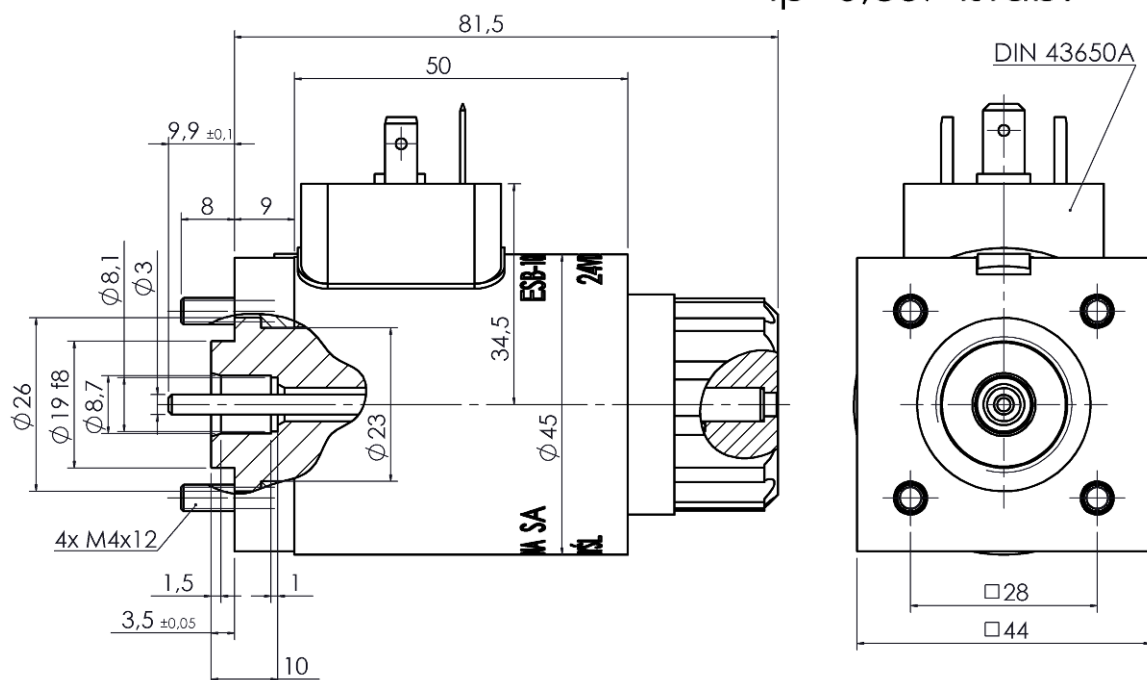
Rated power	[W]	30
Stroke	[mm]	6,0
Work time	[%] ED	100
Start force	[N]	9
Max ambient temperature	[°C]	+50
Max working oil pressure	[MPa]	21
Voltage configurations	[VDC]	12; 24; 110
Weight	[kg]	0,64
Type of electric connector		DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.  
The socket plug is available at additional request.



$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$



## SOLENOIDS FOR HYDRAULICS

### ESB-10,6GW

#### APPLICATION:

Control of hydraulic distributors.

#### TECHNICAL DESCRIPTION:

ESB-10.6GW is supplied with direct current and operates in dry environment.

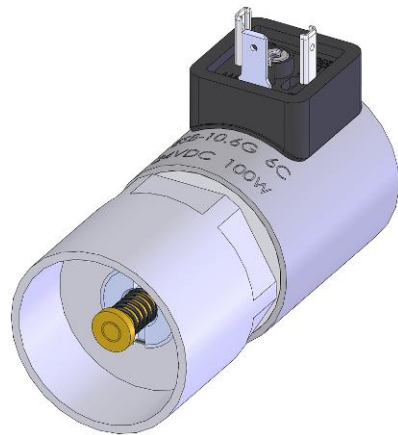
Mode of operation – “pushing”.

The manufacturing programme includes one standard voltage configuration.

By default, the solenoid is equipped with a manual control button (emergency control) of special design (protected).

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

Complete pole tube is protected against corrosion by electrolytic zinc coating.

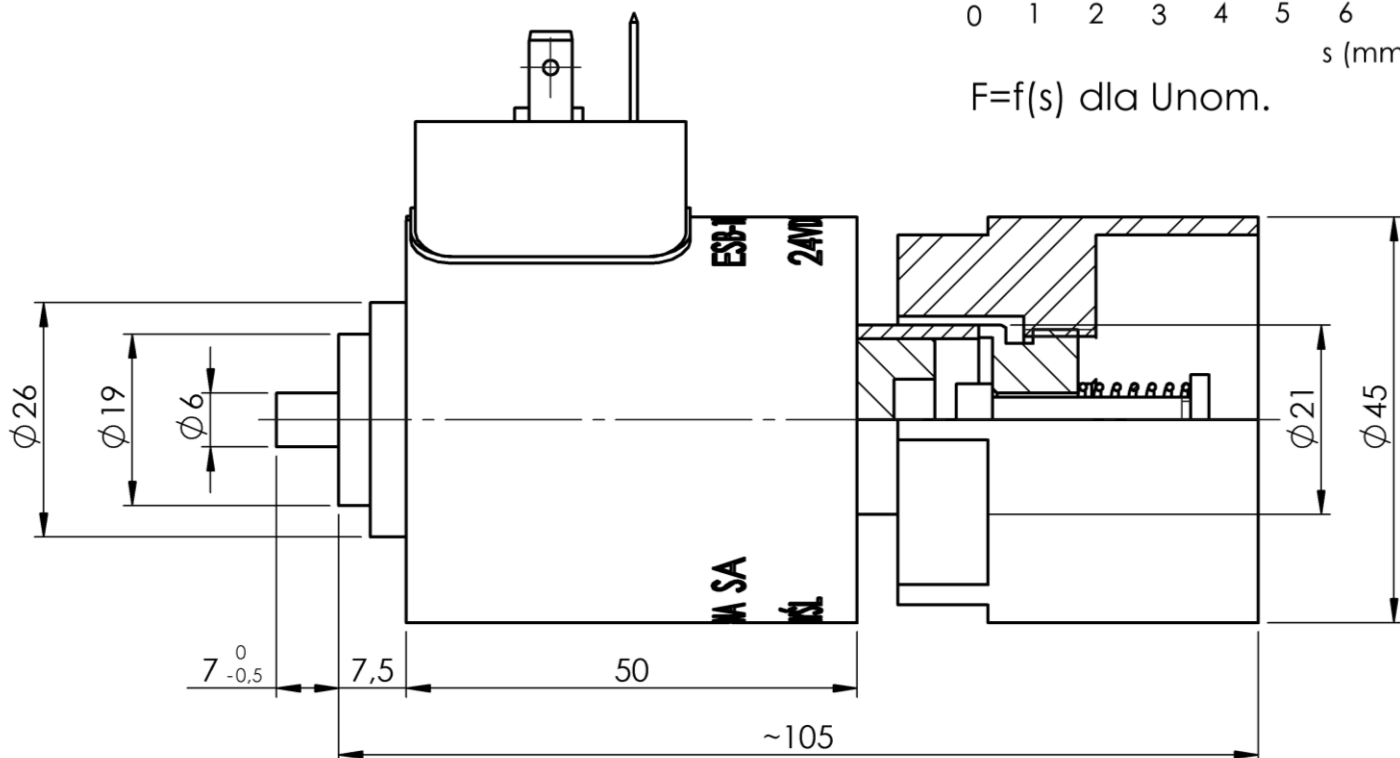
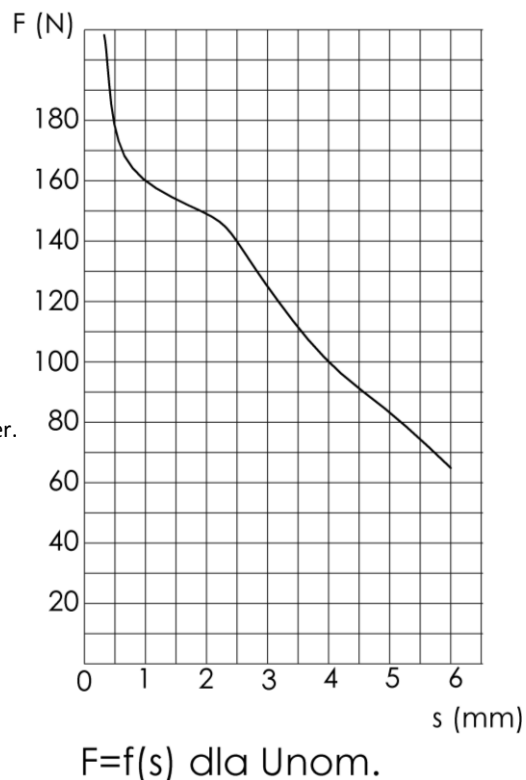


#### SPECIFICATION:

Rated power	[W]	100
Stroke	[mm]	6,0
Work time		shorttime
Start force	[N]	65
Max ambient temperature	[°C]	+50
Working environment		dry
Voltage configurations	[VDC]	24
Weight	[kg]	0,65
Type of electric connector		DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.



## SOLENOIDS FOR HYDRAULICS

### ESG-35,8

#### APPLICATION:

Control of hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

ESG-35.8 is supplied with direct current and operates in dry environment.

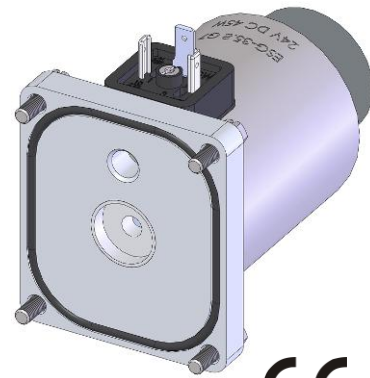
Mode of operation – “pushing”.

The solenoid replaces the former version named ESB-35.8G.

By default, the solenoid is equipped with a manual control button (emergency control).

The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



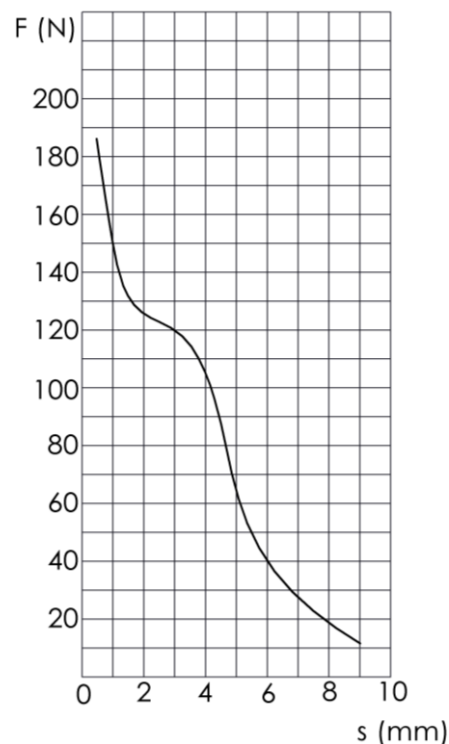
CE  
IP65

#### SPECIFICATION:

Rated power	[W]	45
Stroke	[mm]	9,0
Work time	[%] ED	100
Start force	[N]	12
Voltage configurations	[VDC]	12; 24; 110
Mounting dimensions	[mm]	# 58,7 x 68,2
Weight	[kg]	1,6
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø 63 x 113
Type of electric connector		DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

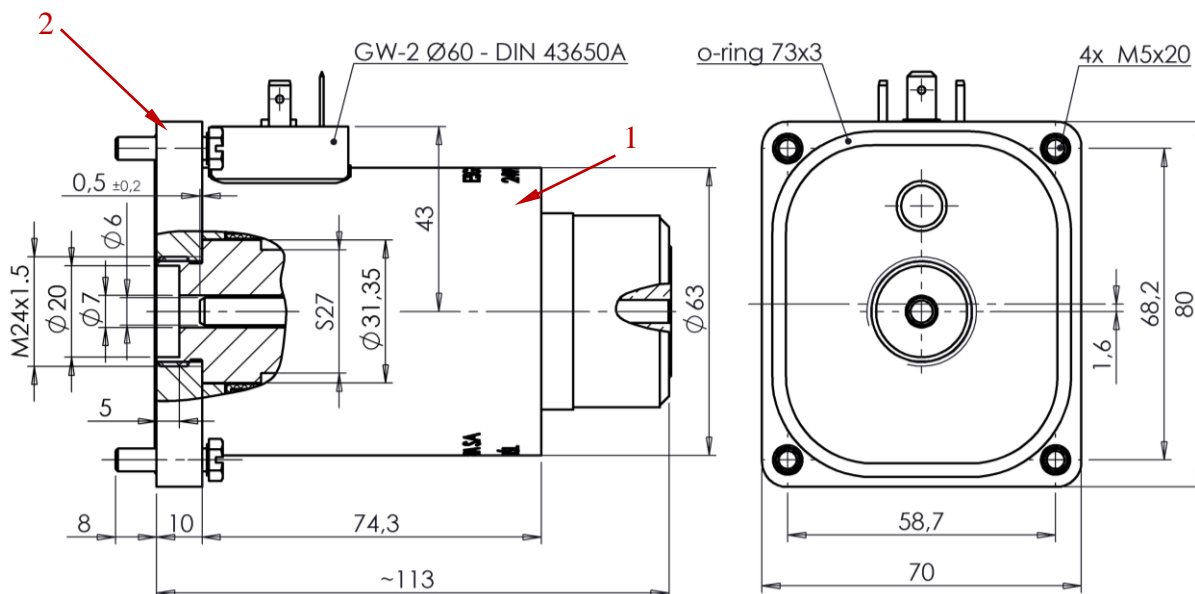


$$F=f(s)$$

$$I_b=0.857 I_{stab.}$$

#### AVAILABLE SPARE PARTS:

1. coil 35,8.
2. holder.



## CONTROL SOLENOIDS

### ESG-35,8GTP

#### APPLICATION:

Control of distributors or oil-free locks.

#### TECHNICAL DESCRIPTION:

ESG-35.8GTP is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

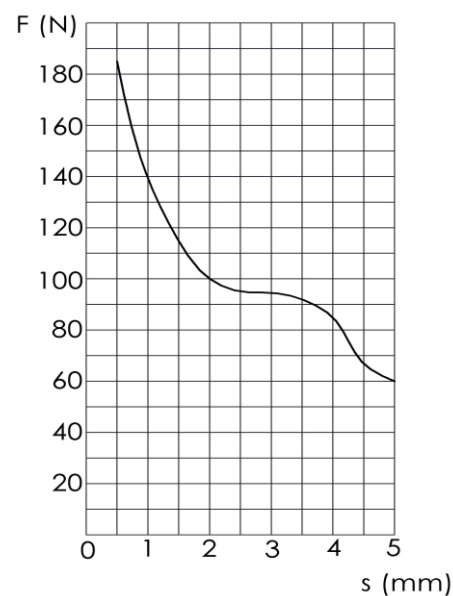
The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



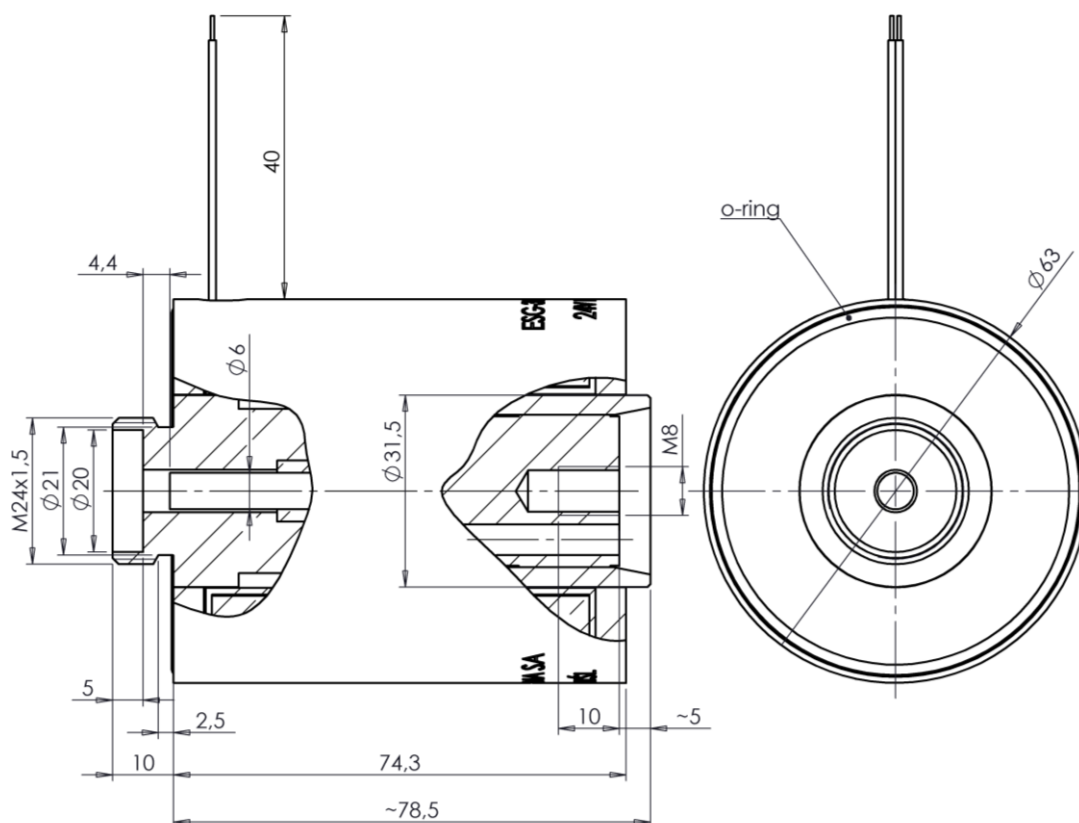
#### SPECIFICATION:

Rated power	[W]	45
Stroke	[mm]	5,0
Work time	[%] ED	100
Start force	[N]	60
Voltage configurations	[VDC]	24
Mounting dimensions		M24 x 1,5
Weight	[kg]	1,4
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø 63 x 88,5
Type of electric connector		loose conductors



$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$



## CONTROL SOLENOIDS

**ESG-35,8GTP2**

### APPLICATION:

Control of distributors or oil-free locks.

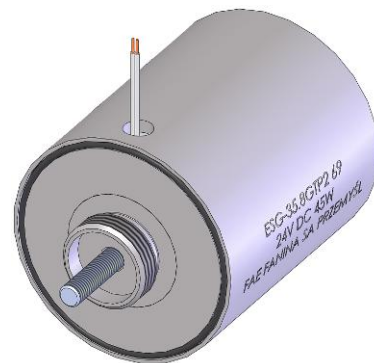
### TECHNICAL DESCRIPTION:

ESG-35.8GTP2 is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

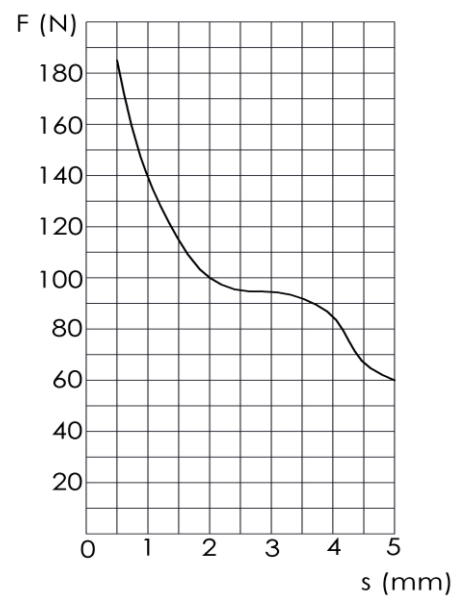
The spool is made of metal, powder-coated.

Complete sleeve is protected against corrosion by electrolytic zinc coating.

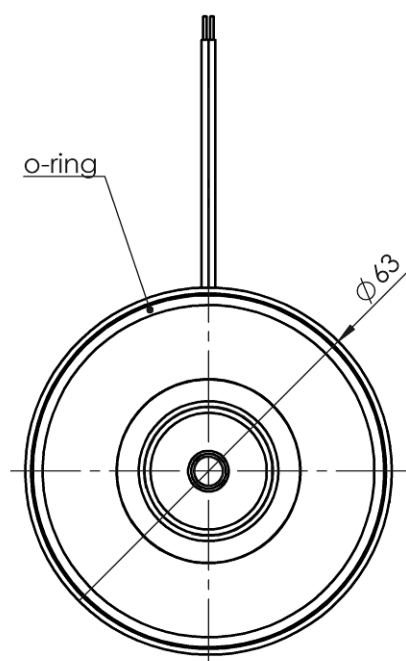
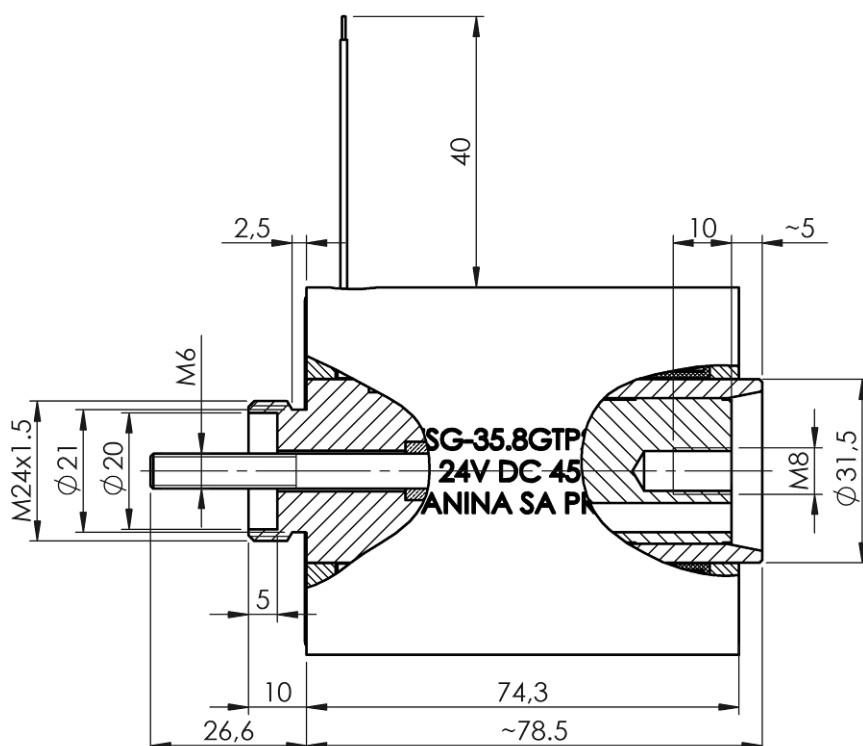


**SPECIFICATION:**

Rated power	[W]	45
Stroke	[mm]	5,0
Work time	[%] ED	100
Start force	[N]	60
Voltage configurations	[VDC]	24
Mounting dimensions		M24 x 1,5
Weight	[kg]	1,4
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	74,3
Overall dimensions	[mm]	Ø 63 x 88,5
Type of electric connector		loose conductors



$F=f(s)$   
 $l_p=0,857$  Istab.





## CONTROL SOLENOIDS

### ESG-35,8GTP2-G

#### APPLICATION:

Control of distributors or oil-free locks.

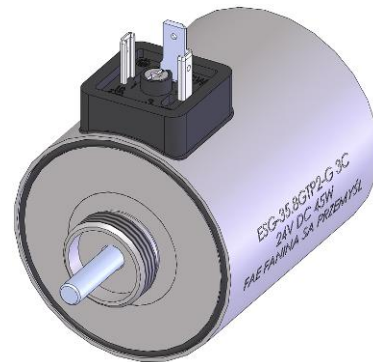
#### TECHNICAL DESCRIPTION:

ESG-35.8GTP2-G is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

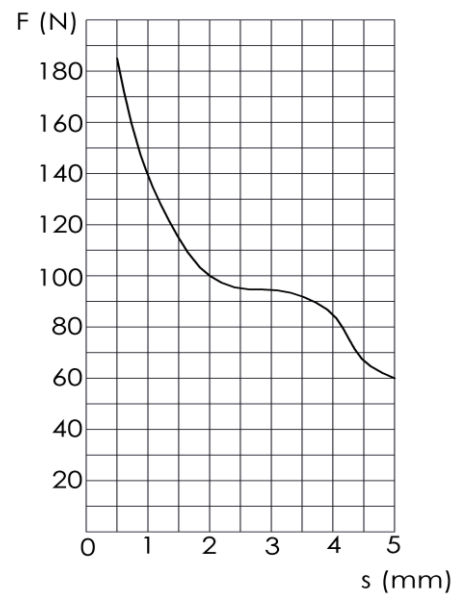
The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



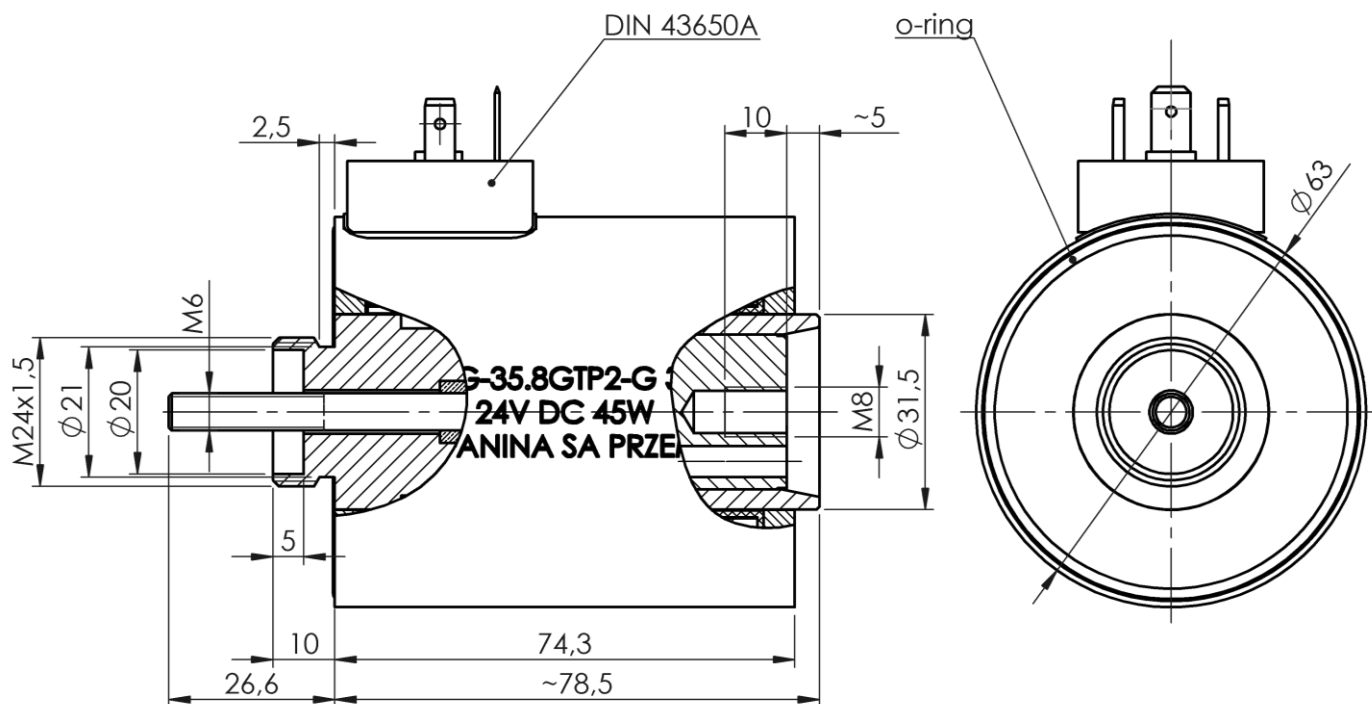
#### SPECIFICATION:

Rated power	[W]	45
Stroke	[mm]	5,0
Work time	[%] ED	100
Start force	[N]	60
Voltage configurations	[VDC]	24
Mounting dimensions		M24 x 1,5
Weight	[kg]	1,4
Coil opening diameter	[mm]	Ø 31,5
Coil length	[mm]	50
Overall dimensions	[mm]	Ø 63 x 88,5
Type of electric connector		DIN 43650A



$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$



## SOLENOIDS FOR MOBILE HYDRAULICS

### EMSG-45XA

#### APPLICATION:

Control of hydraulic distributors in mobile power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

EMSG-45XA is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a Junior Timer mobile electrical connector and manual control button (emergency control).

The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



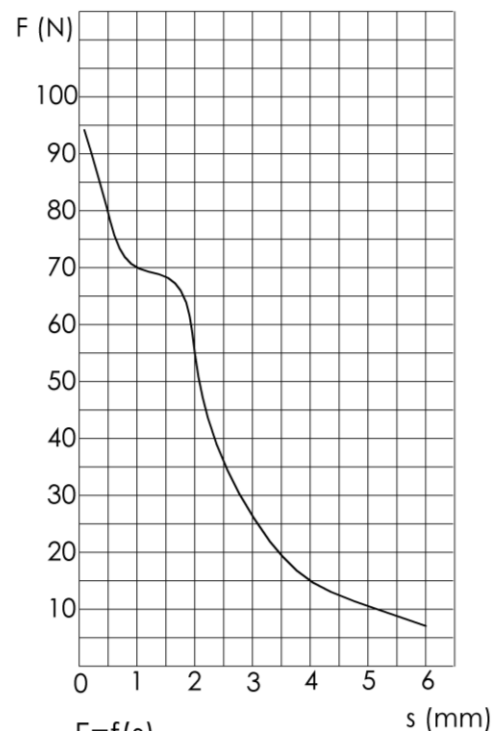
IP65

#### SPECIFICATION:

Rated power	[W]	30
Stroke	[mm]	6,0
Work time	[%] ED	100
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Max oil temperature	[°C]	+70
Voltage configurations	[VDC]	12
Mounting dimensions		M20 x 1
Weight	[kg]	0,56
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 86
Type of electric connector		Junior Timer

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

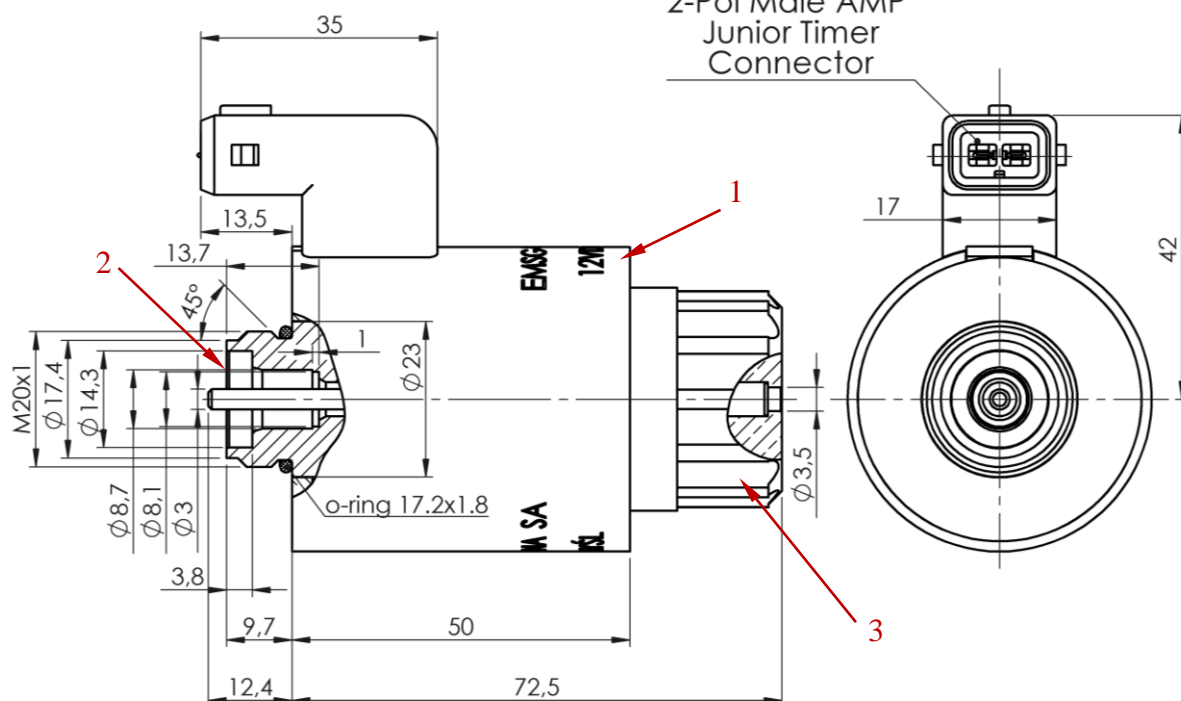


$$F=f(s)$$

$$I_p=0,857 \text{ Istab.}$$

#### AVAILABLE SPARE PARTS:

1. coil 45XA,
2. pole tube complete 45XA,
3. nut 45X.



## SOLENOIDS FOR MOBILE HYDRAULICS

### ESB-10,6MGA

#### APPLICATION:

Control of hydraulic distributors in mobile power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

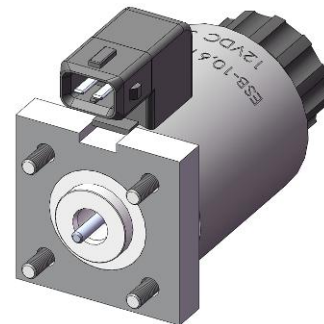
ESB-10.6MGA is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a Junior Timer mobile electrical connector and manual control button (emergency control).

The spool is made of metal, powder-coated.

Complete pole tube is protected against corrosion by electrolytic zinc coating.



IP65

#### SPECIFICATION:

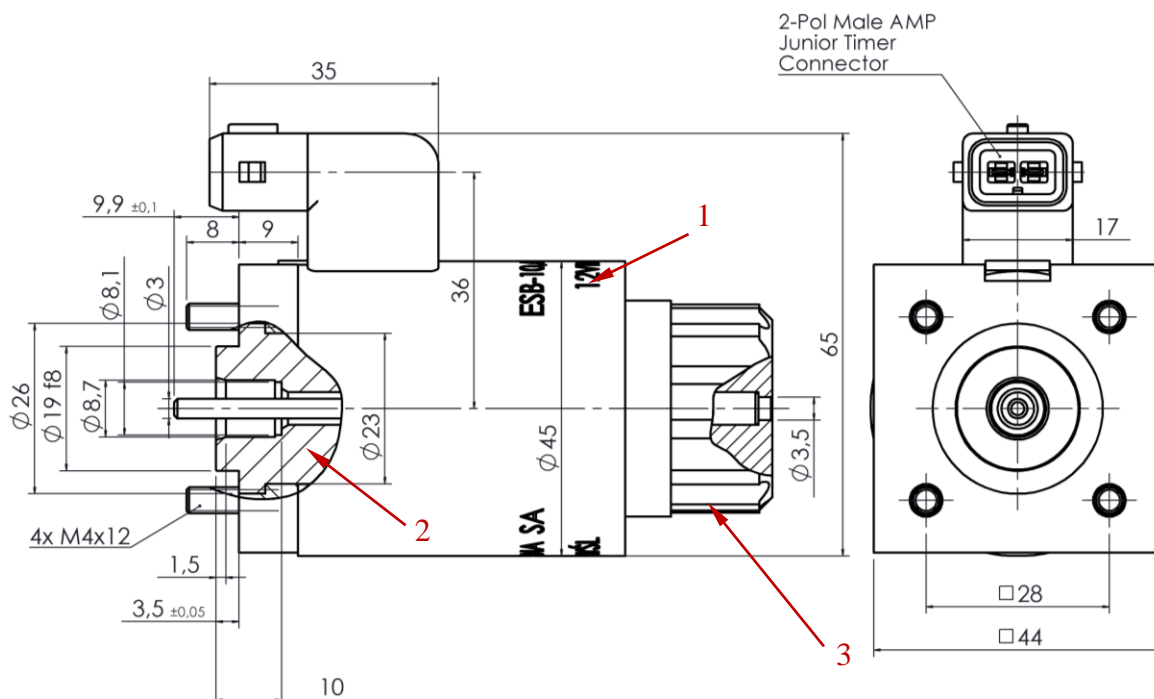
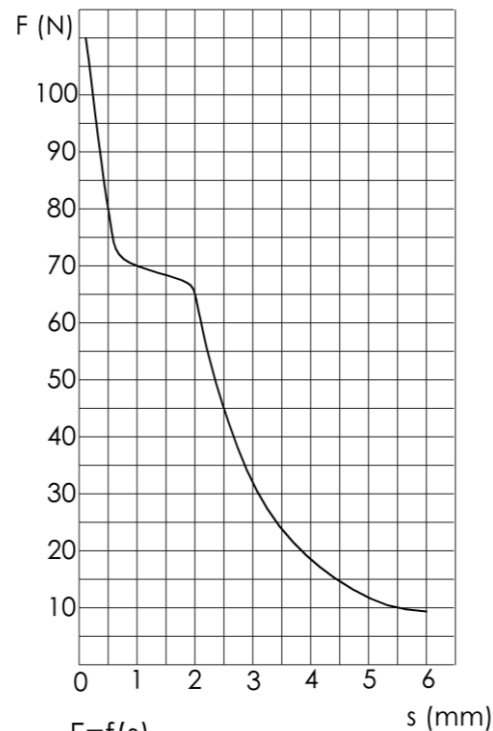
Rated power	[W]	30
Stroke	[mm]	6,0
Work time	[%] ED	100
Max working oil pressure	[MPa]	21
Max ambient temperature	[°C]	+50
Max oil temperature	[°C]	+70
Voltage configurations	[VDC]	12
Mounting dimensions	[mm]	#28 - 4 x M4x12
Weight	[kg]	0,62
Coil opening diameter	[mm]	Ø 23
Coil length	[mm]	50
Overall dimensions	[mm]	Ø45 x 86
Type of electric connector		Junior Timer

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

#### AVAILABLE SPARE PARTS:

1. coil 10,6MGA,
2. pole tube complete 10,6MGA,
3. nut 45X.



## PROPORTIONAL SOLENOIDS FOR POWER HYDRAULICS

**EP-35**

### APPLICATION:

Control of proportional hydraulic distributors in power hydraulic circuits.

### TECHNICAL DESCRIPTION:

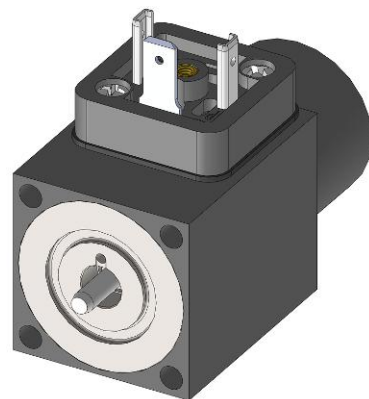
Pushing proportional solenoid used to control power hydraulic circuits.

Main application – smooth modification of hydraulic element parameters by regulating the electromagnet coil current within the 0...0.68 A range and that way varying the electromagnet force. Stabilized DC power supply.

May be operated in hydraulic oil environment (wet).

By default, the solenoid is equipped with a manual overdrive button (emergency overdrive) and a venting screw. Mode of operation – “pushing”.

The spool and other structural components are protected against corrosion by electrolytic zinc coating and black oxide treatment.



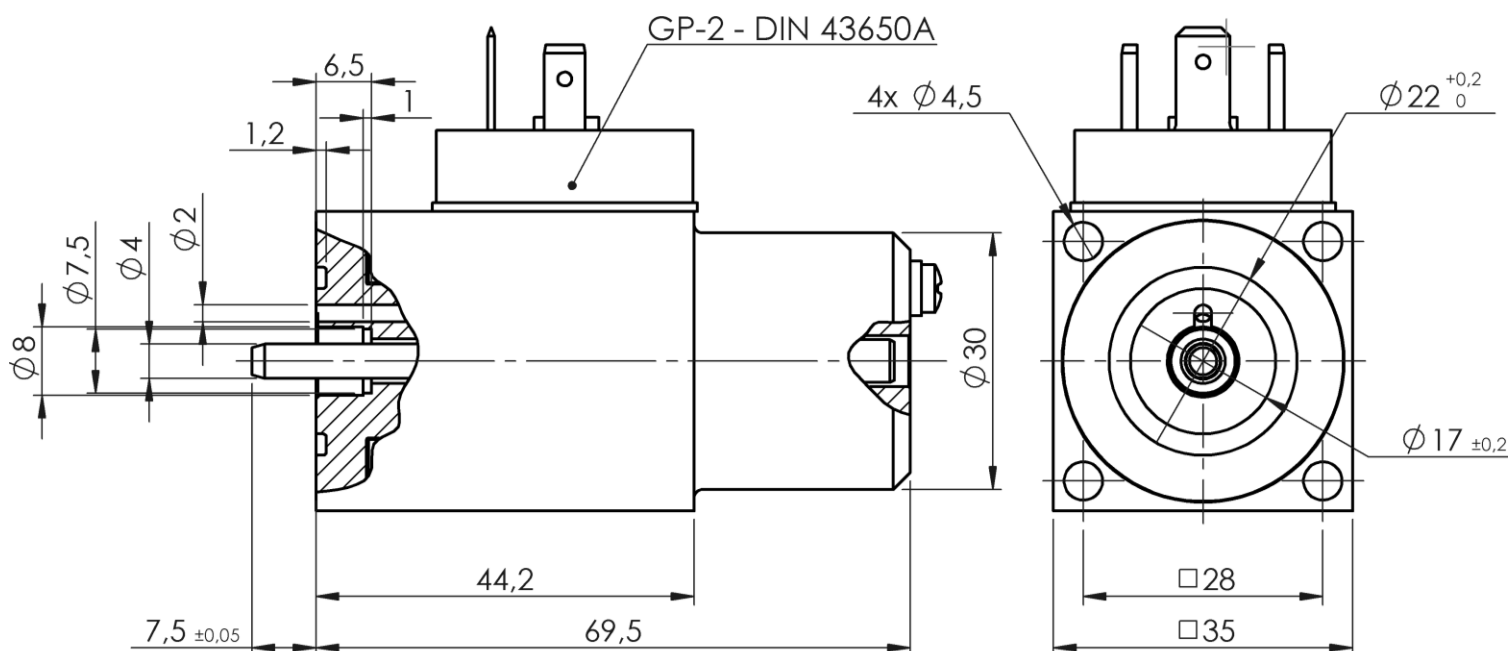
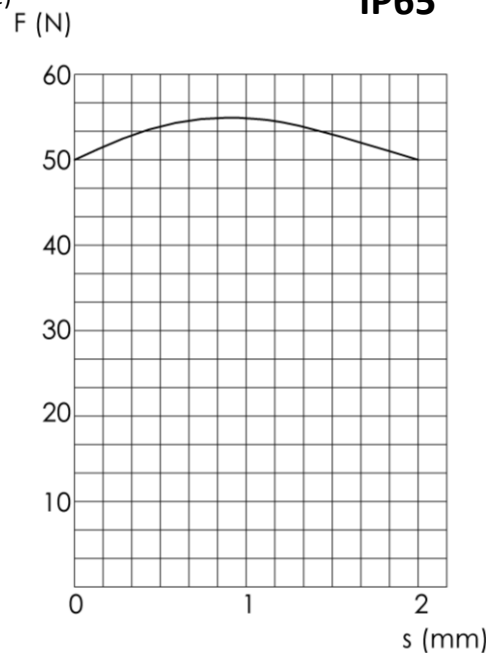
**IP65**

### SPECIFICATION:

Rated resistance	[Ω]	24,2
Working stroke	[mm]	2,0
Work time	[%] ED	100
Max working oil pressure	[MPa]	21
Force at the threshold current	[N]	50
Threshold current	[A]	0,68
Rated voltage	[VDC]	24
Mounting dimensions	[mm]	4 holes Ø 4,5 # 28
Weight	[kg]	0,47
Overall dimensions	[mm]	# 35 x 69,5
Type of electric connector		DIN 43650A

Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.



## PROPORTIONAL SOLENOIDS FOR POWER HYDRAULICS

### EPO-45

#### APPLICATION:

Control of proportional hydraulic distributors in power hydraulic circuits.

#### TECHNICAL DESCRIPTION:

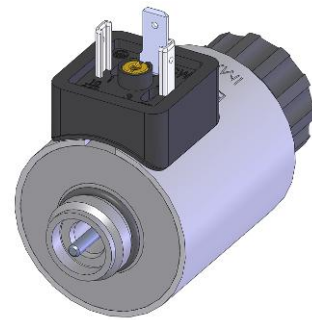
EPO-45 is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with an electrical connector and manual control button (emergency control).

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

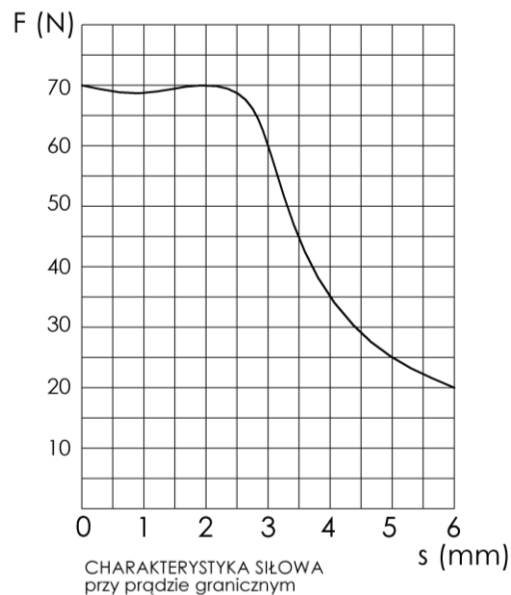
Complete pole tube is protected against corrosion by electrolytic zinc coating.



IP65

#### SPECIFICATION:

Rated resistance	[Ω]	5,4
Working stroke	[mm]	3,0
Work time	[%] ED	100
Max working oil pressure	[MPa]	21
Force at the threshold current	[N]	70
Threshold current	[A]	1,5
Mounting dimensions	[mm]	M20x1
Weight	[kg]	0,58
Overall dimensions	[mm]	Ø45x85

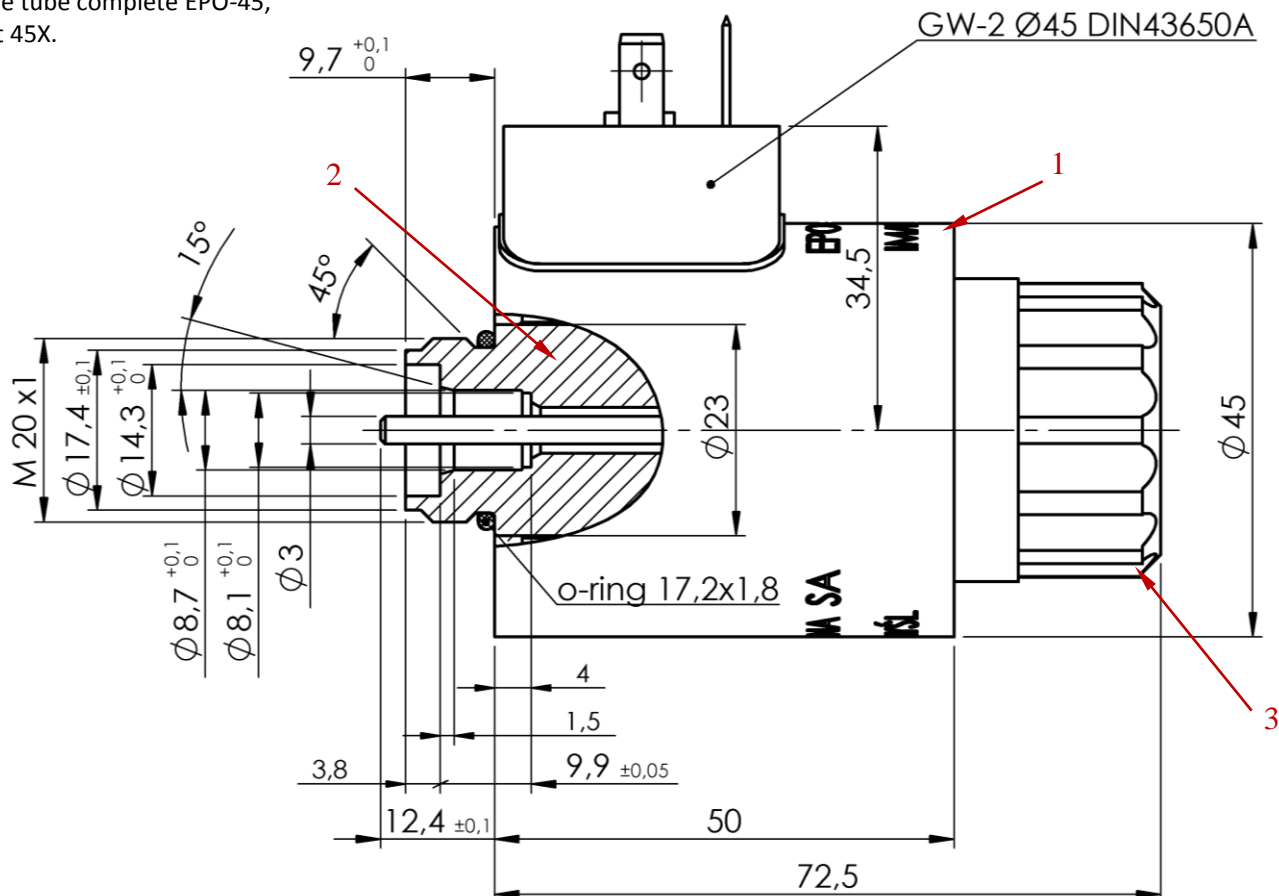


Solenoids may also be custom manufactured according to parameters defined by the Customer.

The socket plug is available at additional request.

#### AVAILABLE SPARE PARTS:

1. coil EPO-45,
2. pole tube complete EPO-45,
3. nut 45X.





**PROPORTIONAL SOLENOIDS  
FOR MOBILE POWER HYDRAULICS  
EPN-45AS**

**APPLICATION:**

Control of proportional hydraulic distributors in mobile power hydraulic circuits.

**TECHNICAL DESCRIPTION:**

EMSG45AX is supplied with direct current and operates in hydraulic oil environment.

Mode of operation – “pushing”.

By default, the solenoid is equipped with a Junior Timer mobile electrical connector.

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

Complete pole tube is protected against corrosion by electrolytic zinc coating.

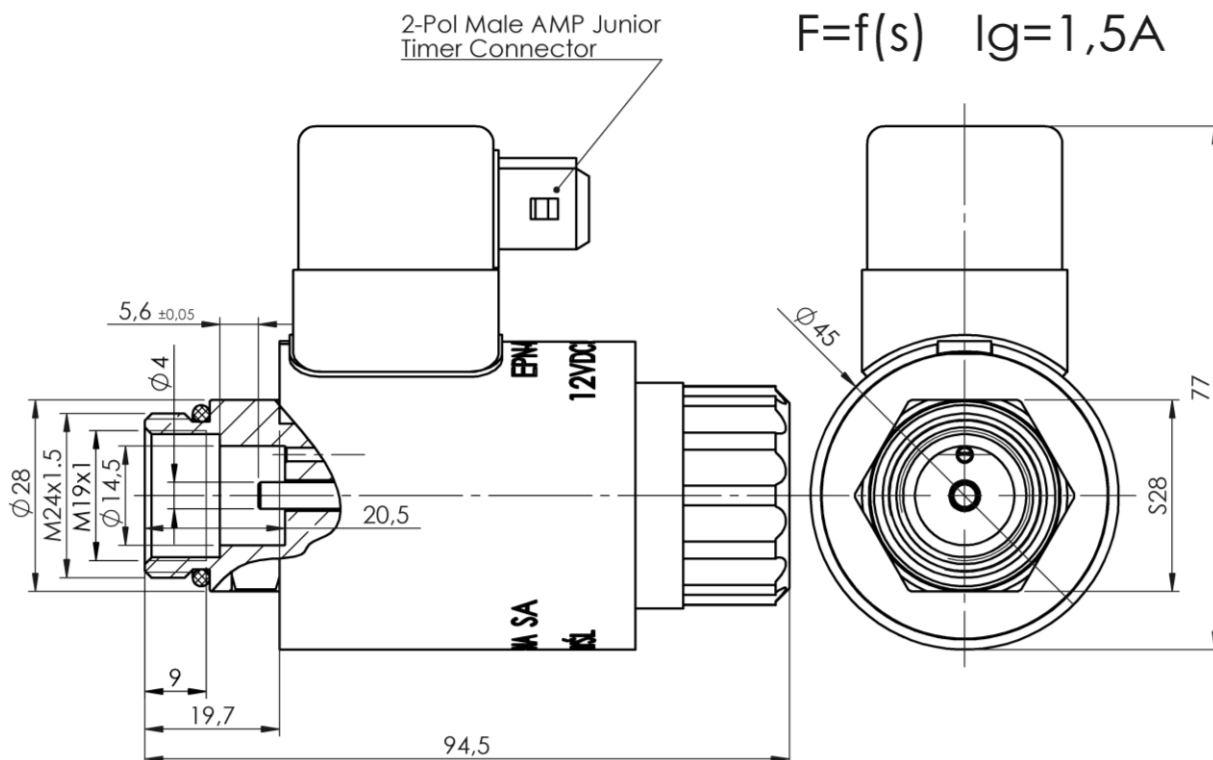
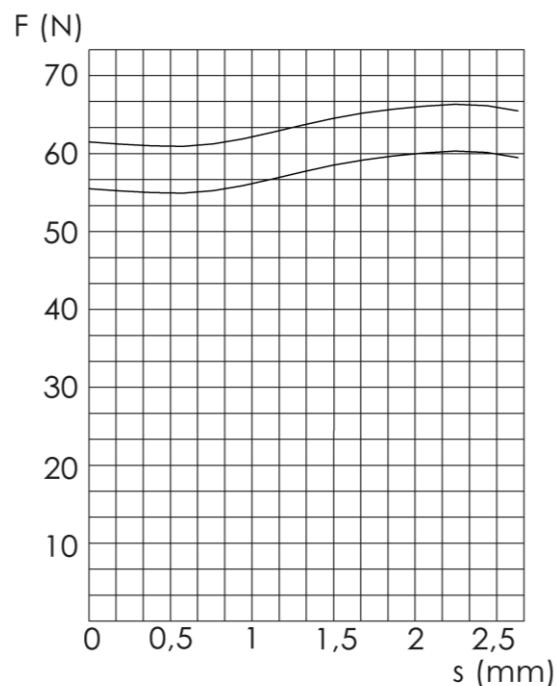


**IP66**

**SPECIFICATION:**

Rated resistance	[Ω]	5 ±0,25Ω
Working stroke	[mm]	2,6
Work time	[%] ED	100
Nominal oil pressure	[MPa]	5
Ambient temperature	[°C]	-30 ÷ +80
Force at the threshold current	[N]	55
Threshold current	[A]	1,5
Supply voltage	[VDC]	10,5...14,5
Mounting dimensions		M24x1,5 / M19x1
Weight	[kg]	0,66
Overall dimensions	[mm]	Ø45x94,5
Type of electric connector		Junior Timer

Solenoids may also be custom manufactured according to parameters defined by the Customer.



## CONTROL SOLENOIDS

### ESG-50-77-S17

#### APPLICATION:

Control of distributors or oil-free locks.

#### TECHNICAL DESCRIPTION:

ESG-50-77-S17 is supplied with direct current and operates in dry environment.

Mode of operation – “pushing”.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

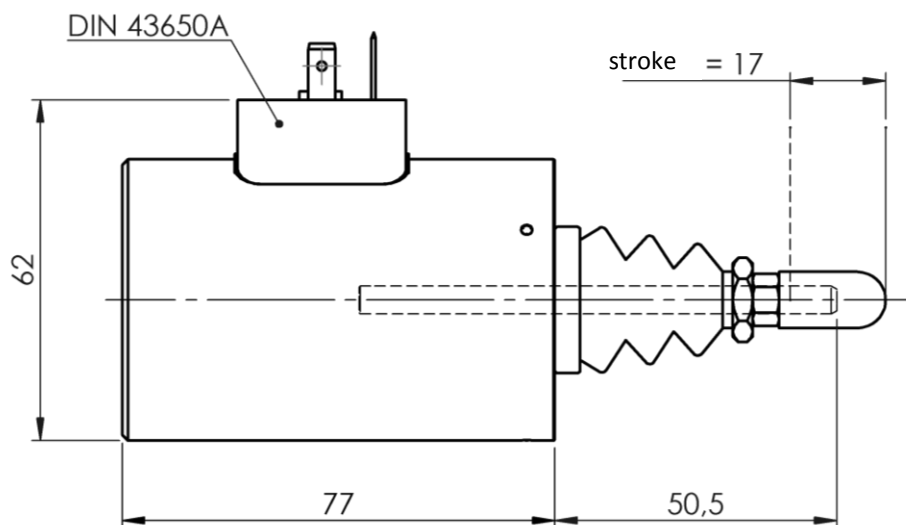
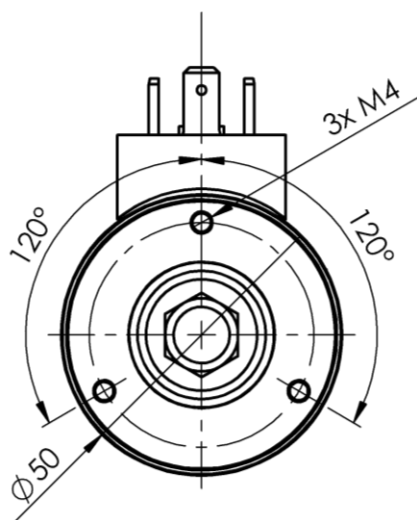
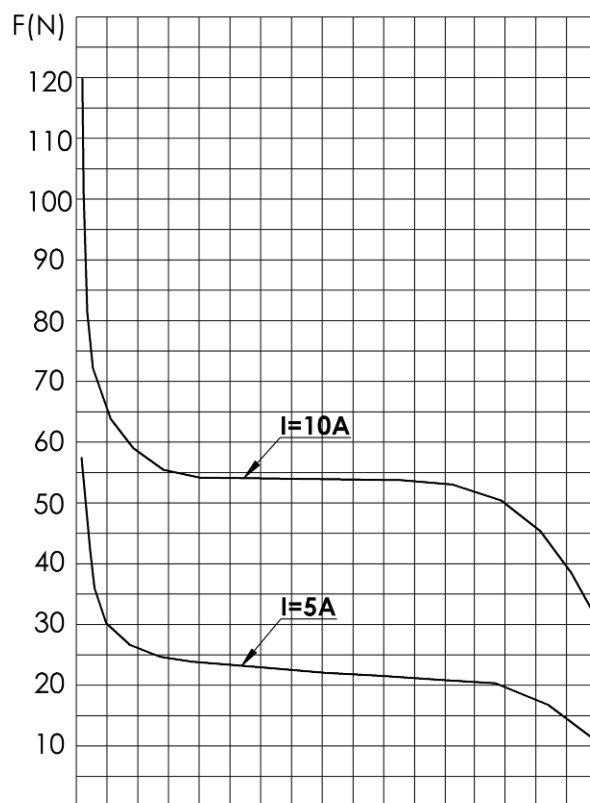
The internal metal components protected against corrosion

by electrolytic zinc coating.



#### SPECIFICATION:

Rated power	[W]	180
Total stroke	[mm]	17
Work / interval time	[s]	15 / 285
Max ambient temperature	[°C]	+40
Rated voltage	[VDC]	12
Mounting dimensions		3 x M4
Weight	[kg]	0,95
Working environment		oil-free
Return spring		non
Overall dimensions	[mm]	Ø 50 x 127,5
Type of electric connector		DIN 43650A



## CONTROL SOLENOIDS

### ESGC-55-77-S15

#### APPLICATION:

Control of distributors or oil-free locks.

#### TECHNICAL DESCRIPTION:

ESGC-55-77-S15 is supplied with direct current and operates in dry environment.

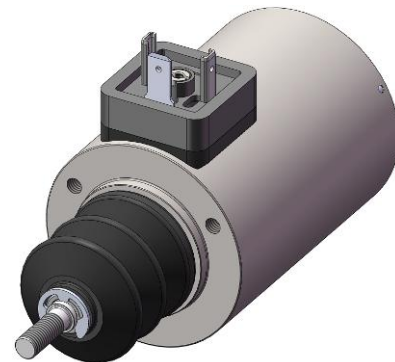
Mode of operation – “pulling”.

The solenoid is not equipped with a manual control button (emergency control).

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

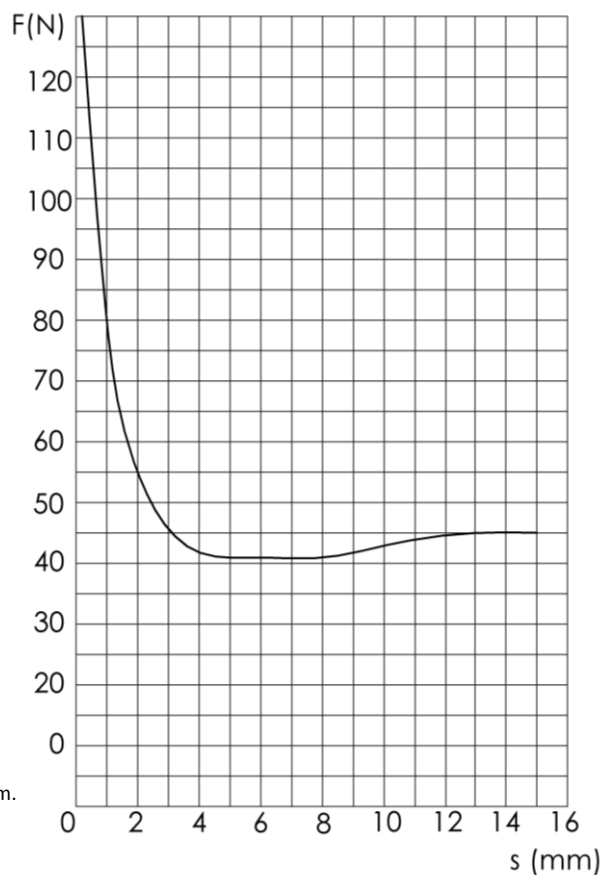
The internal metal components protected against corrosion

by electrolytic zinc coating.



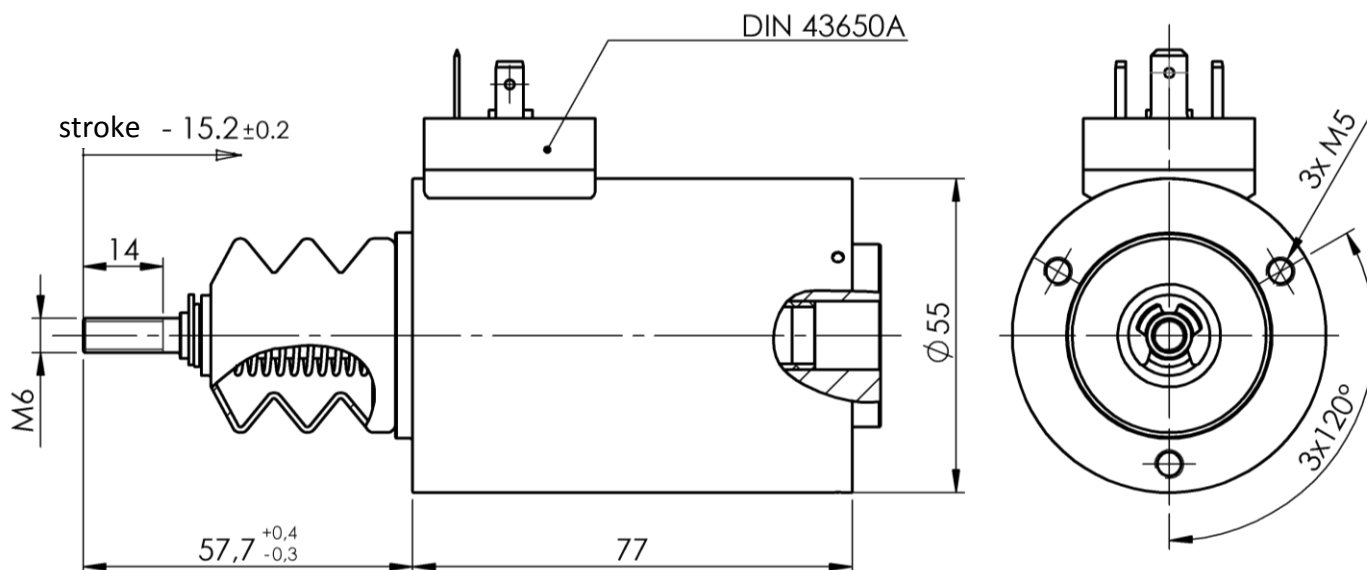
#### SPECIFICATION:

Rated power	[W]	240
Total stroke	[mm]	15
Work time	[%] ED	8
Max ambient temperature	[°C]	+40
Rated voltage	[VDC]	12
Mounting dimensions		3 x M5
Weight	[kg]	1,2
Working environment		oil-free
Return spring		yes
Overall dimensions	[mm]	Ø 55 x 135
Type of electric connector		DIN 43650A



$$F=f(s)$$

$$I=60\% I_{nom.}$$



## LOCKING SOLENOIDS

### K28

#### APPLICATION:

As electromagnetic interlocks or locks in control cabinets, switching stations etc.

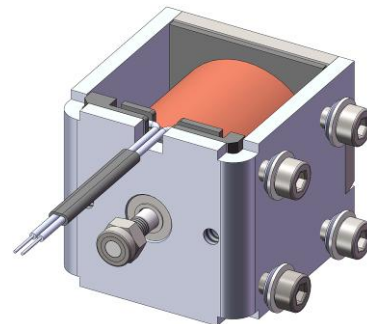
#### TECHNICAL DESCRIPTION:

K28 is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

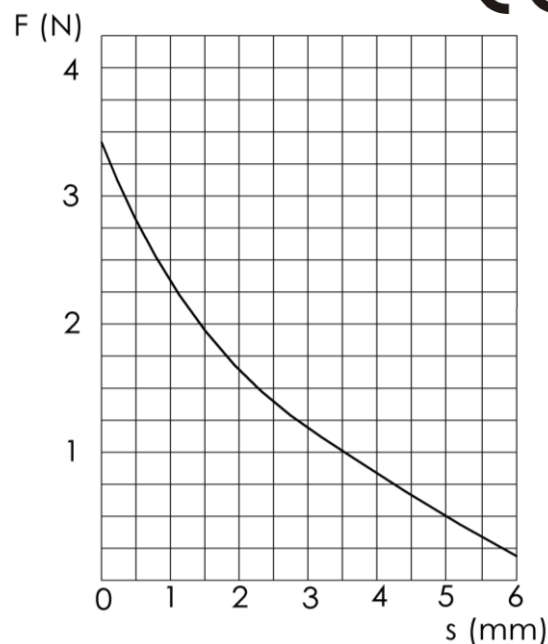
The spool is made of metal, protected against corrosion by electrolytic zinc coating.

The internal metal components protected against corrosion by electrolytic zinc coating.

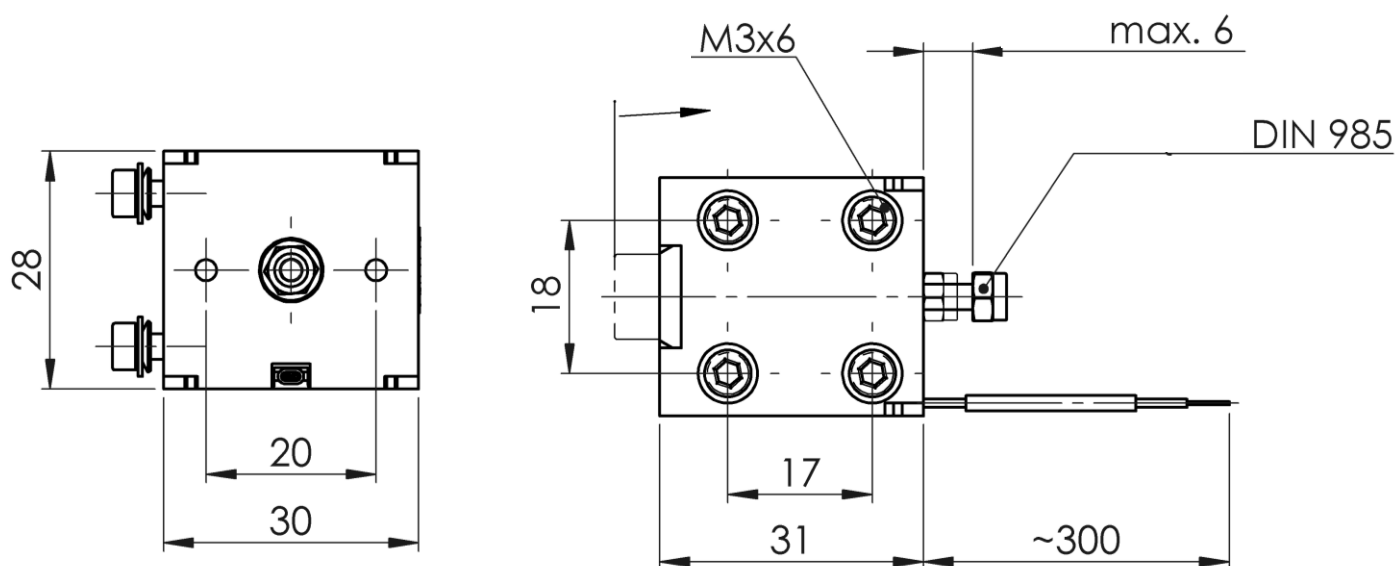


#### SPECIFICATION:

Rated power	[W]	7
Jumper stroke regulated with a nut	[mm]	2,5 ÷ 6
Work time	[%] ED	100
Max ambient temperature	[°C]	+50
Voltage configurations	[VDC]	24;110;125; 220
Mounting method		4 x M3x6
Weight	[kg]	0,12
Working environment		dry
Return spring		yes
Overall dimensions	[mm]	30 x 28 x 31
Type of electric connector		loose conductors



$$F=f(s) \quad I_p=0,857 \text{ Istab.}$$



## LOCKING SOLENOIDS

### K29

#### APPLICATION:

As electromagnetic interlocks or locks in control cabinets, switching stations etc.

#### TECHNICAL DESCRIPTION:

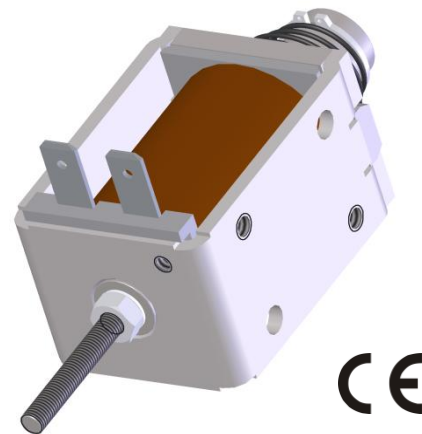
K29 is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

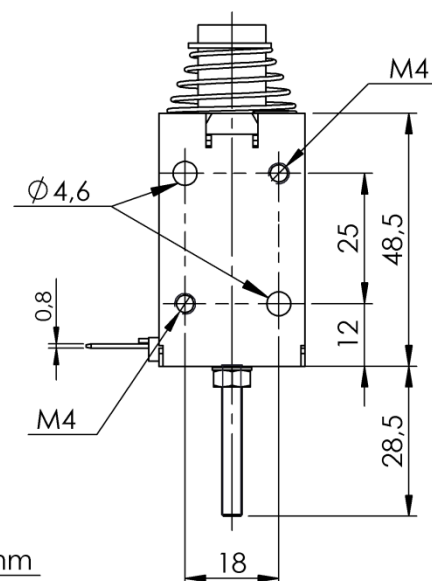
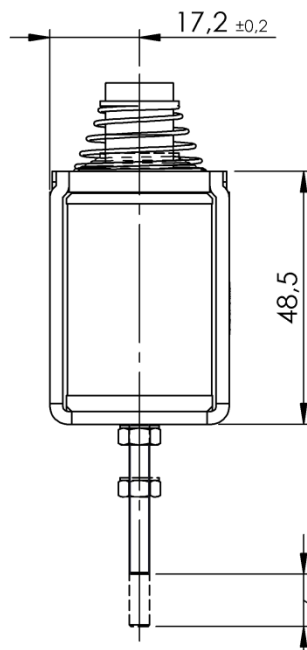
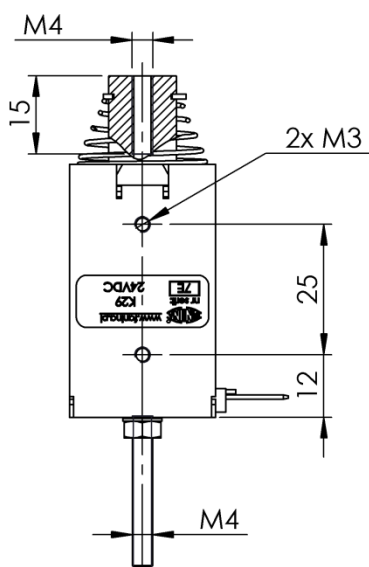
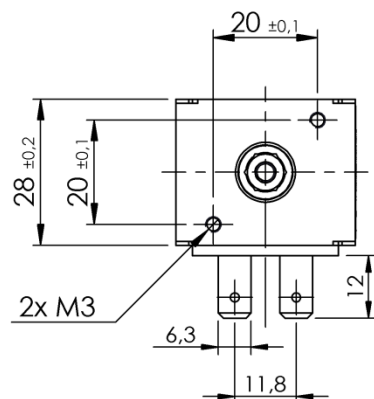
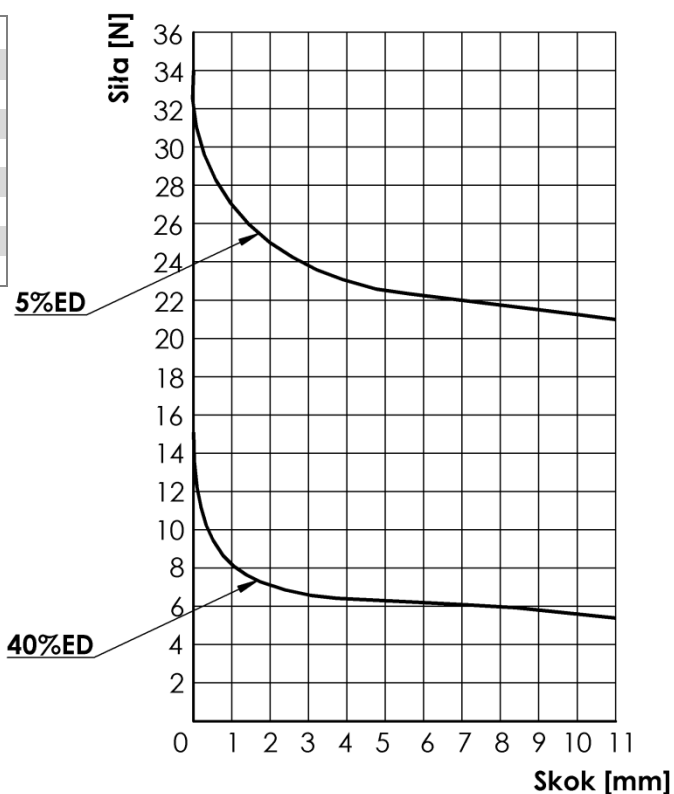
The internal metal components protected against corrosion

by electrolytic zinc coating.



#### SPECIFICATION:

		40%ED	5%ED
Rated power	[W]	32	180
Regulated jumper stroke	[mm]		10
Nominal voltage	[VDC]	24	24
Max. environment temperature	[°C]		+35
Working environment			dry
Return spring			yes
Weight	[kg]		0,25
Type of electric connector			flat pins



## LOCKING SOLENOIDS

**K30**

### APPLICATION:

As electromagnetic interlocks or locks in control cabinets, switching stations etc.

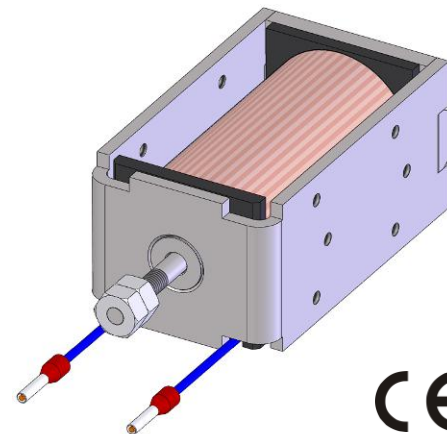
### TECHNICAL DESCRIPTION:

K30 is supplied with direct current and operates in dry environment.

Mode of operation – “pushing / pulling”.

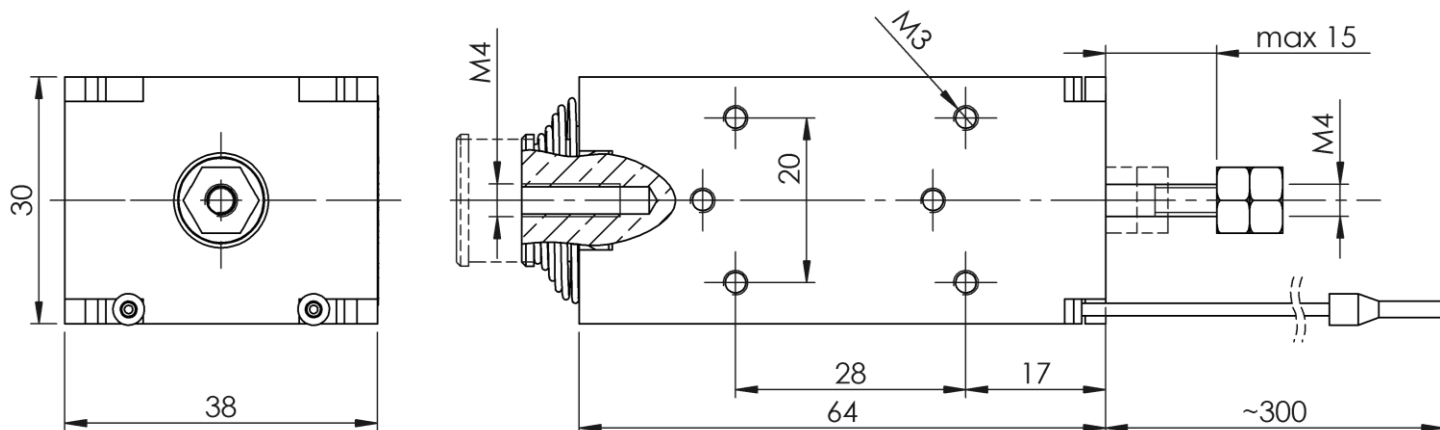
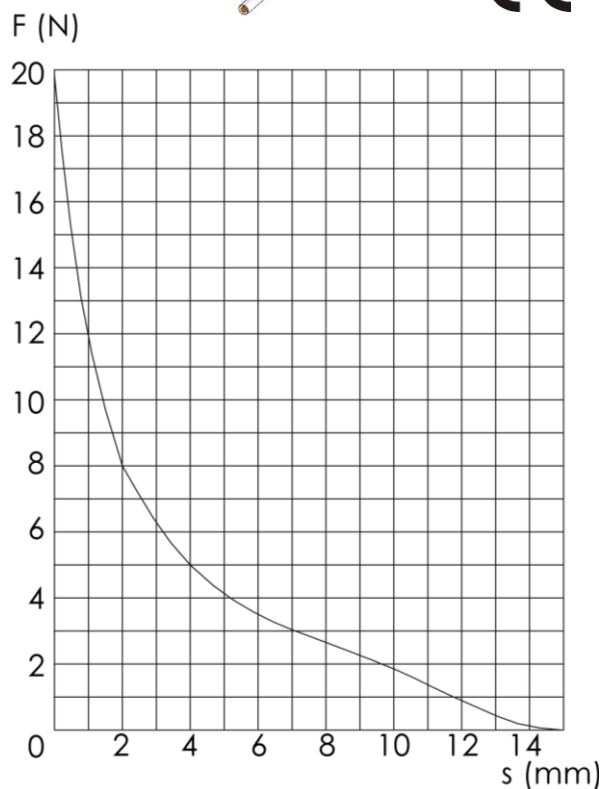
The spool is made of metal, protected against corrosion by electrolytic zinc coating.

The internal metal components protected against corrosion by electrolytic zinc coating.



### SPECIFICATION:

Rated power	[W]	14
Regulated jumper stroke	[mm]	max. 15
Work time	[%] ED	100
Max ambient temperature	[°C]	+40
Voltage configurations	[VDC]	110; 220
Mounting dimensions		6 x M3
Weight	[kg]	0,32
Working environment		dry
Return spring		tak
Overall dimensions	[mm]	64x30x38
Type of electric connector		loose conductors





## LOCKING SOLENOIDS

### UZE-2

#### APPLICATION:

As interlocks in the railway turnout control equipment.

#### TECHNICAL DESCRIPTION:

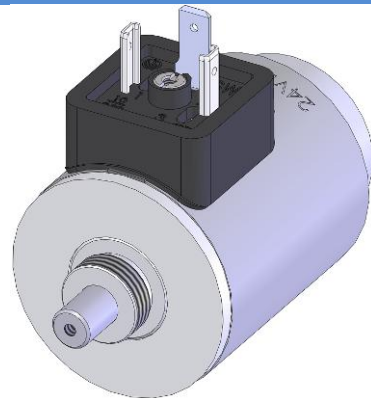
UZE-2 is supplied with direct current and operates in dry environment.

Mode of operation – “pulling” with return spring.

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

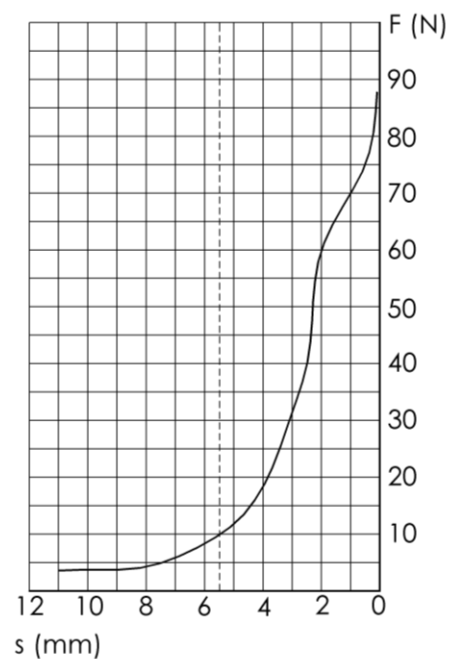
The internal metal components are protected against corrosion by electrolytic zinc coating.

The solenoid is not equipped with a manual control button (emergency control).



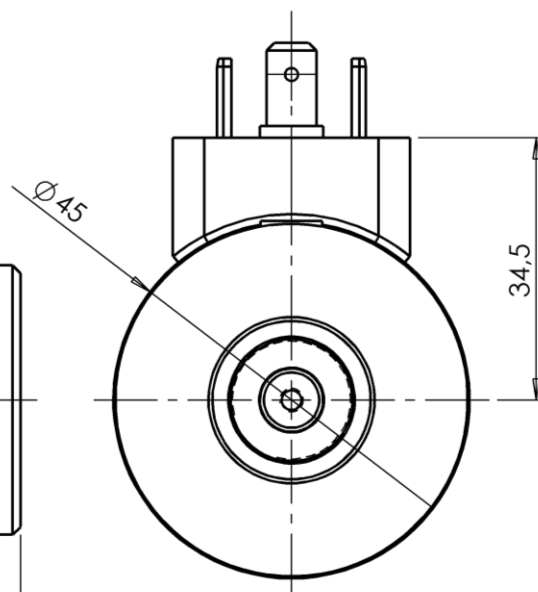
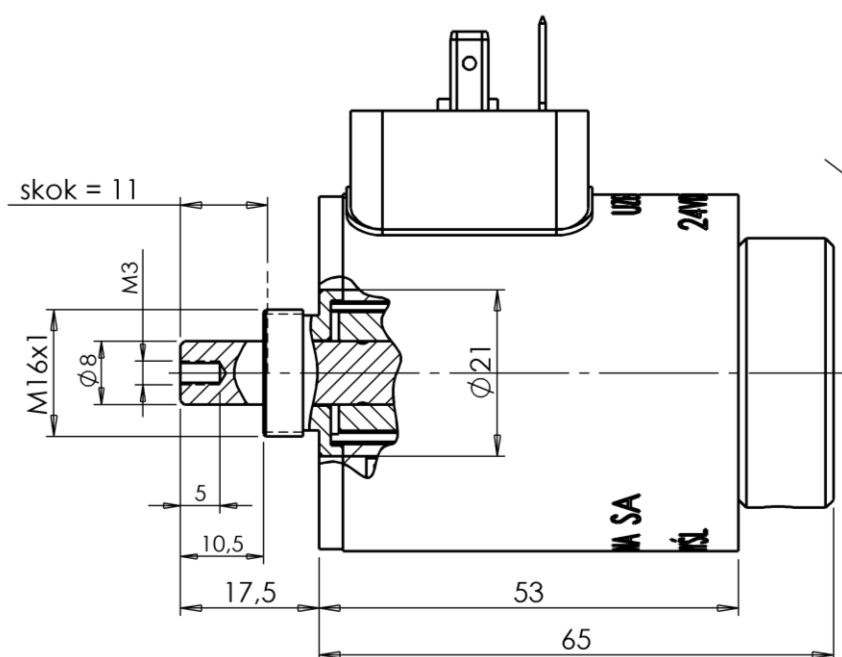
#### SPECIFICATION:

Rated power	[W]	70
Max / working stroke	[mm]	11 / 5,5
Work / interval time	[s]	5 / 60
Max ambient temperature	[°C]	+70
Voltage configurations	[VDC]	24
Mounting dimensions		M16 x 1
Weight	[kg]	0,55
Working environment		dry
Min working stroke force	[N]	10
Overall dimensions	[mm]	Ø 45 x 82,5
Type of electric connector		DIN 43650A



$$F=f(s)$$

$$U_p=U_{nom.}$$



# LOCKING SOLENOIDS

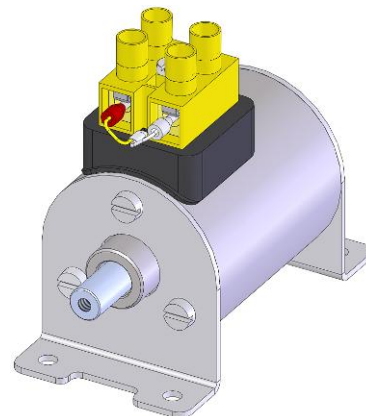
## ESC-45

### APPLICATION:

As interlocks in access-control equipment (gates, turnstiles etc).

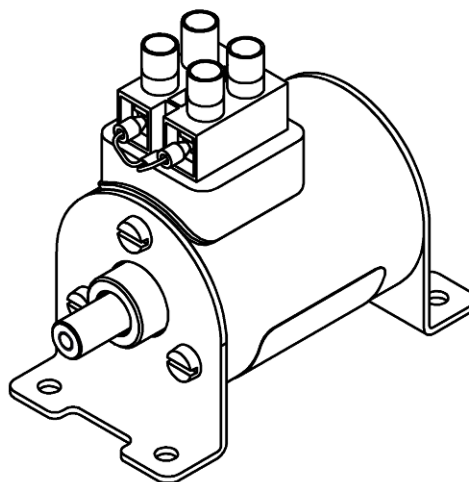
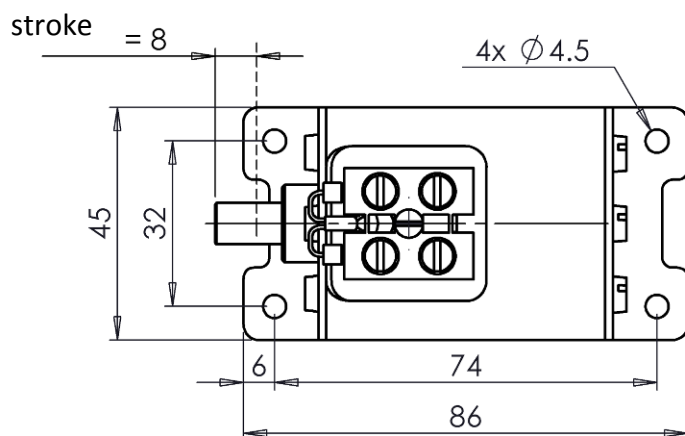
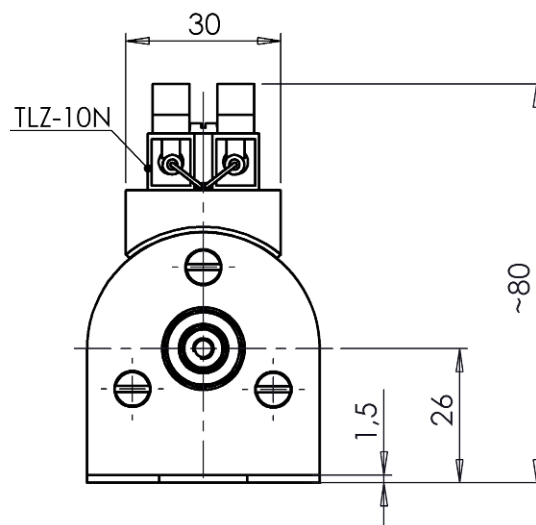
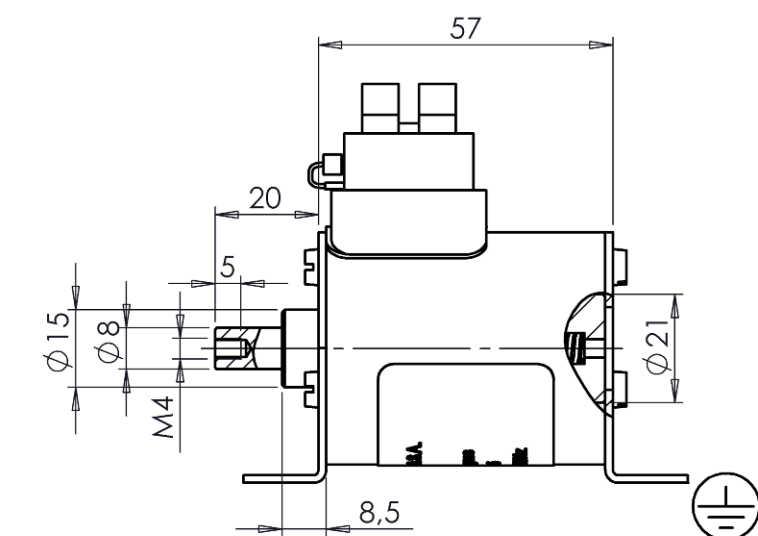
### TECHNICAL DESCRIPTION:

The spool is made of metal, protected against corrosion by electrolytic zinc coating.



### SPECIFICATION:

		24VDC	127VAC	230VAC
Rated current	[mA]	870	170	120
Rated stroke	[mm]		8	
Minimum lift capacity	[kg]		0,40	
Protection degree			IP00	
Work time	[%] ED		100	
Mode of operation			pulling	
Weight	[kg]		0,58	
Working environment			oil-free	
Emergency overdrive			non	
Mounting dimensions	[mm]		# 74 x 32	
Type of electric connector			connector TLZ-10N	



## LOCKING SOLENOIDS

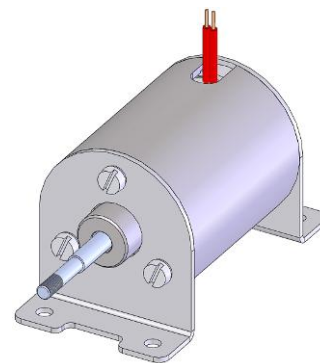
**ESC-45-2A**

### APPLICATION:

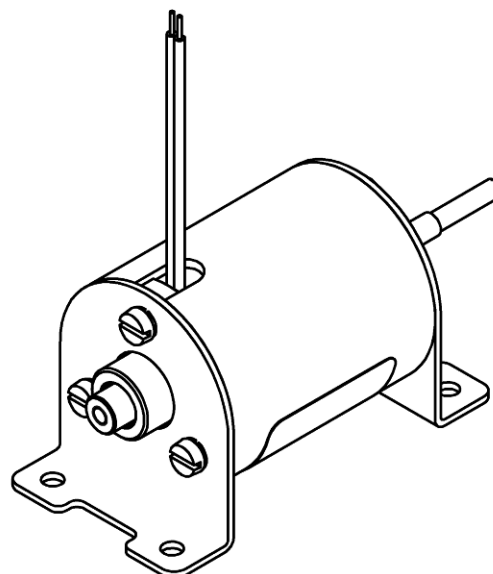
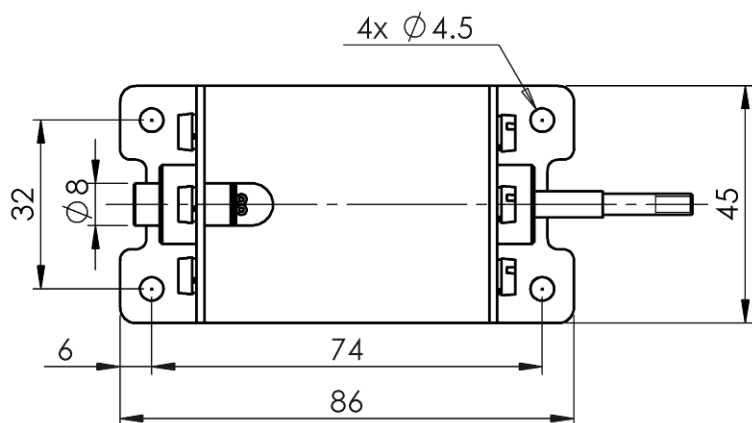
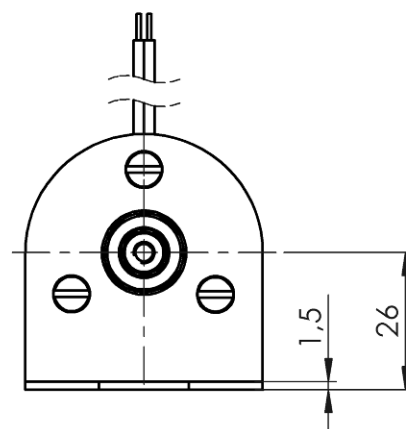
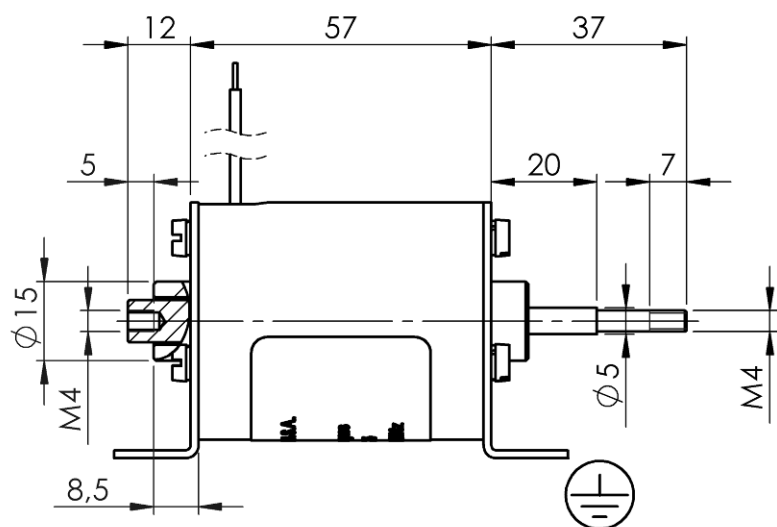
As interlocks in access-control equipment (gates, turnstiles etc).

### TECHNICAL DESCRIPTION:

The spool is made of metal, protected against corrosion by electrolytic zinc coating.



SPECIFICATION:		24VDC
Rated current	[mA]	870
Rated stroke	[mm]	8
Minimum lift capacity	[kg]	0,40
Protection degree		IP00
Work time	[%] ED	100
Mode of operation		pull / push
Weight	[kg]	0,58
Working environment		oil-free
Mounting dimensions	[mm]	# 74 x 32
Type of electric connector		loose conductors



## DOOR INTERLOCK SOLENOIDS

### EBD

#### APPLICATION:

As railcar door handle interlocks.

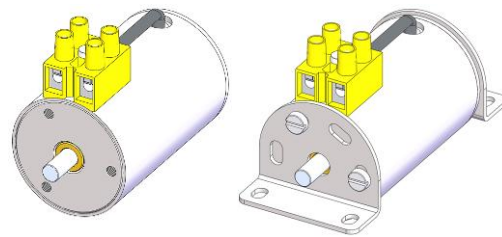
#### TECHNICAL DESCRIPTION:

EBD is supplied with direct current and operates in dry environment.

Mode of operation – “pushing”.

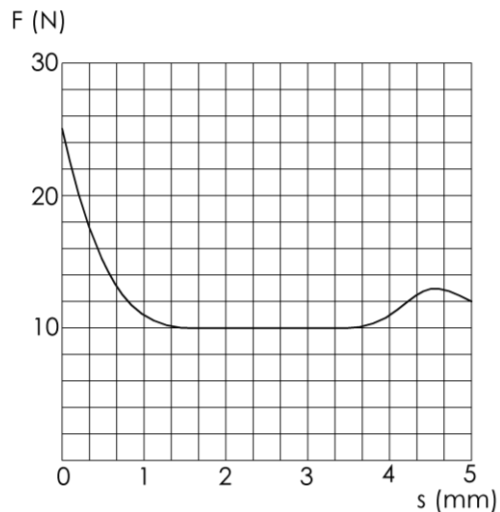
The spool is made of metal, protected against corrosion by electrolytic zinc coating.

Available in a version with or without mounting grips.



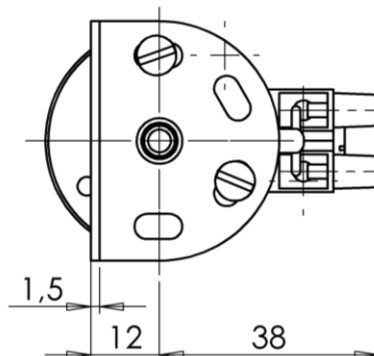
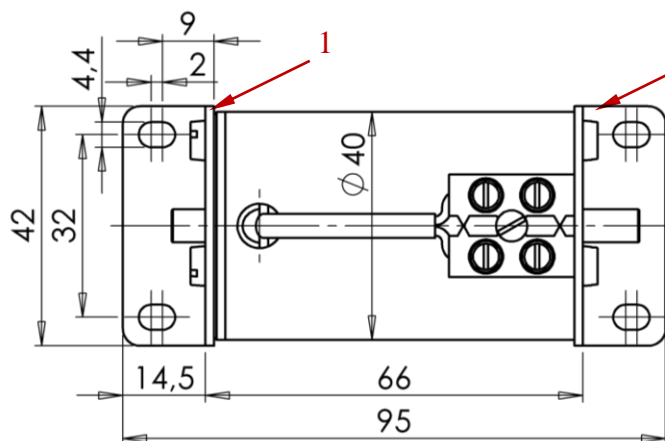
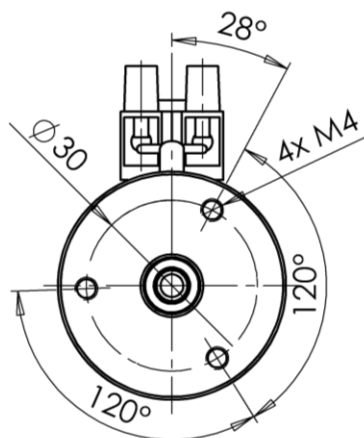
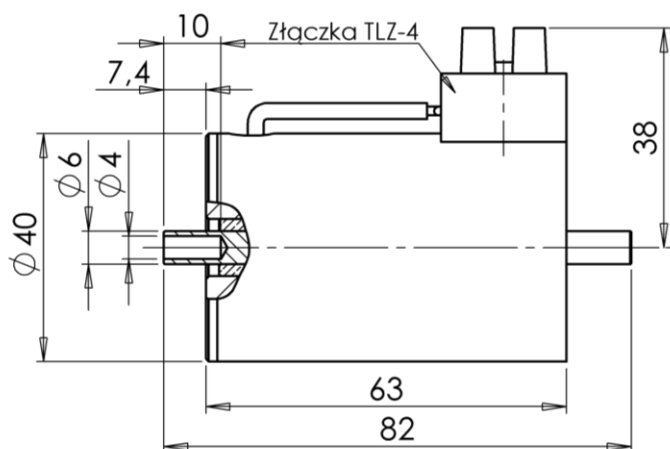
#### SPECIFICATION:

Rated voltage	[VDC]	24
Rated power	[W]	12
Stroke	[mm]	5,0
Minimum force	[N]	10
Work time	[%] ED	100
Working environment		suchy
Weight	[kg]	0,5
Max ambient temperature	[°C]	+50
Mode of operation		pushing
Type of electric connector		TLZ-4



#### AVAILABLE SPARE PARTS:

- Set of mounting grips (2 grips + 8 screws).



## ELECTROMAGNETIC LOCKS

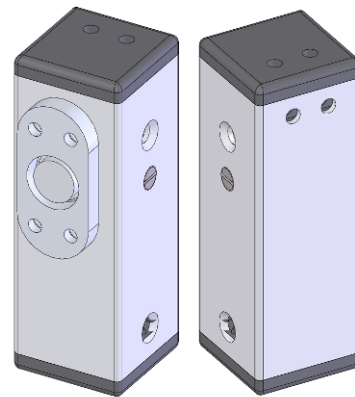
**ZE**

### APPLICATION:

As electromagnetic interlocks or locks in clothing wardrobes.

### TECHNICAL DESCRIPTION:

The electromagnetic lock is supplied with direct current and operates in dry environment. The housing is made from heavy-duty aluminium profile.

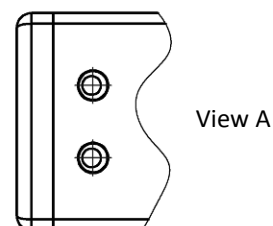
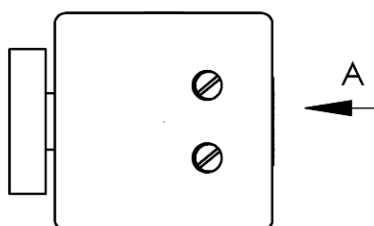
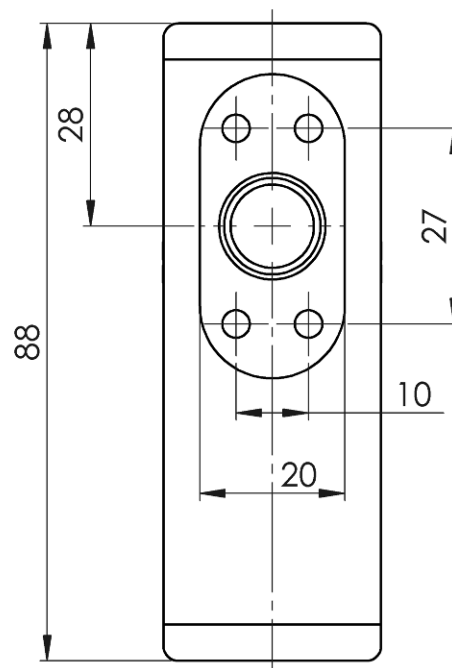
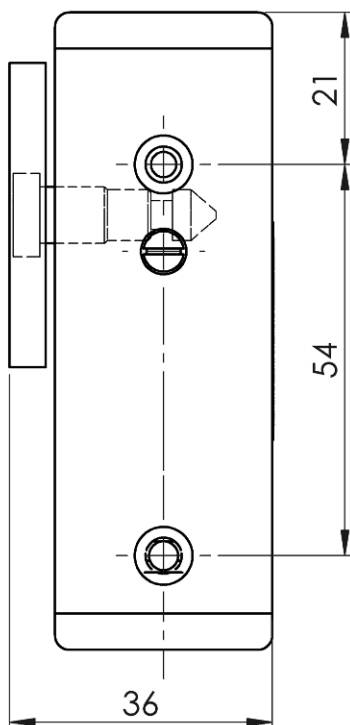


### SPECIFICATION:

		ZE-12	ZE-24
Rated voltage	[VDC]	12	24
Rated power	[W]	7	7
Work time		15%ED max. 15s on / 85s off	
Max ambient temperature	[°C]	+40	+40
Protection degree		IP20	IP20
Lock assembly openings	[mm]	2 x Ø 3,5	2 x Ø 3,5
Openings for mounting the gripping part	[mm]	4 x Ø 3,8	4 x Ø 3,8
Weight	[kg]	0,18	0,18
Overall dimensions	[mm]	30 x 30 x 88	30 x 30 x 88

### AVAILABLE SPARE PARTS:

1. grip attachment
2. grip pin
3. grip  
(grip attachment + grip pin)



## COILS FOR SOLENOIDS

### Coil 37

#### APPLICATION:

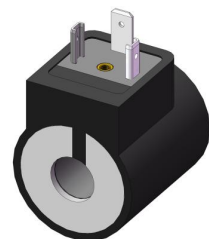
As a spare part of EMSG-37; EMSGC-37 solenoids and similar products from other manufacturers.

#### TECHNICAL DESCRIPTION:

The spool is made from plastic (206VDC version – metal) in black colour.

#### SPECIFICATION:

Rated power	[W]	26
Voltage configurations	[VDC]	12;24;96;110;206
Coil opening diameter	[mm]	Ø 16
Overall dimensions	[mm]	Ø 36 x 50 ( Ø 37 x 50 for version 206VDC)
Type of electric connector		DIN 43650A



### Coil 45X

#### APPLICATION:

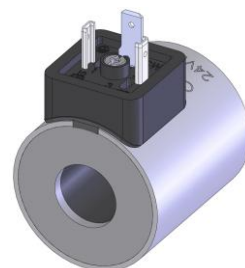
As a spare part of EMSG-45X solenoids and similar products from other manufacturers.

#### TECHNICAL DESCRIPTION:

The spool is made of metal, by default powder-coated in grey colour.

#### SPECIFICATION:

Rated power	[W]	30
Voltage configurations	[VDC]	12;24;42;48;60;96;110;125;206
Coil opening diameter	[mm]	Ø 23
Overall dimensions	[mm]	Ø 45 x 50
Type of electric connector		DIN 43650A



### Coil C45-XX

#### APPLICATION:

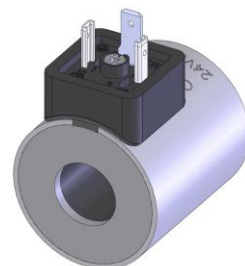
As a spare part of former versions of EMSG-45 solenoids and similar products from other manufacturers.

#### TECHNICAL DESCRIPTION:

The spool is made of metal, protected against corrosion by electrolytic zinc coating.

#### SPECIFICATION:

		coil C45-19	coil C45-21	Coil C45-22
Rated power	[W]	30	30	30
Voltage configurations	[VDC]	12;24	12;24	12;24
Coil opening diameter	[mm]	Ø 19	Ø 21	Ø 22
Overall dimensions	[mm]	Ø 45 x 50	Ø 45 x 50	Ø 45 x 50
Type of electric connector		DIN 43650A	DIN 43650A	DIN 43650A



### Coil 63X

#### APPLICATION:

As a spare part of EMSG-63X solenoids and similar products from other manufacturers.

#### TECHNICAL DESCRIPTION:

The spool is made of metal, by default powder-coated in grey colour.

#### SPECIFICATION:

Rated power	[W]	45
Voltage configurations	[VDC]	12;24;42;48;60;96;110;125;206;220
Coil opening diameter	[mm]	Ø 31,5
Overall dimensions	[mm]	Ø 63 x 74,3
Type of electric connector		DIN 43650A





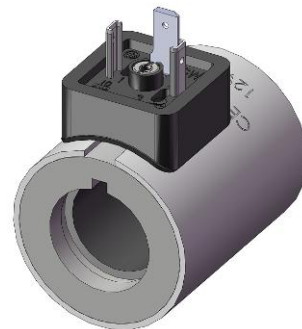
## Coil 45.55

### APPLICATION:

As a spare part of solenoids for power hydraulic circuit.

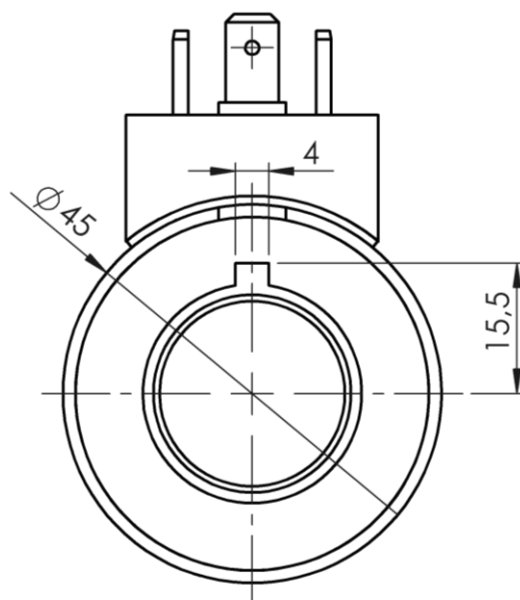
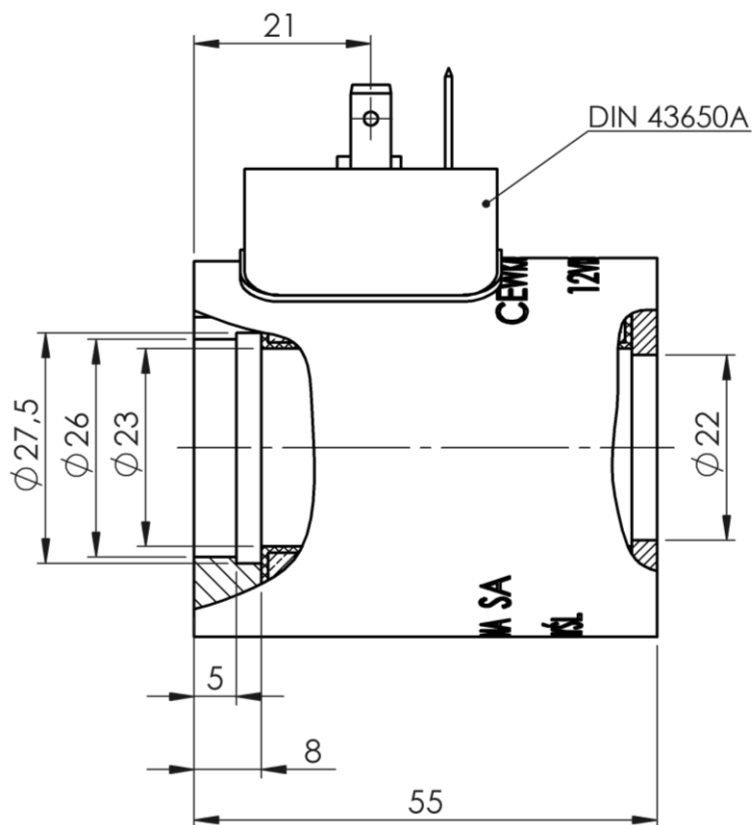
### TECHNICAL DESCRIPTION:

The spool is made of metal, by default powder-coated in grey colour.



### SPECIFICATION:

Rated power	[W]	30
Voltage configurations	[VDC]	12; 24
Protection degree (with plug)		IP65
Work time	[%] ED	100
Max ambient temperature	[°C]	+50
Coil opening diameter	[mm]	Ø 22
Weight	[kg]	0,37
Overall dimensions	[mm]	Ø 45 x 55
Type of electric connector		DIN 43650A



## Coil EQ

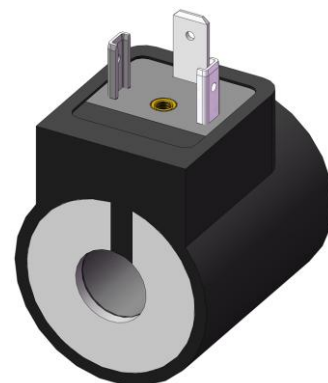
### APPLICATION:

Power supply of solenoids used, among other things, to control water supply to railcar WCs.

### TECHNICAL DESCRIPTION:

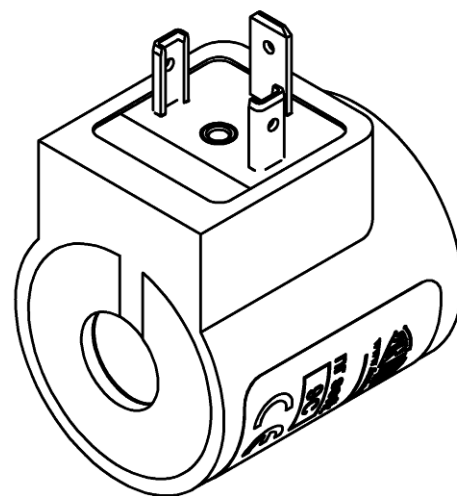
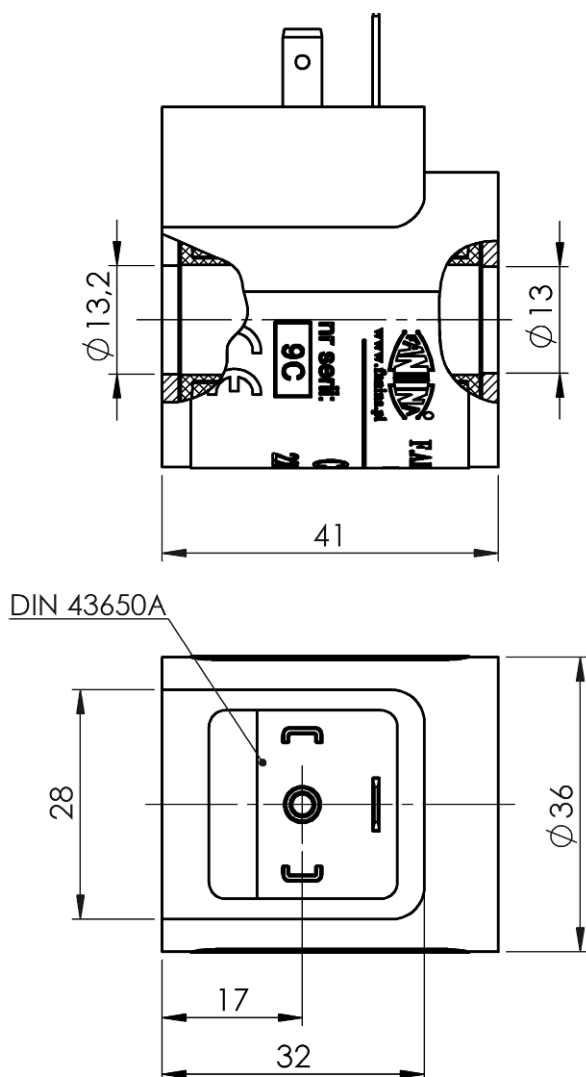
The spool is made from plastic in black colour.

The winding is completely overmoulded to make it difficult to steal copper contained in it.



### SPECIFICATION:

		8W	14W
Rated power for DC	[W]	8	14
Active power for AC	[W]	8	14
DC voltage configurations	[VDC]	12; 24; 110	12; 24; 110
AC voltage configurations	[VAC]	24; 110; 220	24
Coil wire insulation class		180	180
Protection degree		IP65	IP65
Work time	[%] ED	100	100
Max ambient temperature	[°C]	+50	+50
Weight	[kg]	0,18	0,18
Coil opening diameter	[mm]	Ø 13	Ø 13
Overall dimensions	[mm]	Ø 36 x 41	Ø 36 x 41
Type of electric connector		DIN 43650A	DIN 43650A



## Coil EC

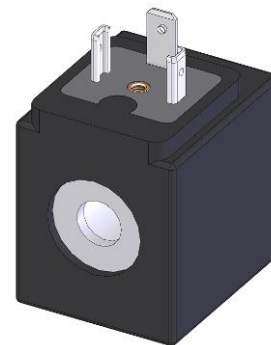
### APPLICATION:

As a spare part of water solenoids (e.g. by Aqua).

### TECHNICAL DESCRIPTION:

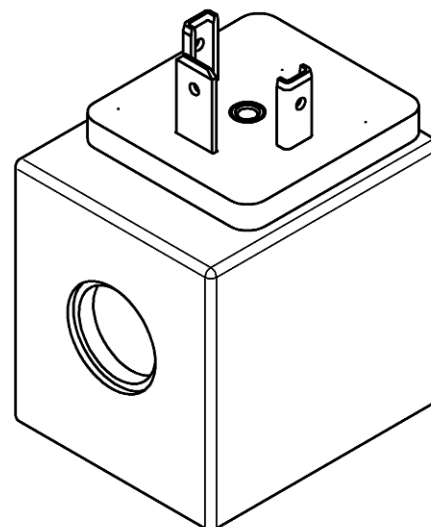
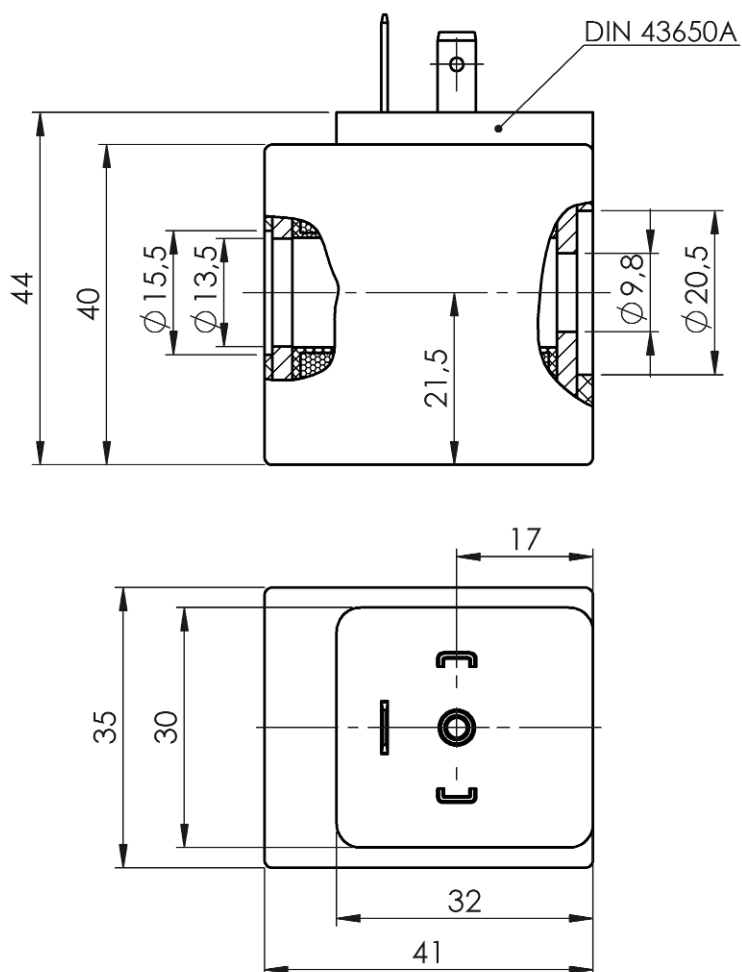
The spool is made from plastic in black colour.

The winding is completely overmoulded to make it difficult to steal copper contained in it.



### SPECIFICATION:

		coil ECS	coil ECZ
Rated power for DC	[W]	8	-
Active power for AC	[W]	-	8
DC voltage configurations	[VDC]	24; 110	24; 110
AC voltage configurations	[VAC]	24; 230	24; 230
Insulation class		F	F
Protection degree		IP65	IP65
Work time	[%] ED	100	100
Max ambient temperature	[°C]	+50	+50
Weight	[kg]	0,2	0,2
Coil opening diameter	[mm]	Ø 13,5	Ø 13,5
Overall dimensions	[mm]	35 x 41 x 44	35 x 41 x 44



## Coil FAE-34050-T

### APPLICATION:

As a spare part of pneumatic solenoids which control the door closing system in rail vehicles.

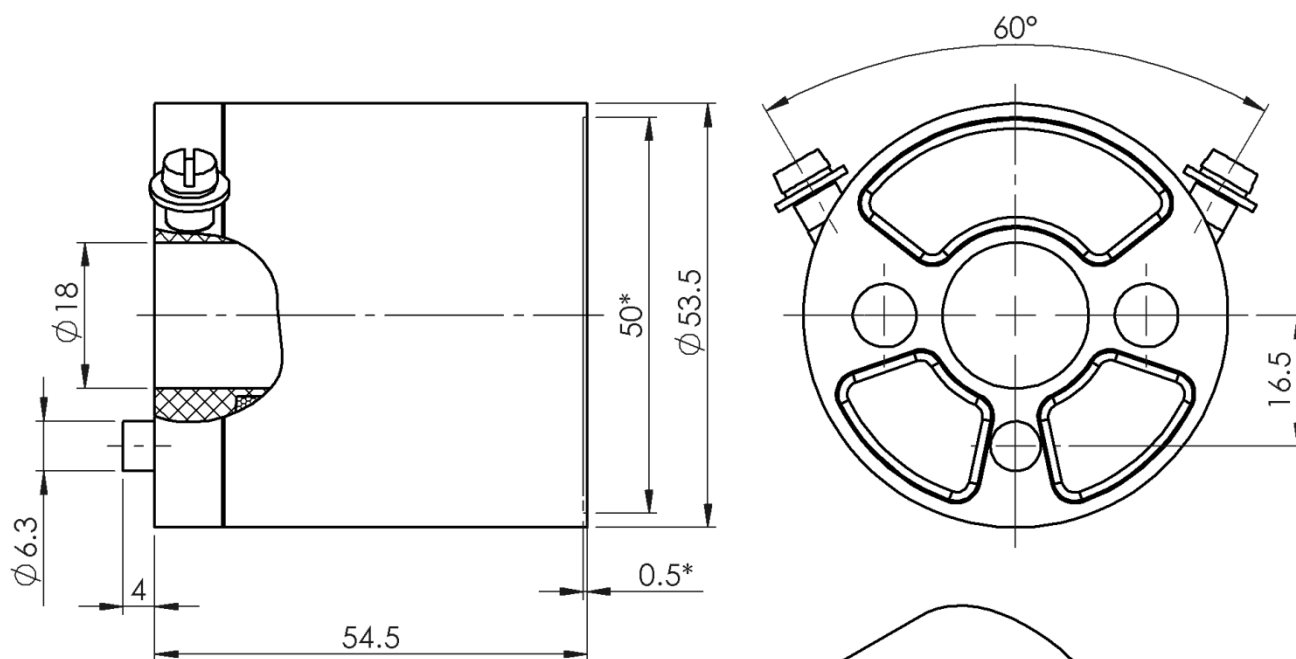
### TECHNICAL DESCRIPTION:

The spool is made from plastic in black colour – when wound, the coil is overmoulded with plastic under pressure to make it difficult to steal copper contained in it.

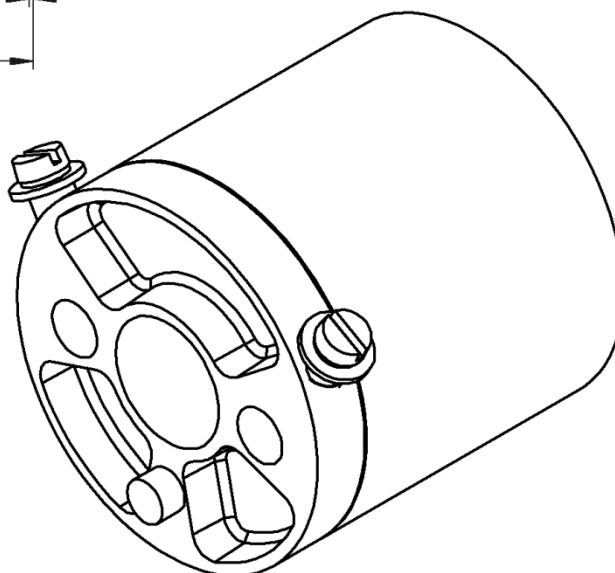


### SPECIFICATION:

		ver. 1	ver. 2	ver. 4 pulse
Rated voltage	[VDC]	24	110	110
Rated power	[W]	12	13	13
Rated resistance	[Ω]	48	930	930
Insulation class		F	F	F
Work time	[%] ED	100	100	pulse
Max ambient temperature	[°C]	+50	+50	+50
Weight	[kg]	0,43	0,43	0,43
Coil opening diameter	[mm]	Ø 18	Ø 18	Ø 18
Overall dimensions	[mm]	Ø53,5x54,5	Ø53,5x54,5	Ø53,5x54,5



\* - wymiary pogłębienia  
(dotyczy tylko cewek 110VDC)



## Coil CWE

### APPLICATION:

As a spare part of electro-pneumatic solenoids used in rail vehicles (including, but not limited to, H9E1, H9E2, H908a, H909).

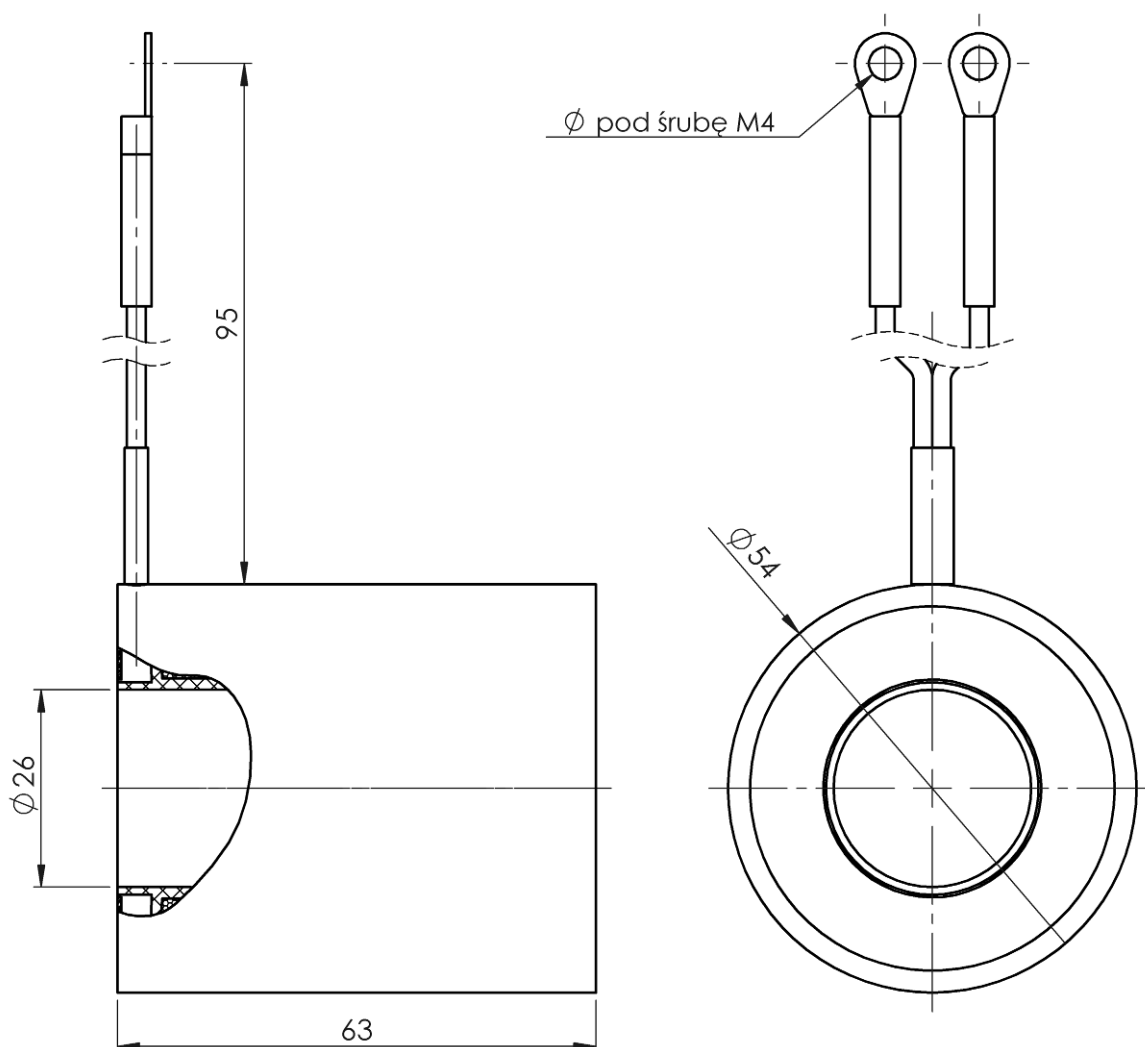
### TECHNICAL DESCRIPTION:

The spool is made from plastic in black colour – when wound, the coil is overmoulded with plastic under pressure to make it difficult to steal copper contained in it.



### SPECIFICATION:

		ver. 1	ver. 2	ver. 3	ver. 4
Rated voltage	[VDC]	24	48	110	72
Rated power	[W]	22	23	28	25
Rated resistance	[Ω]	26	100	430	212
Insulation class		F	F	F	F
Work time	[%] ED	100	100	100	100
Max ambient temperature	[°C]	+50	+50	+50	+50
Weight	[kg]	0,45	0,45	0,45	0,45
Coil opening diameter	[mm]	Ø 26	Ø 26	Ø 26	Ø 26
Overall dimensions	[mm]	Ø 54 x 63	Ø 54 x 63	Ø 54 x 63	Ø 54 x 63



## ELECTROMAGNETIC CHUCKS (TABLES)

### BJP

#### APPLICATION:

Immobilising objects made of ferromagnetic materials while they are treated with grinders or other machine tools.

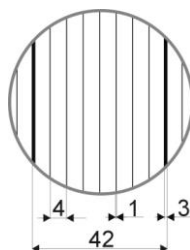
#### WORKING CONDITIONS:

Continuous operation. The chuck design is waterproof.

#### DESIGN:

The rectangular BJP electromagnetic chuck consists of:

- ✓ ferromagnetic body (frame + support),
- ✓ fixing plate,
- ✓ power supply cable (3 m long),
- ✓ two retaining bars,
- ✓ poles with windings.



#### “BJP” SPECIFICATION:

	400x200	450x200	500x200	500x250	500x300	600x250	600x300	600x400	800x300	800x350	800x400	1000x300	1000x400
Power supply voltage (VDC)	110	110	110	110	110	110	110	110	110	110	110	110	110
Top width (mm)	200	200	200	250	300	250	300	400	300	350	400	300	400
Top length (mm)	400	450	500	500	500	600	600	600	800	800	800	1000	1000
Block width (mm)	42	42	42	42	42	42	42	42	42	42	42	42	42
Number of blocks per table	8	9	10	10	10	12	12	12	17	17	17	22	22
Power (W)	102	121	132	161	187	187	220	286	324	324	363	351	444
Attraction force (kG/cm <sup>2</sup> )	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13	11÷13
Top height (mm)	98	98	98	98	98	98	98	98	100	100	100	100	100

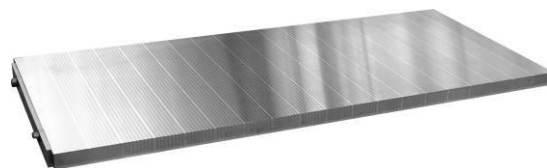
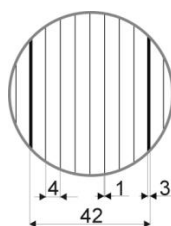
## POLE PLATES (TOPS) FOR „BJP” CHUCKS

#### APPLICATION:

Electromagnetic chuck (table) element.

#### DESIGN:

The top consists of ferromagnetic and brass separators.



	400x200	450x200	500x200	500x250	500x300	600x250	600x300	600x400	800x300	800x350	800x400	1000x300	1000x400
Top width (mm)	200	200	200	250	300	250	300	400	300	350	400	300	400
Top length (mm)	400	450	500	500	500	600	600	600	800	800	800	1000	1000
Block width (mm)	42	42	42	42	42	42	42	42	42	42	42	42	42
Number of blocks per table	8	9	10	10	10	12	12	12	17	17	17	22	22
Top height (mm)	23	23	23	23	23	23	23	23	23	23	23	23	23



## CABLE GUIDES

### APPLICATION:

Protection of power or other media cables against wear, break or other damages during operation on the mobile elements of the machinery or equipment.

### DESIGN AND EQUIPMENT:

The guide consists of a steel chain and aluminium brackets to place the cables in so that they can be bent at a permissible radius and are mutually separated by a constant distance.



### HOW TO ORDER:

Each order should specify the guide type, length **Lk**, bending radius **KR**, width **BK**, bracket type (split or non-split) as well as the number, shape and location of openings.

Example: Guide type 0650; Lk-1560; KR-115; BK-250; split bracket according to the attached drawing.

**NOTE! The guides type 0950 and 1250 with bracket height above 50 mm are made with split bracket only!**

**The guides may optionally be ordered in the closed variant.**

SPECIFICATION:	0650	0950	1250
Bending radius KR (mm)	75; 90; 115; 125; 145	145; 200; 250; 300	145; 200; 250; 300; 350
Guide width BK min (mm)	70	120	120
Guide width BK max (mm)	350	500	600
Max "D" inside the bracket (mm)	30	54	75
BK calculation: (mm)	$\Sigma D + \Sigma c + 35$	$\Sigma D + \Sigma c + 43$	$\Sigma D + \Sigma c + 48$
hg (mm)	44	68	94
C min (mm)	4	4	4

## PLUG FOR MELEX GOLF CARS

**ABC**

### APPLICATION:

For battery chargers of MELEX golf cars.



## OUR SERVICES:

### HEAT TREATMENT:

We carry out heat treatment according to the Customer processes and also develop processes by ourselves in accordance with the Customer's assumptions.

We perform the following:

- quench hardening,
- tempering,
- annealing,
- normalising.

Bigger furnace specification:

- inside dimensions:  $750 \times 850 \times 450$  (height) mm
- charge weight – up to 200 kg
- max temperature –  $1250^{\circ}\text{C}$
- no protective atmosphere
- possibility of precise computer-controlled programming the heat treatment process
- possibility of printing the process course.

Heat treatment is followed by hardness testing – HR



### WELDING:

We provide MIG/MAG and TIG welding and building up services for:

- constructional and stainless steels,
- quenched and tempered steels,
- building up and regeneration.

Welding equipment specification:

MIG/MAG (OERLIKON – CITOPULS II 420 welder):

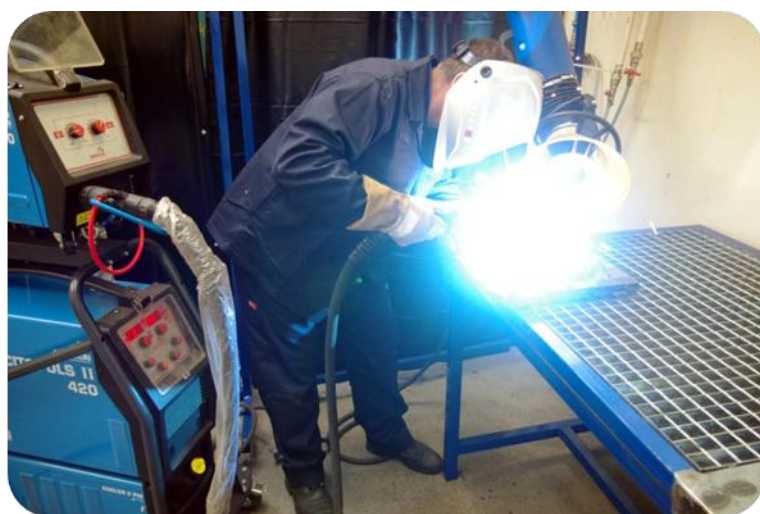
- range of welding current:  $15 \div 420\text{A}$
- welding current 350A – 100%.

TIG – MASTERING AC/DC PULSE (KEMPPI 2000)

- range of welding current:  $15 \div 200\text{A}$

TIG – CEMONT TXH 250 AC/DC

- range of welding current:  $15 \div 250\text{A}$





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