

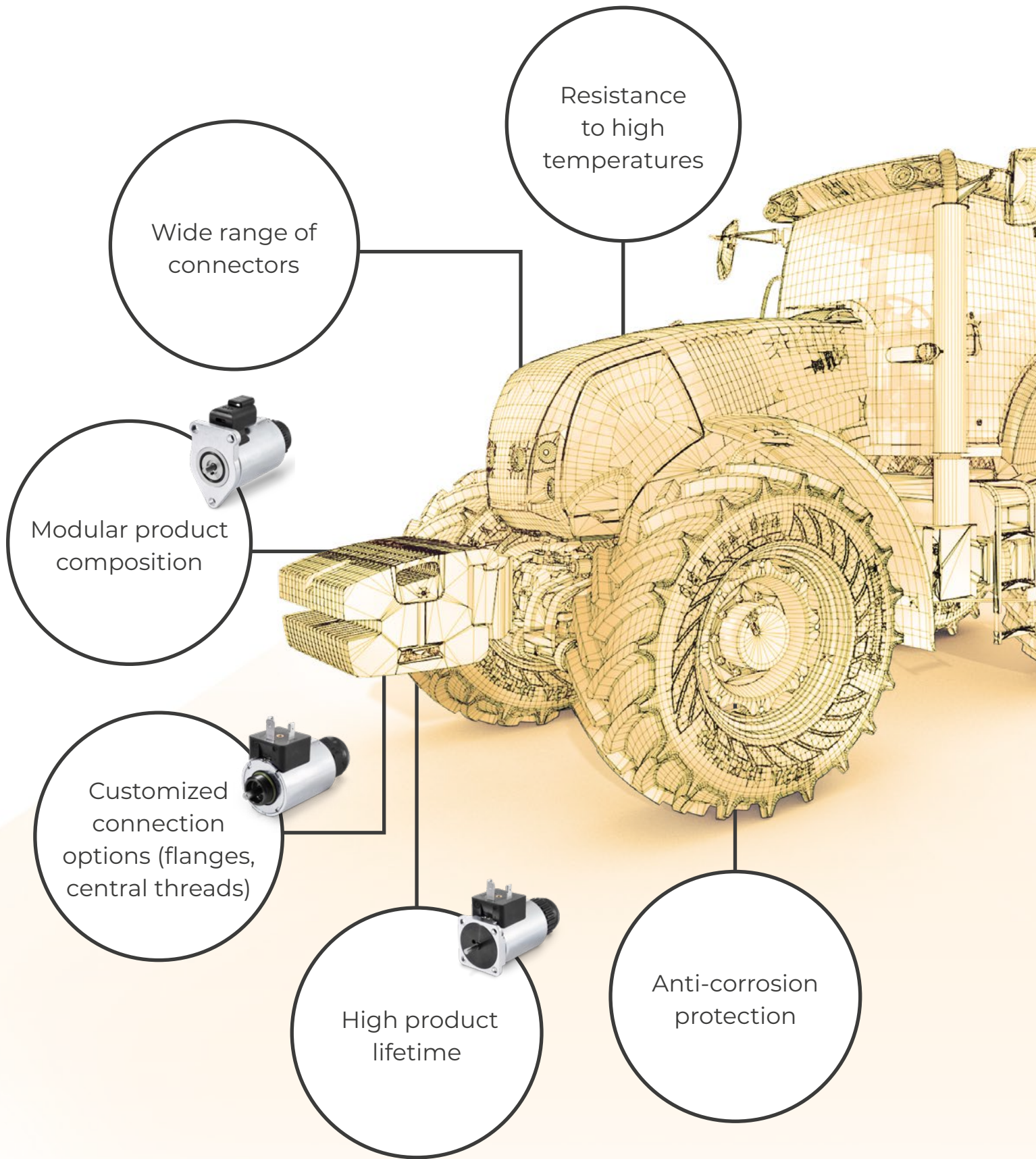


SOLERO
TECHNOLOGIES



Proportional and On-Off Solenoids

for Mobile and Standard Hydraulics



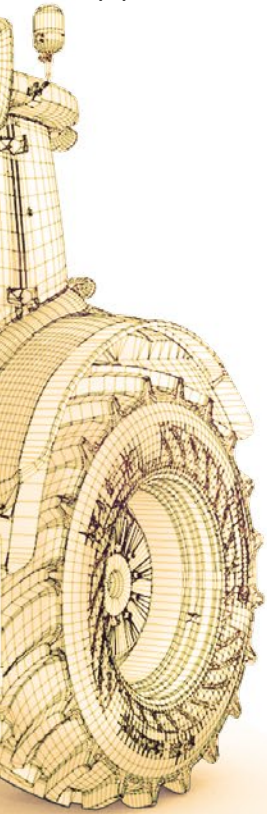
As **electromagnetic technology specialists** we offer solenoids for hydraulic applications in various standard configurations and sizes, we are also able to design solenoids for specific needs customized to customer application.

Our hydraulics solenoids are equipped with a pressure-sealed armature chamber and are maintenance-free. Their advantage is the capability of servicing the system with the hydraulic circuit remaining sealed.

The outstanding features of our solenoids are excellent proportional functions, low hysteresis, precise functions. All of this, along with consistent quality, contributes to the satisfaction of our customers.

Hydraulic solenoids

Control of pumps, motors, cartridge and cetop valves for proportional and on/off applications



Technical details

Solenoid sizes / Performance	NG4, NG6, NG10 Others available on request
Degree of protection	IP 65 – IP 69 K
Connectors	DIN 43 650, DT04 (2-pin, Deutsch-Kompagnie), AMP Junior Timer, Desina (3- and 5-pin); NG6 and NG4 also available with integrated diode
Features	<ul style="list-style-type: none"> Different voltage variants Variable temperature ranges Operating pressure 210 – 270 bar; higher dynamic operating pressures on request Resistant to external influences Various connection geometries

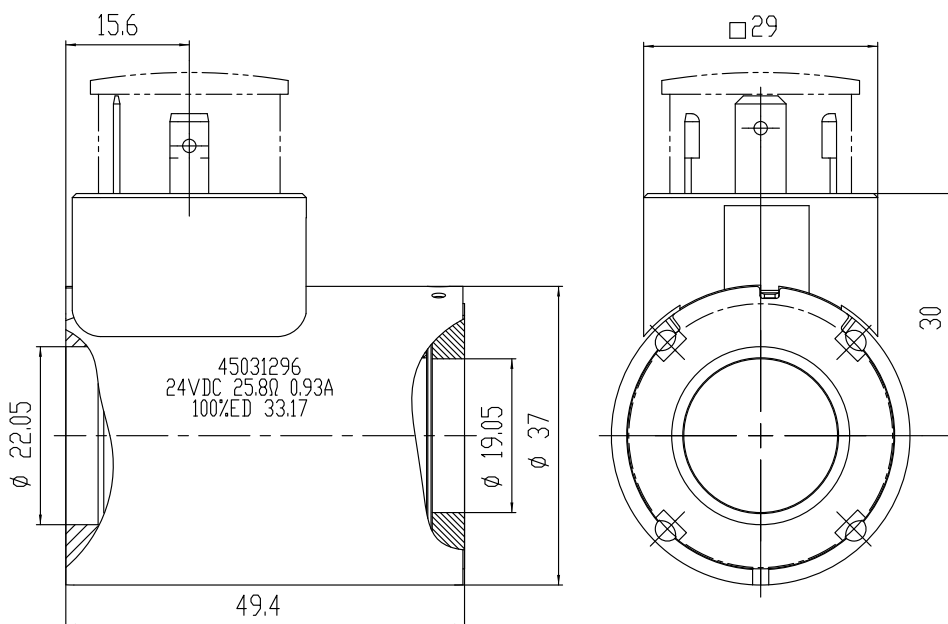


Type no.: 45 13603F4A

NG04 On/Off Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn12//An//TO
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage $U_N \pm 10\%$ [V DC]	Nominal current I_N [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_N [W]	Duty cycle ED [%]
45031295	12	2	6	24	100
45031296	24	0.93	25.8	22.3	100

Type of connector



IP65¹
DIN 43 650



IP6K9K¹
DT04-2P



IP67¹
AMP
Junior Timer
(Coding I)



IP6K9K¹
Axial AMP
Junior Timer
(Coding I / Coding II)

¹ in properly mounted condition

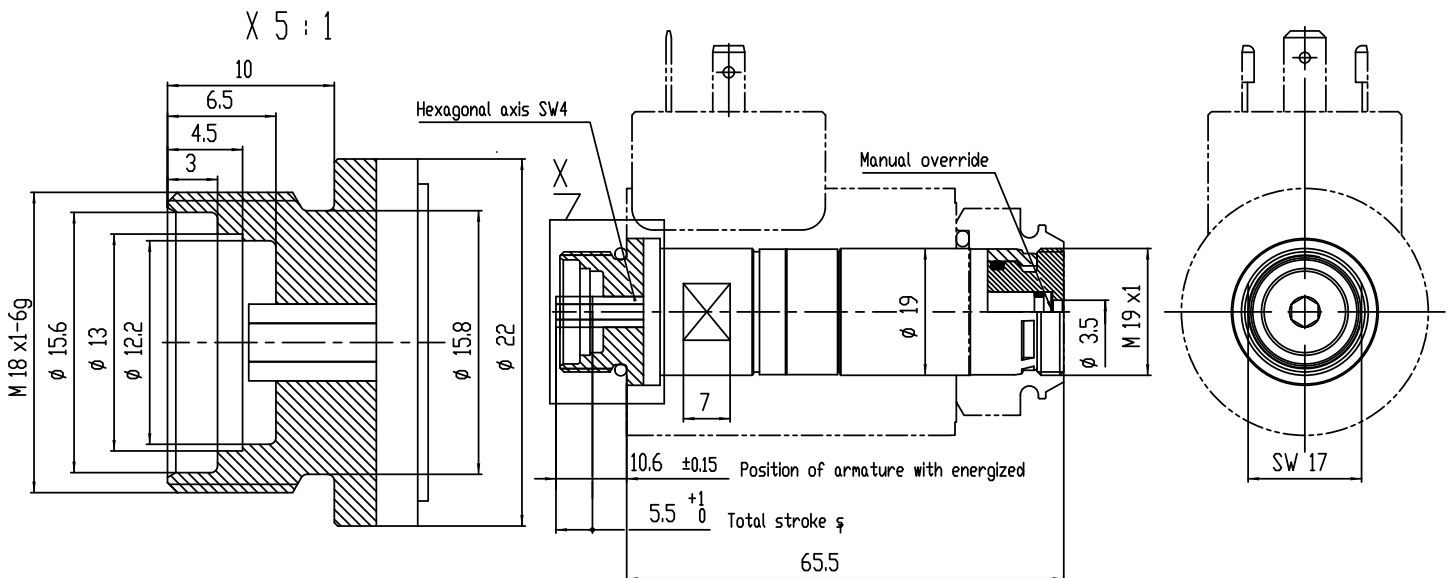
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NG04 On/Off Actuating system

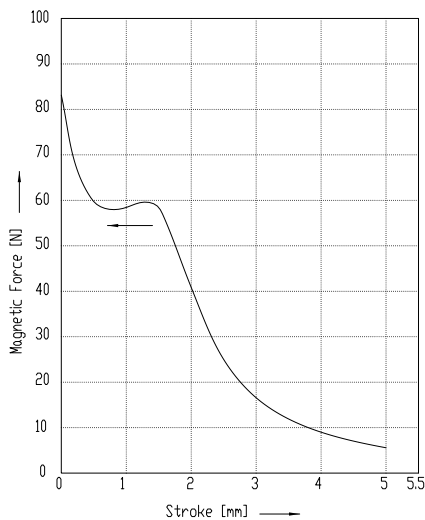


Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	46x46x66 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Sealing material	Viton
Total stroke	5.5 ⁺¹ mm
Surface protection	DIN 50979-Fe//Zn8//An//TO



F/s Characteristic



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Nominal current I_N [A]	0.93
Testing current (PWM 100Hz) $I_{test} = (0.9 \times U_N) / R_w$ [A]	0.59
Nominal power P_N [W]	22.3
Weight armature m_A [kg]	0.04
Testing speed v_{test} [mm/min]	20

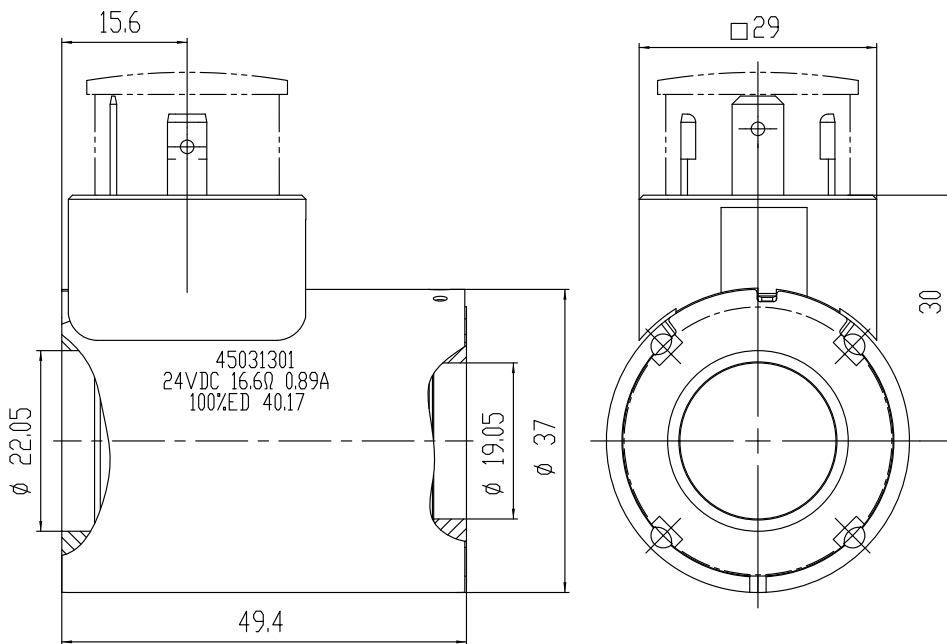
The characteristic of solenoid measured with steel hydraulic manifold.

Type no.: 45 85603E4A

NG04 Proportional Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn12//An//TO
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage U_N [V DC]	Nominal current I_{Lim} [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_{Lim} [W]	Duty cycle ED [%]
45031299	12	1.98	3.66	21.4	100
45031301	24	0.89	16.6	19.3	100

Type of connector



IP65¹
DIN 43 650



IP6K9K1
DT04-2P



IP67¹
AMP
Junior Timer
(Coding I)



IP6K9K1
Axial AMP
Junior Timer
(Coding I / Coding II)

¹ in properly mounted condition

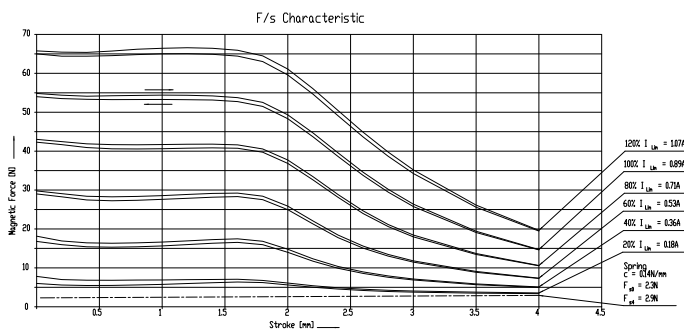
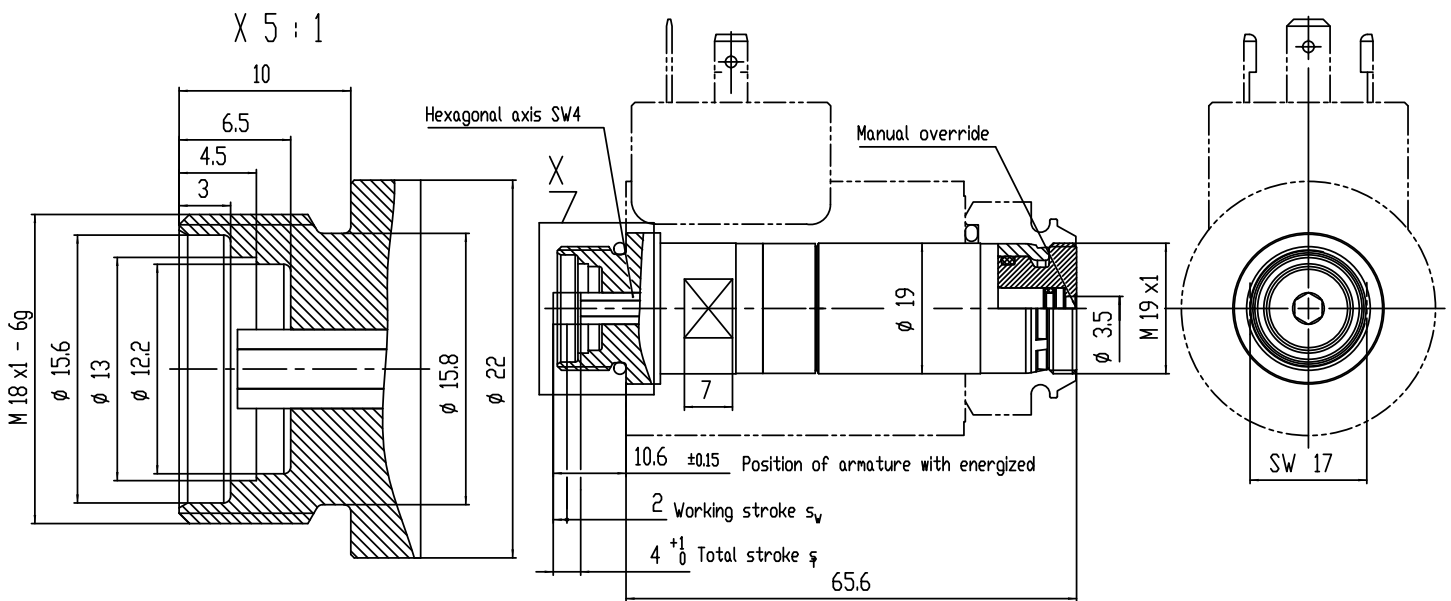
Type no.: 45 85603E3E

NG04 Proportional Actuating system



Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	46x46x66 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Mechanical lifetime	10 mil. cycles
Sealing material	Viton
Working stroke	2 mm
Total stroke	4 ⁺¹ mm
Surface protection	DIN 50979-Fe//Zn8//An//TO



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Limit current (PWM 100Hz) Testing current $I_{Lim} = I_{test}$ [A]	0.89
Limit power $P_{Lim} = I_{Lim}^2 \times R_w$ [A]	19.3
Weight armature m_A [kg]	0.04
Testing speed v_{test} [mm/min]	20

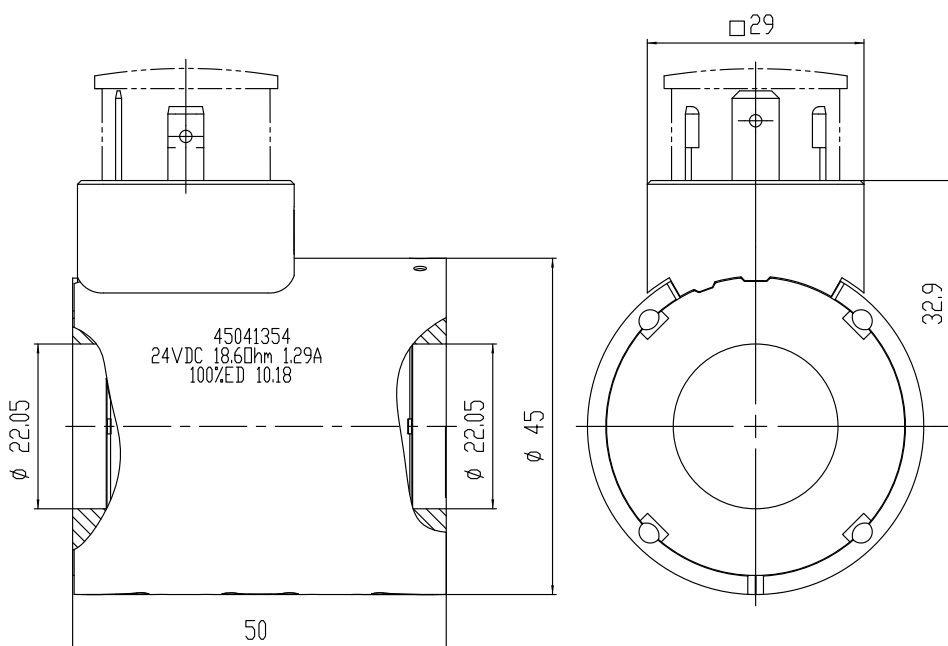
The characteristic of solenoid measured with steel hydraulic manifold.

Type no.: 45 13604K3A

NG06 On/Off Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn12//An//TO
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage $U_N \pm 10\%$ [V DC]	Nominal current I_N [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_N [W]	Duty cycle ED [%]
45041353	12	2.72	4.41	32.7	100
45041354	24	1.29	18.6	31	100

Type of connector



IP65¹
DIN 43 650



IP6K9K¹
DT04-2P
(In)



IP6K9K¹
DT04-2P
(Out)



IP67¹
AMP
Junior Timer
(Coding I)



IP6K9K¹
Axial AMP
Junior Timer
(Coding I /
Coding II)



IP65¹
M12
367038



IP65¹
M12
367039

¹ in properly mounted condition

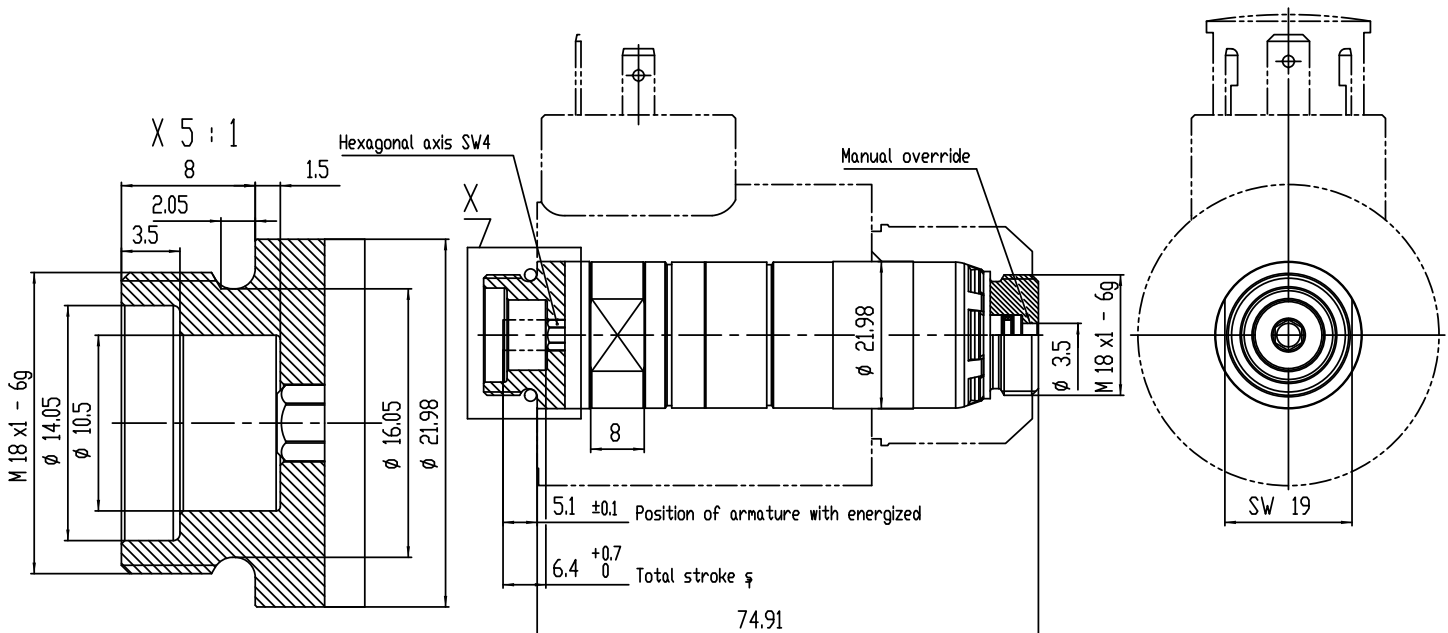
Type no.: 45 13604G0F

NG06 On/Off Actuating system

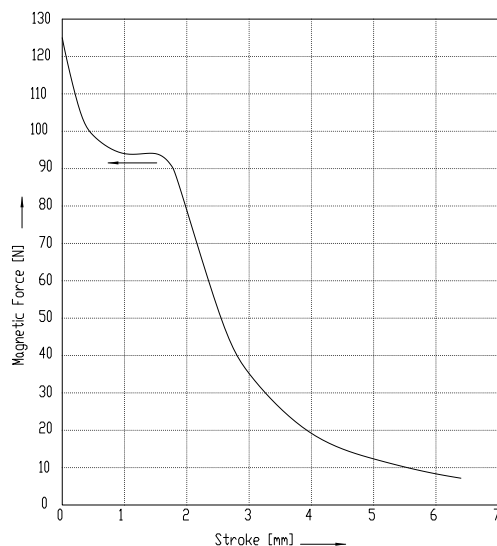


Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	46x46x66 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Sealing material	Viton
Total stroke	6.4 ^{+0.7} mm
Surface protection	DIN 50979-Fe//Zn8//An//T0



F/s Characteristic



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Nominal current I_N [A]	1.29
Testing current (PWM 100Hz) $I_{test} = (0.9 \times U_N) / R_w$ [A]	0.81
Nominal power P_N [W]	31
Weight armature m_A [kg]	0.06
Testing speed v_{test} [mm/min]	20

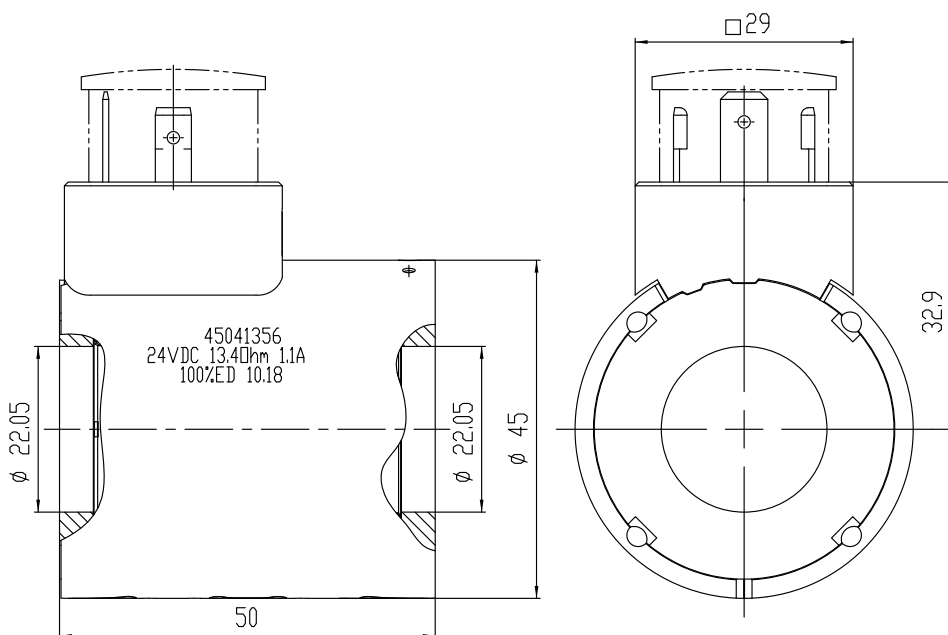
The characteristic of solenoid measured with steel hydraulic manifold.

Type no.: 45 85604E8A

NG06 Proportional Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn8//An//T0
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage U_N [V DC]	Nominal current I_{Lim} [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_{Lim} [W]	Duty cycle ED [%]
45041355	12	2.98	2.33	32.2	100
45041356	24	1.1	13.4	23.7	100

Type of connector



IP65¹
DIN 43 650



IP6K9K¹
DT04-2P
(In)



IP6K9K¹
DT04-2P
(Out)



IP67¹
AMP
Junior Timer
(Coding I)



IP6K9K¹
Axial AMP
Junior Timer
(Coding I / Coding II)

¹ in properly mounted condition

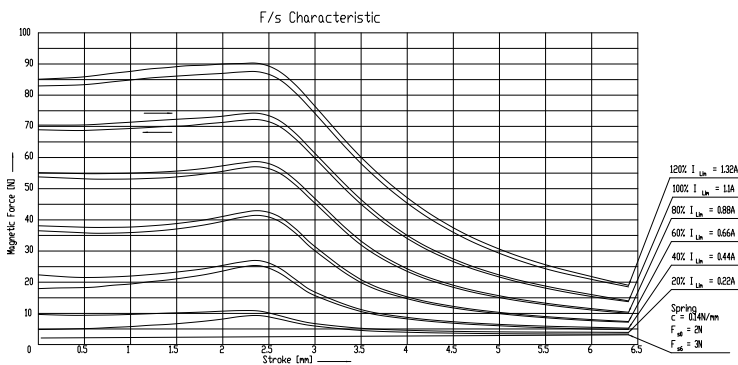
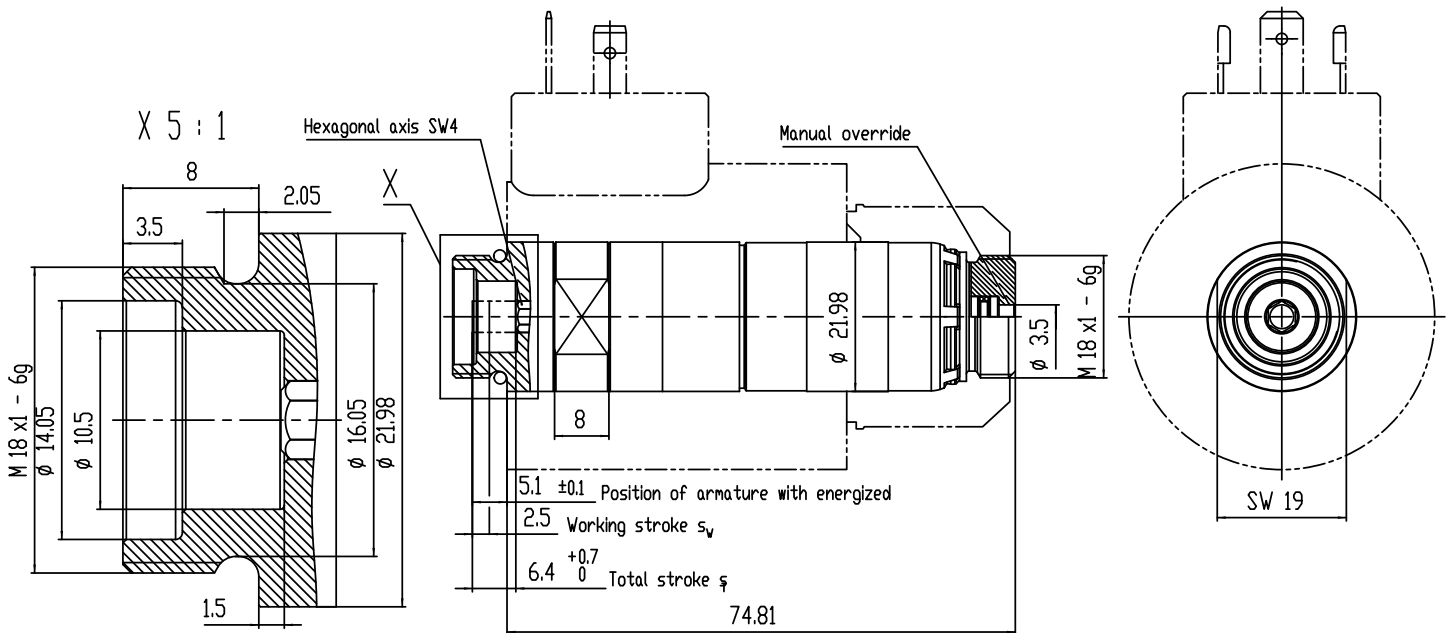
Type no.: 45 85604E8D

NG06 Proportional Actuating system



Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	46x46x66 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Mechanical lifetime	10 mil. cycles
Sealing material	Viton
Working stroke	2.5 mm
Total stroke	6.4 ^{+0.7} mm
Surface protection	DIN 50979-Fe//Zn8//An//TO



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Limit current (PWM 100Hz) Testing current $I_{Lim} = I_{test}$ [A]	1.1
Limit power $P_{Lim} = I_{Lim}^2 \times R_w$ [A]	23.7
Weight armature m_A [kg]	0.06
Testing speed v_{test} [mm/min]	20

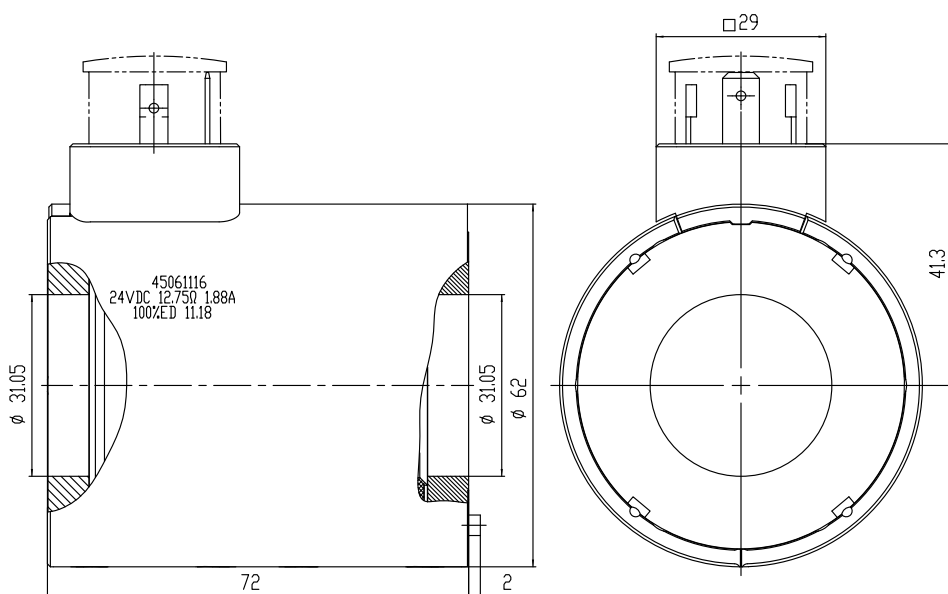
The characteristic of solenoid measured with steel hydraulic manifold.

Type no.: 45 13606E1B

NG10 On/Off Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn8//An//TO
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage $U_N \pm 10\%$ [V DC]	Nominal current I_N [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_N [W]	Duty cycle ED [%]
45061115	12	3.17	3.78	38.1	100
45061116	24	1.88	12.75	45.2	100

Type of connector



IP65¹
DIN 43 650



IP69K¹
DT04-2P

¹ in properly mounted condition

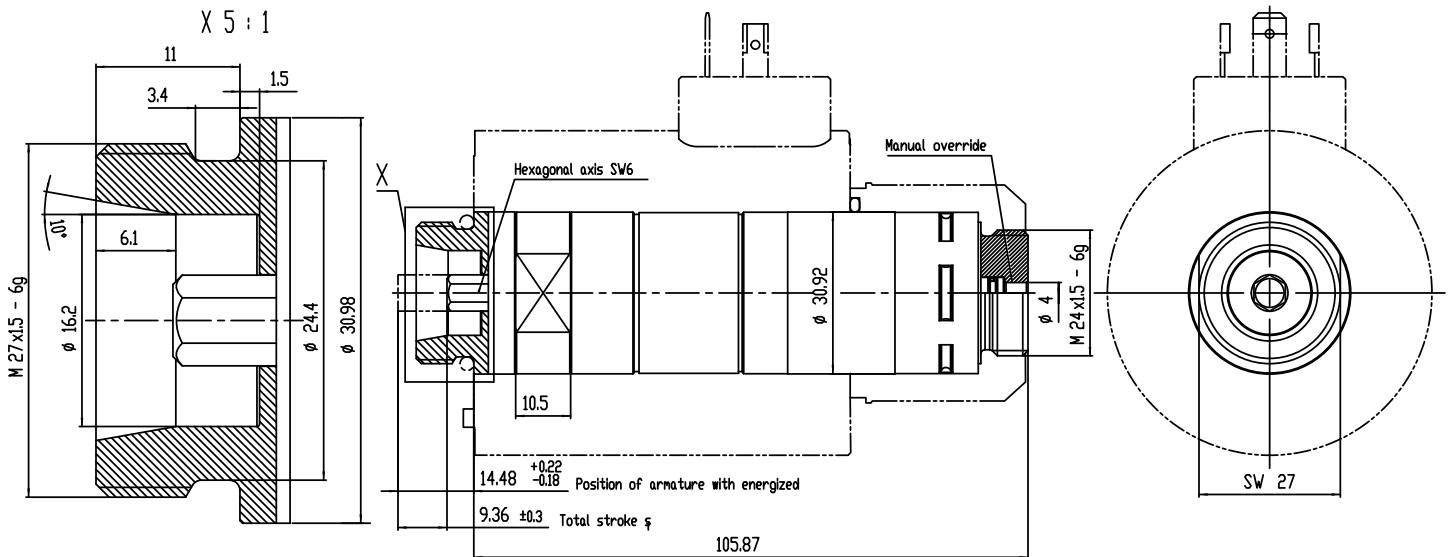
Type no.: 45 13606F4D

NG10 On/Off Actuating system

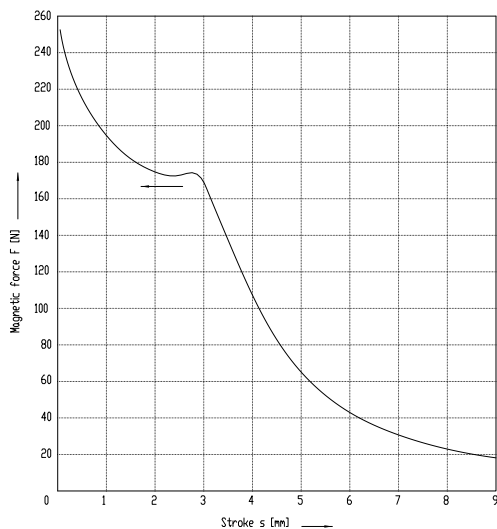


Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	70x80x102 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Sealing material	Viton
Total stroke	9.36 ^{+0.3} mm
Surface protection	DIN 50979-Fe//Zn8//An//TO



F/s Characteristic



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Nominal current I_N [A]	1.88
Testing current (PWM 100 Hz) $I_{test} = (0.9 \times U_N) / R_w$ [A]	1.21
Nominal power P_N [W]	45
Weight armature m_A [kg]	0.15
Testing speed v_{test} [mm/min]	20

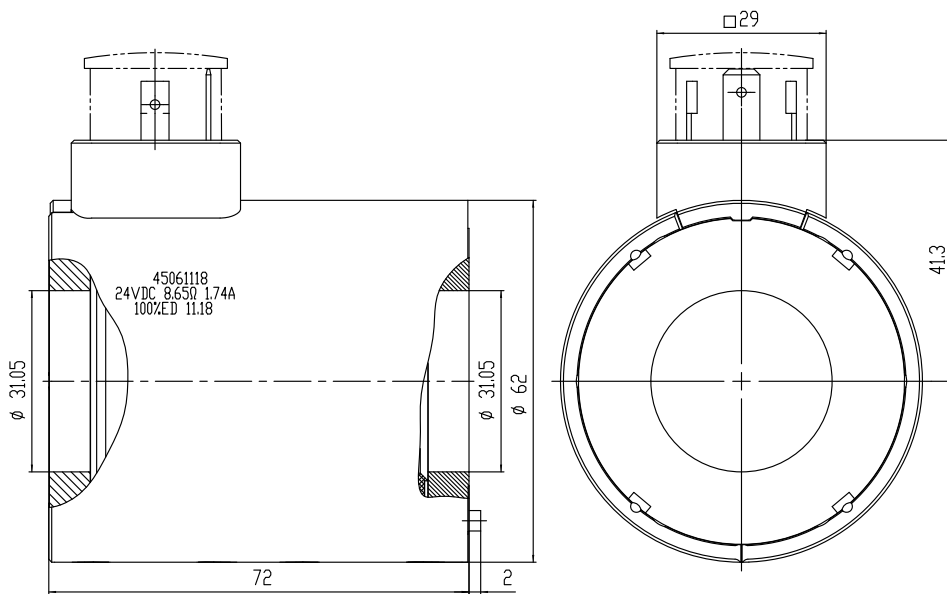
The characteristic of solenoid measured with steel hydraulic manifold.

Type no.: 45 85606E4A

NG10 Proportional Excitation system

Technical specification according to VDE 0580

Thermal class	F (155°C)
Surface protection	DIN 50979-Fe//Zn8//An//T0
Protection class (Assembled)	IP65



Electrical specification

Ident. no.	Nominal voltage U_N [V DC]	Nominal current I_{Lim} [A]	Resistance at 20°C $R_{20} \pm 6\%$ [Ω]	Nominal power P_{Lim} [W]	Duty cycle ED [%]
45061117	12	1.64	5.06	17.7	100
45061118	24	1.74	8.65	37.6	100

Type of connector



IP65¹
DIN 43 650



IP6K9K¹
DT04-2P

¹ in properly mounted condition

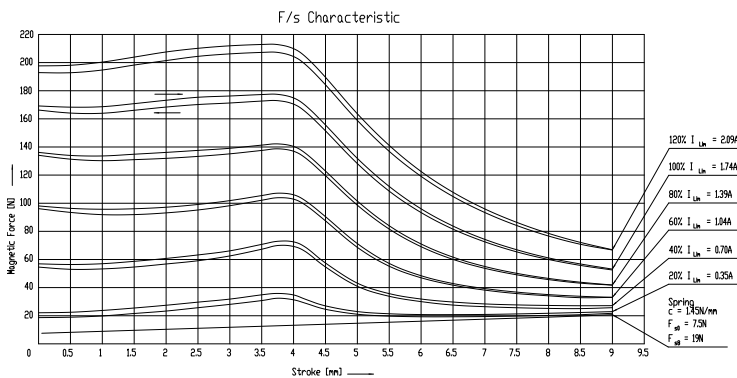
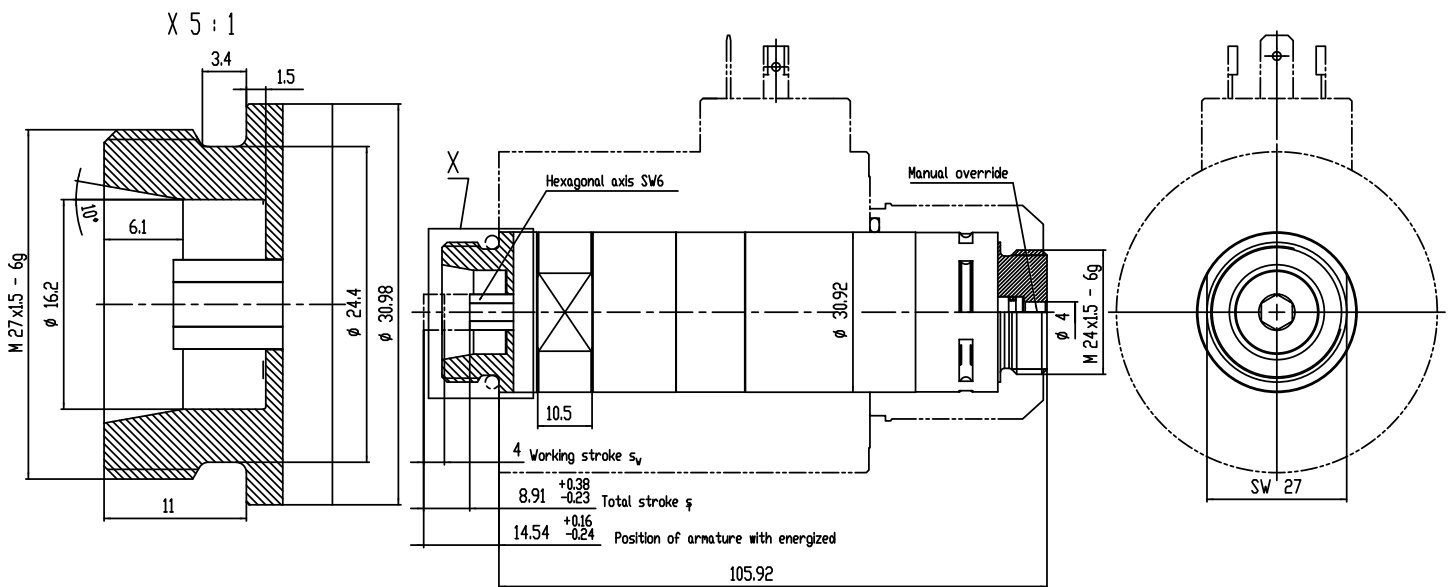
Type no.: 45 85606E5D

NG10 Proportional Actuating system



Technical specification

Ambient temperature	-20 to +50 °C
Hydraulic manifold dimensions (steel)	70x80x102 mm
Hydraulic fluid	Hydraulic oil
Max. dynamic pressure	210 bar
Max. static pressure	315 bar
Mechanical lifetime	10 mil. cycles
Sealing material	Viton
Working stroke	4 mm
Total stroke	8.91 ^{+0.38/-0.23} mm
Surface protection	DIN 50979-Fe//Zn8//An//TO



F/s Characteristic measured at

Nominal voltage U_N [V DC]	24
Duty cycle ED [%]	100
Limit current (PWM 100Hz) Testing current $I_{Lim} = I_{test}$ [A]	1.74
Limit power $P_{Lim} = I_{Lim}^2 \times R_w$ [A]	37.6
Weight armature m_A [kg]	0.15
Testing speed v_{test} [mm/min]	20

The characteristic of solenoid measured with steel hydraulic manifold.

ABOUT SOLERO

We are a global supplier for OEMs and Tier 1 in the automotive industry, specializing in Vehicle Dynamics, Fluid Management, and Transmission/E-Drive.



Contact us

We'll find the right product for your application!

Our qualified employees, the precisely defined manufacturing processes and globally-uniform, strict quality guidelines ensure top quality at the end of every production process – worldwide.

Our customers trust us because we have successfully been on the market for over 100 years, and always with the optimum for them in our focus. The cooperation with leading automotive manufacturers continually improves our know-how and processes. In this, we rely on production and logistics processes that enable both modular and individual production – regardless if large or small-lot orders are placed.




Feel free to contact us!
**We'll find the right product
for your application!**

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