

Coils for Operating Solenoids of Valves

C*

Size 03, 04, 06, 10



Technical Features

- › Wide range of coil voltages
- › Wide range of connectors and electrical connection options
- › Easy replacement of coil solenoids
- › The coils can be rotated and the required connector direction can be adjusted
- › High resistance of coils against mechanical damage
- › Coils supplied with AC current, fitted with integrated rectifier
- › Coils with protection against possible damage due to induced voltage (Transil)

Technical Data

Quantity	Unit	Value			
Nominal voltage	V	see Ordering code			
Allowable voltage fluctuation		$U_n \pm 10 \%$, if not stated otherwise in the valve data sheet			
Nominal and max. current	A	see the table of coil types			
Winding resistance at 20 °C	Ω	see the table of coil types			
Input power of coil at 20 °C	W	by calculation $P = U^2 / R$			
Max. ambient temperature	°C (°F)	50 (122), if not stated otherwise in the data sheet			
Operation conditions		see the data sheets of individual types of valves			
Max. winding temperature	°C (°F)	155 (311)			
Approximate weight of the coils	Coil size	C14	C19	C22	C31
	kg (lbs)	0.13 (0.29)	0.22 (0.48)	0.35 (0.77)	0.96 (2.12)
	Datasheet	Type			
General information	GI_0060	products and general conditions			
Connectors	K_8008	connectors EN 175301-803-A			

Product Description

Valves designed for a change of fluid direction, such as directional control valves and poppet-type valves, are often solenoid operated. Proportional valves are another large group controlling continuously parameters in the circuit within the defined interval. Electric current flowing through the coil winding creates a magnetic field. This field acts on the armature of the solenoid part and allows its shift which is then transferred to the valve control element (spool, poppet). The excitation winding made of copper wire placed on a plastic core is the basis. The coil is inserted into the steel housing amplifying the magnetic field and to protect it against mechanical damage. Moreover, the coil is molded into the housing by plastic material. The connector part coupled with the coil is also made of the same plastic. A silicone seal protects the coil space against moisture and dust.

Coil Electrical Parameters

Nominal voltages and nominal resistances (resistance value at 20°C) are listed in the coil ordering codes. Nominal currents (coils for switching valves) and maximum permissible currents (coils for proportional valves) are listed in the type table. The coils are designed for DC power supply. For AC supply, a coil with built-in rectifier or a plug-in rectifier must be used.



In operation, the output power of coils is influenced both by keeping the given values of power supply and the operation conditions. Temperature rise of the winding causes an increase in its electrical resistance when exceeding operation conditions. This reduces both current flowing through the winding and generated magnetomotive force, thus magnetic field strength is also decreased. Hydraulic power of the solenoid operated valve is also decreased in an appropriate manner.

Protection of Control Electronics

A coil is an inductive load in an electrical circuit. Any change in the current flowing through a coil (e.g. when switching off the coil circuit), voltage is induced according to Lenz's law and opposes the change that produced it. This poses a damage risk to the control electronics. Especially for proportional valves, it is appropriate to use a coil with an integrated quenching diode - or transient-voltage-suppression diode (e.g. Transil). Transil is a proven and reliable semiconductor element connected in parallel to the coil. If the threshold voltage is exceeded, electric current starts to flow through it, thereby converting overvoltage energy to heat.

Quick disconnect

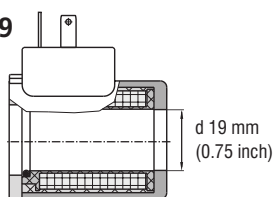
Induced voltage originating from a quick disconnect of the coil has according to Lenz's law a negative effect on OFF switching time regarding the solenoid armature. Special electronic circuit suppresses this unwanted phenomenon.

Coil sizes

Coil size	Diameter d [mm (inch)]	Valve size	Directional valves with housing		Cartridge valves		Proportional valves		
			High performance	Lightline	High performance	Lightline	Directional valves		Pressure
C14	13.4 (0.53)	Dn 03	RPEK1-03	RPEL1-04		SD2E-Ax/L SD3E-A2/L		SD3P-A2/H	SP4P1-B4
C19	19.0 (0.75)	Dn 04	RPE2-04 RPE3-04	RPEL2-06	SD2E-Ax/H SD3E-A2/H SD1E-A2 SD1E-A3 ROE3 SR1E2-A2 SR4E2-B2 SP4E1-B3	SD2E-B*/L SD3E-B2/L	PRM2-04 PRM7-04	SD3P-B2/H	SR1P2-A2 SRN1P1-A2 SR4P2-B2 SRN4P1-B2 SP4P2-B3 SPN4P1-B3 PVRM1-063
C22	22.0 (0.87)	Dn 06	RPE3-06 RPEW4-06 RPER3-06	RPEL1-10	SD2E-B*/H SD3E-B2/H SD3E-C2/H		PRM2-06 PRMR2-06 PRM7-06 PRM8-06	SD2P-B4/H SF32P-C3/H	PVRM3-10
C31	31.0 (1.22)	Dn 10	RPE4-10 RPEW4-10				PRM6-10 PRM7-10		

Example:

C19



For different sizes and versions of the valves, the appropriate coil sizes are used. Size designation corresponds approximately to the inner diameter of the coil.

Connector Types

Basic connectors used to connect the power supply of the coils:

- › Connector EN 175301-803-A (IP65)
- › Connector AMP JUNIOR TIMER (IP67)
- › Connector DEUTSCH DT04-2P (IP67 / IP69K)
- › Special 2-pin connector EW designed to be slipped into the wirebox
- › Loose conductors of standard length 300 mm (11.8 in)
- › Loose conductors equipped with the connector at the end

Other connector types available upon agreement with the manufacturer.



EN 175301-803-A



AMP JUNIOR TIMER



DEUTSCH DT04-2P



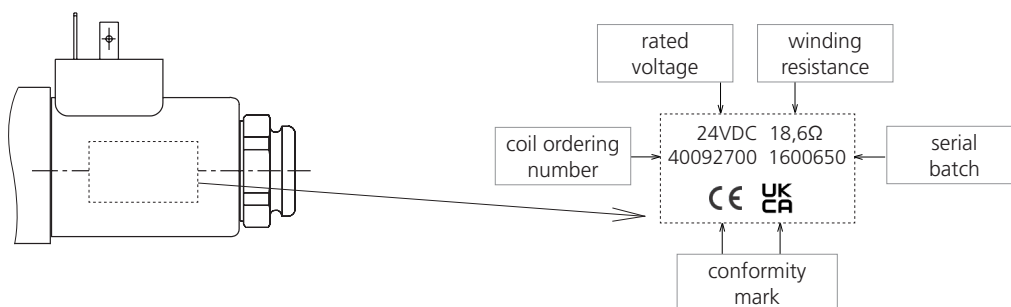
Connector EW



Loose Conductors

Identification of Coils

The **CE** and **UK CA** conformity mark placed on the coil steel housing indicates that the product is in accordance with the European directives and the relevant UK requirements.



Example of coil description:
Type sticker information can differ due to huge variety of coil designs.

Content

Ordering Code	4
Coils C14B (d = 13.4 mm (0.53 inch)).....	5
RPEK1-03, RPEL1-04	5
SD2E-A2/L, SD2E-A3/L, SD2E-A4/L, SD3E-A2/L	5
SP4P1-B4, SD3P-A2	5
Coils C19 (d = 19 mm (0.75 inch)).....	6
RPE2-04, RPE3-04, RPEL2-06, ROE3-04, ROE3-06, SR1E2-A2, SR4E2-B2, SP4E1-B3	6
SD2E-B2/L, SD2E-B3/L, SD2E-B4/L, SD3E-B2/L	6
SD2E-A2/H, SD2E-A3/H, SD2E-A4/H, SD3E-A2/H, SD1E-A2, SD1E-A3	6
RPE3-04 s certifikací CSA	6
SD2E-A2/H, SD2E-A3/H, SD2E-A4/H, SD3E-A2/H, SD1E-A2, SD1E-A3, SR4E-B2, SD3P-B2	7
PRM2-04, PRM7-04	8
PRM2-04 proporcionální rozváděče bez integrované elektroniky	8
PRM2-04, PRM7-04 proporcionální rozváděče s integrovanou elektronikou	8
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Coils C22 (d = 22 mm (0.87 inch)).....	10
RPE3-06, RPER3-06, RPEL1-10, RPE3-06 with CSA certification	10
SD2E-B2/H, SD2E-B3/H, SD2E-B4/H, SD3E-B2/H, SD3E-C2/H	10
RPEW4-06 , RPEW4-06 with CSA certification	11
SD2E-B2/H, SD2E-B3/H, SD2E-B4/H, SD3E-B2/H, SD3E-C2/H	11
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PRM2-06 proportional directional control valves with integrated electronic unit	12
PRM2-06, PRM7-06, PRM8-06, proportional directional control valves without integrated electronic unit	13
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Coils C31 (d = 31 mm (1.22 inch)).....	14
RPE4-10	14
RPEW4-10, RPEW4-10 with CSA certification	15
PRM6-10, PRM7-10	15
Dimensions in millimeters (inch)	16
Mounting / dismantling the coils	18

Ordering Code

C				-									/M
Solenoid coil													Special coil design
Coil size inner diameter of coil Ø 13.4 mm (0.53 in) 14 Ø 19.0 mm (0.75 in) 19 Ø 22.0 mm (0.87 in) 22 Ø 31.0 mm (1.22 in) 31													Type of insulating material no designation H standard for valves with CSA certification
Coil housing design version cold rolled housing A drawn housing B long drawn housing C													Housing surface treatment A zinc coated, 240 h salt spray test acc. to ISO 9227 B zinc coated, 520 h salt spray test acc. to ISO 9227
Rated voltage (on the coil terminals) 12 V DC 01200 14 V DC 01400 24 V DC 02400 27 V DC 02700 48 V DC 04800 106 V DC 10600 205 V DC 20500 115 V AC 50 Hz 11550 120 V AC 60 Hz 12060 230 V AC 50 Hz 23050													Coil detent type (for type C31 only) N without detent F with detent (by pin)
Connector type see the table													Electrical winding resistance [Ω] at 20 °C (68 °F) 300 xxx
													Length of loose conductors standard length 300 mm (11.8 in) other length in mm (in)
													Additional protection of conductors (only for loose conductors) N non-braided B braided

Not all possible combinations of parameters are produced as actual coils. If the required coil is not included in the table of the standard types, please contact our technical department to verify feasibility and identification of the specific type.

Note explaining usage of coils:

Coils with supply voltage 21 V DC are intended for rectified supply voltage 24 V AC / 50 Hz.

Coils with supply voltage 106 V DC are intended for rectified supply voltage 120 V AC / 60 Hz.

Coils with supply voltage 205 V DC are intended for rectified supply voltage 230 V AC / 50 Hz.

Coils 115 V AC / 50 Hz have a built-in rectifier.

Coils 120 V AC / 60 Hz have a built-in rectifier.

Coils 230 V AC / 50 Hz have a built-in rectifier.

Overview of connector types and electrical connections of coils

Connector	Designation	Description
EN 175301-803-A	E1	Connector EN 175301-803-A
	E2	Connector EN 175301-803-A + quenching diode
	E5	Connector EN 175301-803-A + integrated rectifier
	E51	Connector EN 175301-803-A + integrated rectifier + quick disconnect
AMP Junior Timer	E3	Connector AMP Junior Timer (2 pins)
	E4	Connector AMP Junior Timer (2 pins) + quenching diode
AMP Junior Timer axially oriented	E3A	Axial connector AMP Junior Timer (2 pins)
	E4A	Axial connector AMP Junior Timer (2 pins) + quenching diode
Deutsch DT04-2P axially oriented	E12A	Axial connector Deutsch DT04-2P (2 pins)
	E13A	Axial connector Deutsch DT04-2P (2 pins) + quenching diode
Loose conductors	E8	Loose conductors
	E9	Loose conductors + quenching diode
Loose conductors with connector	E10	Loose conductors with connector DT04-2P (2 pins)
	E11	Loose conductors with connector DT04-2P (2 pins) + quenching diode
	E16	Loose conductors with Metri-Pack connector, series 150 (2 pins)
	E17	Loose conductors with Metri-Pack connector, series 150 (2 pins) + quenching diode
	E18	Loose conductors with Weather-Pack connector (2 pins)
	E19	Loose conductors with Weather-Pack connector (2 pins) + quenching diode
	E20	Loose conductors with Weather-Pack connector (2 jacks)
	E21	Loose conductors with Weather-Pack connector (2 jacks) + quenching diode
	E22	Loose conductors with Econoseal connector (2 pins)
	E23	Loose conductors with Econoseal connector (2 pins) + quenching diode
	E24	Loose conductors with connector AMP Junior Timer (2 pins)
	E25	Loose conductors with connector AMP Junior Timer (2 pins) + quenching diode
Special connector for wirebox	EW1	Special connector for wirebox
	EW2	Special connector for wirebox + quenching diode

Coils C14B (d = 13.4 mm (0.53 inch))

RPEK1-03, RPEL1-04 SD2E-A2/L, SD2E-A3/L, SD2E-A4/L, SD3E-A2/L		→		→	

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types						
[V]		E1	E2	E3A	E4A	E12A	E13A			
12 DC	1.83	16210300	24101600	28822500	28822600	29268200	29268800			
		C14B-01200E1-6.55NA	C14B-01200E2-6.55NA	C14B-01200E3A-6.55NA	C14B-01200E4A-6.55NA	C14B-01200E12A-6.55NA	C14B-01200E13A-6.55NA			
14 DC	1.57	24102200	on request	41194600	40291000	34948600	40498900			
		C14B-01400E1-8.91NA	on request	C14B-01400E3A-8.91NA	C14B-01400E4A-8.91NA	C14B-01400E12A-8.91NA	C14B-01400E13A-8.91NA			
24 DC	0.92	16210400	24101800	28686400	28822400	29268900	29269000			
		C14B-02400E1-26.2NA	C14B-02400E2-26.2NA	C14B-02400E3A-26.2NA	C14B-02400E4A-26.2NA	C14B-02400E12A-26.2NA	C14B-02400E13A-26.2NA			
27 DC	0.80	33565000	on request	34319700	on request	43070900	40648800			
		C14B-02700E1-33.6NA	on request	C14B-02700E3A-33.6NA	on request	C14B-02700E12A-33.6NA	C14B-02700E13A-33.6NA			

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage		Current	Connector types							
[V]		[A]	E1	E2	E3A	E4A	E12A	E13A		
12 DC		1.83	42978200 C14B-01200E1-6.55NB	44465700 C14B-01200E2-6.55NB	on request	on request	32700900 C14B-01200E12A-6.55NB	on request		
14 DC		1.57	on request	on request	on request	on request	34440200 C14B-01400E12A-8.91NB	on request		
24 DC		0.92	33469800 C14B-02400E1-26.2NB	on request	41702200 C14B-02400E3A-26.2NB	on request	31145400 C14B-02400E12A-26.2NB	31145500 C14B-02400E13A-26.2NB		

SP4P1-B4

→	→	→
→	→	→
→	→	→

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types		Ambient temperature °C (°F)		Fluid temperature °C (°F)			
[V]		[A]		E1		E3A		E12A		E13A	
12 DC		max. 0.7		on request		33038300		32482500		437442	
				C14B-01200E3A-7.8NA		C14B-01200E12A-7.8NA		C14B-01200E12A-7.8NA		C14B-02400E13A-29.5NA	
24 DC		max.0.35		34056200		33038400		32482400		C14B-02400E12A-29.5NA	
				C14B-02400E1-29.5NA		C14B-02400E3A-29.5NA		C14B-02400E12A-29.5NA			

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types		Ambient temperature °C (°F)		Fluid temperature °C (°F)	
[V]		[A]		E1		E3A		E12A	
12 DC		max. 0.7		on request		on request		40933100	
								C14B-01200E12A-7.8NB	
24 DC		max. 0.35		on request		on request		34186400	
								C14B-02400E12A-29.5NB	

SD3P-A2/H

→	→	→
→	→	→
→	→	→

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage		Current	Connector types					
[V]		[A]	E1	E2	E3A	E12A	E13A	
12 DC		max. 0.950	42978200 C14B-01200E1-6.55NB	44465700 C14B-01200E2-6.5NB	on request	32700900 C14B-01200E12A-6.55NB	on request	
24 DC		max. 0.475	33469800 C14B-02400E1-26.2NB	on request	41702200 C14B-02400E3A-26.2NB	31145400 C14B-02400E12A-26.2NB	31145500 C14B-02400E13A-26.2NB	

Coils C19 (d = 19 mm (0.75 inch))

		Ambient temperature °C (°F)		Fluid temperature °C (°F)		Supply voltage tolerance % of U _n	
SD2E-B2/L, SD2E-B3/L, SD2E-B4/L, SD3E-B2/L RPE2-04, RPE3-04, RPEL2-06, ROE3-04, ROE3-04, SR1E2-A2, SR4E2-B2, SP4E1-B3 SD2E-A2/H, SD2E-A3/H, SD2E-A4/Hx, SD3E-A2/H, SD1E-A2, SD1E-A3	→	-30...+50 (-22...+122)		-30...+60 (-22...+140)		± 10	
	→	-30...+50 (-22...+122)		-30...+80 (-22...+176)		± 10	
	→	-30...+50 (-22...+122)		-30...+80 (-22...+176)		± 10	

→ limited operating conditions of the valves

Surface treatment A: 240 h salt spray test acc. to ISO 9227

		E1		E2		E3		E4		E3A		E4A		E12A		E13A	
Voltage	Current	Connector types		Connector types		Connector types		Connector types		Connector types		Connector types		Connector types		Connector types	
12 DC	2.45	27316600		27631400		27330200		27631600		27449600		27631900		27351400		27632000	
		C19B-01200E1-4.9NA		C19B-01200E2-4.9NA		C19B-01200E3-4.9NA		C19B-01200E4-4.9NA		C19B-01200E3A-4.9NA		C19B-01200E4A-4.9NA		C19B-01200E12A-4.9NA		C19B-01200E13A-4.9NA	
14 DC	1.70	27634100		27634200		27634300		27634400		27634500		27634600		27635000		27635100	
		C19B-01400E1-8.23NA		C19B-01400E2-8.23NA		C19B-01400E3-8.23NA		C19B-01400E4-8.23NA		C19B-01400E3A-8.23NA		C19B-01400E4A-8.23NA		C19B-01400E12A-8.23NA		C19B-01400E13A-8.23NA	
24 DC	1.15	27316700		27632400		27330300		27633200		27449700		27633400		27330500		27633500	
		C19B-02400E1-20.8NA		C19B-02400E2-20.8NA		C19B-02400E3-20.8NA		C19B-02400E4-20.8NA		C19B-02400E3A-20.8NA		C19B-02400E4A-20.8NA		C19B-02400E12A-20.8NA		C19B-02400E13A-20.8NA	
27 DC	0.89	27636100		27639400		27641600		27641700		27641800		27642100		27642400		27642500	
		C19B-02700E1-30.4NA		C19B-02700E2-30.4NA		C19B-02700E3-30.4NA		C19B-02700E4-30.4NA		C19B-02700E3A-30.4NA		C19B-02700E4A-30.4NA		C19B-02700E12A-30.4NA		C19B-02700E13A-30.4NA	
205 DC	0.12	27668700		not available		not available		not available		not available		not available		not available		not available	
		C19B-20500E1-2065NA															
120 AC	0.22	27642700															
60 Hz		C19B-12060E5-494NA															
230 AC	0.12	27668600															
50 Hz		C19B-23050E5-2065NA															

Surface treatment B: 520 h salt spray test acc. to ISO 9227

		E1		E2		E3		E3A		E4A		E12A		E13A	
Voltage	Current	Connector types		Connector types		Connector types		Connector types		Connector types		Connector types		Connector types	
12 DC	2.45	40134900		on request		42999500		on request		43486900		40317600		43930600	
		C19B-01200E1-4.9NB		C19B-01200E3-4.9NB		C19B-01200E3-4.9NB		C19B-01200E4-4.9NB		C19B-01200E4A-4.9NB		C19B-01200E12A-4.9NB		C19B-01200E13A-4.9NB	
14 DC	1.70	43106200		on request		on request		on request		on request		33212800		on request	
		C19B-01400E1-8.23NB		C19B-02400E2-20.8NB		C19B-02400E3-20.8NB		C19B-02400E4-20.8NB		C19B-02400E4A-20.8NB		C19B-01400E12A-8.23NB		C19B-02400E13A-8.23NB	
24 DC	1.15	28829600		32092500		on request		44017500		43191500		40384800		31330200	
		C19B-02400E1-20.8NB		C19B-02400E2-20.8NB		C19B-02400E3-20.8NB		C19B-02400E4-20.8NB		C19B-02400E4A-20.8NB		C19B-02400E12A-20.8NB		C19B-02400E13A-20.8NB	
27 DC	0.89	41167700		on request		on request		33559000		on request		on request		40052200	
		C19B-02700E1-30.4NB		C19B-02700E2-30.4NB		C19B-02700E3-30.4NB		C19B-02700E4-30.4NB		C19B-02700E3A-30.4NB		C19B-02700E4A-30.4NB		C19B-02700E13A-30.4NB	

RPE3-04 with CSA certification

Surface treatment A: 240 h salt spray test acc. to ISO 9227

		E1	
Voltage	Current	Connector types	
12 DC	2.41	24140700	
		C19A-01200E1-4.98NAH	
24 DC	1.15	24140800	
		C19A-02400E1-21NAH	

Coils C19 (d = 19 mm (0.75 inch))

SD2E-A2/H, SD2E-A3/H, SD2E-A4/H, SD3E-A2/H, SD1E-A2, SD1E-A3, SR4E2-B2		→	
Ambient temperature °C (°F)	Fluid temperature °C (°F)	Supply voltage tolerance % of U _n	
-30...+80 (-22...+176)	-30...+80 (-22...+176)	± 15	

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types		E3		E4		E3A		E4A		E12A		E13A	
[V]	[A]	[A]	[A]	E1	E2	E3	E3	E4	E4	E3A	E3A	E4A	E4A	E12A	E12A	E13A	E13A
12 DC	2,00	2,00	2,00	27669700 C19B-01200E1-6NA	27669900 C19B-01200E2-6NA	27670000 C19B-01200E3-6NA	27670100 C19B-01200E4-6NA	27670100 C19B-01200E4-6NA	27670100 C19B-01200E4-6NA	on request	on request	on request	on request	32829300 C19B-01200E12A-6NA	32829300 C19B-01200E12A-6NA	29871300 C19B-01200E13A-6NA	29871300 C19B-01200E13A-6NA
14 DC	1,70	1,70	1,70	27634100 C19B-01400E1-8,23NA	27634200 C19B-01400E2-8,23NA	27634300 C19B-01400E3-8,23NA	27634400 C19B-01400E4-8,23NA	27634400 C19B-01400E4-8,23NA	27634400 C19B-01400E4-8,23NA	27634500 C19B-01400E3A-8,23NA	27634500 C19B-01400E3A-8,23NA	27634600 C19B-01400E4A-8,23NA	27634600 C19B-01400E4A-8,23NA	27635000 C19B-01400E12A-8,23NA	27635000 C19B-01400E12A-8,23NA	27635100 C19B-01400E13A-8,23NA	27635100 C19B-01400E13A-8,23NA
24 DC	0,93	0,93	0,93	27670600 C19B-02400E1-25,75NA	27670700 C19B-02400E2-25,75NA	27670800 C19B-02400E3-25,75NA	27670900 C19B-02400E4-25,75NA	27670900 C19B-02400E4-25,75NA	27670900 C19B-02400E4-25,75NA	on request	on request	30117800 C19B-02400E4A-25,75NAC	30117800 C19B-02400E4A-25,75NAC	31330000 C19B-02400E12A-25,75NAC	31330000 C19B-02400E12A-25,75NAC	32801600 C19B-02400E13A-25,75NAC	32801600 C19B-02400E13A-25,75NAC
27 DC	0,89	0,89	0,89	27636100 C19B-02700E1-30,4NA	27639400 C19B-02700E2-30,4NA	27641600 C19B-02700E3-30,4NA	27641700 C19B-02700E4-30,4NA	27641700 C19B-02700E4-30,4NA	27641700 C19B-02700E4-30,4NA	27641800 C19B-02700E3A-30,4NA	27641800 C19B-02700E3A-30,4NA	27642100 C19B-02700E4A-30,4NA	27642100 C19B-02700E4A-30,4NA	27642400 C19B-02700E12A-30,4NA	27642400 C19B-02700E12A-30,4NA	27642500 C19B-02700E13A-30,4NA	27642500 C19B-02700E13A-30,4NA
205 DC	0,12	0,12	0,12	27668700 C19B-20500E1-2065NA	not available	not available	not available	not available	not available	not available	not available	not available	not available	not available	not available	not available	not available

[V]		[A]		E5	
120 AC	0,22	0,22	0,22	27642700 C19B-12060E5-494NA	27642700 C19B-12060E5-494NA
230 AC	0,12	0,12	0,12	27668600 C19B-23050E5-2065NA	27668600 C19B-23050E5-2065NA

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types		E3		E12A	
[V]	[A]	[A]	[A]	E1	E2	E3	E3	E12A	E12A
12 DC	2,00	2,00	2,00	42808800 C19B-01200E1-6NB	43195300 C19B-01200E2-6NB	on request	on request	40932800 C19B-01200E12A-6NB	40932800 C19B-01200E12A-6NB
24 DC	0,93	0,93	0,93	30449100 C19B-02400E1-25,75NB	41894800 C19B-02400E2-25,75NB	33090800 C19B-02400E3-25,75NB	33090800 C19B-02400E3-25,75NB	40932900 C19B-02400E12A-25,75NB	40932900 C19B-02400E12A-25,75NB

SD3P-B2/H		→	
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Ambient temperature °C (°F)	Fluid temperature °C (°F)	Supply voltage tolerance % of U _n	
-30...+80 (-22...+176)	-30...+80 (-22...+176)	± 15	

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage		Current		Connector types		E3		E4A		E12A		E13A	
[V]	[A]	[A]	[A]	E1	E2	E3	E3	E4A	E4A	E12A	E12A	E13A	E13A
12 DC	max. 1,2	max. 1,2	max. 1,2	40134900 C19B-01200E1-4,9NB	on request	42999500 C19B-01200E3-4,9NB	on request	43486900 C19B-01200E4A-4,9NB	43486900 C19B-01200E4A-4,9NB	40317600 C19B-01200E12A-4,9NB	40317600 C19B-01200E12A-4,9NB	43930600 C19B-01200E13A-4,9NB	43930600 C19B-01200E13A-4,9NB
24 DC	max. 0,6	max. 0,6	max. 0,6	28829600 C19B-02400E1-20,8NB	32092500 C19B-02400E2-20,8NB	on request	on request	43191500 C19B-02400E4A-20,8NB	43191500 C19B-02400E4A-20,8NB	40384800 C19B-02400E12A-20,8NB	40384800 C19B-02400E12A-20,8NB	31330200 C19B-02400E13A-20,8NB	31330200 C19B-02400E13A-20,8NB

Coils C19 (d = 19 mm (0.75 inch))

→ →

PRM2-04, PRM7-04

Ambient temperature °C (°F)	Fluid temperature °C (°F)
30 ...+50 (-22 ...+122)	-30 ...+80 (-22 ...+176)

PRM2-04 proportional directional control valves without integrated electronic unit

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E4	E3A	E12A	E13A
12 DC	max. 1,7		27821900 C19B-01200E1-4.68NA	on request	27822000 C19B-01200E3-4.68NA	27785600 C19B-01200E4-4.68NA	31688600 C19B-01200E3A-4.68NA	27821200 C19B-01200E12A-4.68NA	on request
24 DC	max. 0,8		27824200 C19B-02400E1-20.6NA	27824300 C19B-02400E2-20.6NA	28145200 C19B-02400E3-20.6NA	27824400 C19B-02400E4-20.6NA	31891300 C19B-02400E3A-20.6NA	30754900 C19B-02400E12A-20.6NA	29868600 C19B-02400E13A-20.6NA

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E3A	E12A	E13A
24 DC	max. 0,8		40406400 C19B-02400E1-20.6NB	43664000 C19B-02400E2-20.6NB	31805200 C19B-02400E3-20.6NB	42284300 C19B-02400E3A-20.6NB	31805300 C19B-02400E12A-20.6NB	40457400 C19B-02400E13A-20.6NB

PRM2-04, PRM7-04 proportional directional control valves with integrated electronic unit

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E4
12 DC	max. 1,7		16186100 C19A-01200E1-4.98NA	16191600 C19A-01200E2-4.98NA	16191100 C19A-01200E3-4.98NA	16191300 C19A-01200E4-4.98NA
24 DC	max. 0,8		16186200 C19A-02400E1-21NA	16191700 C19A-02400E2-21NA	16191200 C19A-02400E3-21NA	16191400 C19A-02400E4-21NA

→ →

SR1P2-A2, SRN1P1-A2, SR4P2-B2, SRN4P1-B2, SP4P2-B3, SPN4P1-B3

Ambient temperature °C (°F)	Fluid temperature °C (°F)
-30 ...+80 (-22 ...+176)	-30 ...+120 (-22 ...+248)

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E4	E3A	E12A	E13A
12 DC	max. 1		28145500 C19B-01200E1-6.5NA	28145600 C19B-01200E2-6.5NA	28145700 C19B-01200E3-6.5NA	28145800 C19B-01200E4-6.5NA	33793600 C19B-01200E3A-6.5NA	28184900 C19B-01200E12A-6.5NA	29867600 C19B-01200E13A-6.5NA
24 DC	max. 0,6		27824200 C19B-02400E1-20.6NA	27824300 C19B-02400E2-20.6NA	28145200 C19B-02400E3-20.6NA	27824400 C19B-02400E4-20.6NA	31891300 C19B-02400E3A-20.6NA	30754900 C19B-02400E12A-20.6NA	29868600 C19B-02400E13A-20.6NA

Coils C19 (d = 19 mm (0.75 inch))

SR1P2-A2, SRN1P1-A2, SR4P2-B2, SRN4P1-B2, SP4P2-B3, SPN4P1-B3		Ambient temperature °C (°F)	Fluid temperature °C (°F)
		-30...+80 (-22...+176)	-30...+120 (-22...+248)

→ →

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E2	E3	E3A	E12A	E13A
12 DC	max. 1		40406300 C19B-01200E1-6.5NB	on request	on request	40406200 C19B-01200E12A-6.5NB	on request
24 DC	max. 0.6		40406400 C19B-02400E1-20.6NB	43664000 C19B-02400E2-20.6NB	42284300 C19B-02400E3A-20.6NB	31805300 C19B-02400E12A-20.6NB	40457400 C19B-02400E13A-20.6NB

PVRM1-063		Ambient temperature °C (°F)	Fluid temperature °C (°F)
		-30...+90 (-22...+194)	-30...+90 (-22...+194)

→ →

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Max. reduced pressure 20 bar (290 PSI)

Voltage [V]	Current [A]	Connector types	E13A
12 DC	max. 1	27821300 C19B-01200E13A-6.85NA	

Surface treatment A: 240 h salt spray test acc. to ISO 9227 - Max. reduced pressure 32 bar (470 PSI)

Spannung [V]	Strom [A]	Steckertypen	E1	E3	E3A	E4	E12A	E13A
12 DC	max. 1,5		27821900 C19B-01200E1-4,68NA	27822000 C19B-01200E3-4,68NA	31688600 C19B-01200E3A-4,68NA	27785600 C19B-01200E4-4,68NA	27821200 C19B-01200E12A-4,68NA	29869000 C19B-01200E13A-4,68NA

Surface treatment B: 520 h salt spray test acc. to ISO 9227 - Max. reduced pressure 32 bar (470 PSI)

Voltage [V]	Current [A]	Connector types	E1	E3	E3A	E4	E12A	E13A
12 DC	max. 1,5		on request	on request	on request	on request	42397200 C19B-01200E12A-4,68NB	on request

Surface treatment A: 240 h salt spray test acc. to ISO 9227 - Max. reduced pressure 20 and 32 bar (290 and 470 PSI)

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E3A	E4	E12A	E13A
24 DC	max. 0,75		27824200 C19B-02400E1-20.6NA	27824300 C19B-02400E2-20.6NA	28145200 C19B-02400E3-20.6NA	31891300 C19B-02400E3A-20.6NA	27824400 C19B-02400E4-20.6NA	30754900 C19B-02400E12A-20.6NA	29868600 C19B-02400E13A-20.6NA

Surface treatment B: 520 h salt spray test acc. to ISO 9227 - Max. reduced pressure 20 and 32 bar (290 and 470 PSI)

Voltage [V]	Current [A]	Connector types	E1	E2	E3	E3A	E12A	E13A
24 DC	max. 0,75		40406400 C19B-02400E1-20,6NB	43664000 C19B-02400E2-20,6NB	31805200 C19B-02400E3-20,6NB	42284300 C19B-02400E3A-20,6NB	31805300 C19B-02400E12A-20,6NB	40457400 C19B-02400E13A-20,6NB

Ambient temperature °C (°F)	Fluid temperature °C (°F)	Supply voltage tolerance % of U _n
-30...+50 (-22...+122)	-30...+80 (-22...+176)	± 10
-30...+50 (-22...+122)	-30...+80 (-22...+176)	± 10

↑
↑ limited operating conditions of the valves →

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types							
		E1	E2	E3A	E4A	E5	E12A	E13A	
12 DC	2.72	16211400 C22B-01200E1-4.41NA	24156100 C22B-01200E2-4.41NA	24159600 C22B-01200E3A-4.41NA	24159700 C22B-01200E4A-4.41NA	not available	24930801 C22B-01200E12A-4.41NA	19695100 C22B-01200E13A-4.41NA	
		24158200 C22B-01400E1-6.55NA	24930900 C22B-01400E2-6.55NA	27662100 C22B-01400E3A-6.55NA	27662200 C22B-01400E4A-6.55NA	not available	27663000 C22B-01400E12A-6.55NA	27663100 C22B-01400E13A-6.55NA	
24 DC	1.29	16211600 C22B-02400E1-18.6NA	24157400 C22B-02400E2-18.6NA	24159800 C22B-02400E3A-18.6NA	24159900 C22B-02400E4A-18.6NA	not available	19695900 C22B-02400E12A-18.6NA	19696000 C22B-02400E13A-18.6NA	
		16211700 C22B-02700E1-25.3NA	24157600 C22B-02700E2-25.3NA	19744600 C22B-02700E3A-25.3NA	19744500 C22B-02700E4A-25.3NA	not available	27663200 C22B-02700E12A-25.3NA	27663300 C22B-02700E13A-25.3NA	
205 DC	0.15	16211500 C22B-20500E1-1400NA	not available	not available	not available	not available	not available	not available	
230 AC 50 Hz	0.15	not available	not available	not available	not available	18849000 C22B-23050E5-1400NA	not available	not available	

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Connector types									
Voltage [V]	Current [A]	E1		E2	E3A	E4A	E5	E12A	E13A
12 DC	2.72	34007700 C22B-01200E1-4.41NB		32489000 C22B-01200E2-4.41NB	43962500 C22B-01200E3A-4.41NB	on request	not available	31536900 C22B-01200E12A-4.41NB	40099400 C22B-01200E13A-4.41NB
24 DC	1.29	24156800 C22B-02400E1-18.6NB		32092900 C22B-02400E2-18.6NB	24160200 C22B-02400E3A-18.6NB	24160300 C22B-02400E4A-18.6NB	not available	31156300 C22B-02400E12A-18.6NB	33089500 C22B-02400E13A-18.6NB
27 DC	1.07	33570600 C22B-02700E1-25.3NB		on request	31802800 C22B-02700E3A-25.3NB	44646100 C22B-02700E4A-25.3NB	not available	31802900 C22B-02700E12A-25.3NB	on request

RPE3-06 with CSA certification

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage	Current	Connector types	
		E1	E5
12 DC	2.72	24154300 C22A-01200E1-4.41NAH	not available
24 DC	1.29	24154400 C22A-02400E1-18.6NAH	not available
115 AC 50 Hz	0.30	not available	24154500 C22A-1150E5-344NAH
230 AC 50 Hz	0.15	not available	24154600 C22A-23050E5-1393NAH

Coils C22 (d = 22 mm (0.87 inch))

RPEW4-06*	→		Ambient temperature °C (°F)	Fluid temperature °C (°F)	Supply voltage tolerance % of U _n
			-30...+50 (-22...+122)	-30...+80 (-22...+176)	± 10

RPEW4-06			
Surface treatment A: 240 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector types	EW2
12 DC	2.64	16205100 C22C-01200EW1-4.54NAM	16205400 C22C-01200EW2-4.54NAM
24 DC	1.32	16205000 C22C-02400EW1-18.2NAM	16205500 C22C-02400EW2-18.2NAM
106 DC	0.27	16205200 C22C-10600EW1-400NAM	not available

RPEW4-06 with CSA certification			
Surface treatment A: 240 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Typy konektorů	EW2
12 DC	2.64	24154700 C22C-01200EW1-4.54NAH/M	24155500 C22C-01200EW2-4.54NAH/M
24 DC	1.32	24154900 C22C-02400EW1-18.2NAH/M	24155300 C22C-02400EW2-18.2NAH/M
106 DC	0.27	24155100 C22C-10600EW1-400NAH/M	not available

SD2E-B2/H, SD2E-B3/H, SD2E-B4/H, SD3E-B2/H, SD3E-C2/H	→		Ambient temperature °C (°F)	Fluid temperature °C (°F)	Supply voltage tolerance % of U _n
			-30...+80 (-22...+176)	-30...+80 (-22...+176)	± 15

Surface treatment A: 240 h salt spray test acc. to ISO 9227							
Voltage [V]	Current [A]	Connector types	E1	E2	E3A	E4A	E5
12 DC	1.83	27222400 C22B-01200E1-6.55NA	27222500 C22B-01200E2-6.55NA	27222600 C22B-01200E3A-6.55NA	27222700 C22B-01200E4A-6.55NA	not available	not available
24 DC	0.95	27222800 C22B-02400E1-25.3NA	27222900 C22B-02400E2-25.3NA	27223000 C22B-02400E3A-25.3NA	27223100 C22B-02400E4A-25.3NA	not available	not available
205 DC	0.09	24160100 C22B-20500E1-2353NA	not available	not available	not available	not available	not available
230 AC 50 Hz	0.09	not available	not available	not available	not available	20004200 C22B-23050E5-2353NA	not available

Surface treatment B: 520 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector type	E13A
12 DC	1.83	40310200 C22B-01200E12A-6,55NB	on request
24 DC	0.95	30129500 C22B-02400E1-25,3NB	33028000 C22B-02400E13A-25,3NB

Coils C22 (d = 22 mm (0.87 inch))

SD2P-B4/H, PVRM3-10	→ →	Ambient temperature °C (°F) -30 ...90 (-22 ...194), +100 (212) short time	Fluid temperature °C (°F) -30 ...90 (-22 ...194), +100 (212) short time
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Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E3A	E12A	E13A
12 DC	max. 1,5	18838400 C22B-01200E1-5NA	24157900 C22B-01200E3A-5NA	18815901 C22B-01200E12A-5NA	31323800 C22B-01200E13A-5NA
24 DC	max. 1	18838300 C22B-02400E1-13.4NA	19744300 C22B-02400E3A-13.4NA	19696200 C22B-02400E12A-13.4NA	30691600 C22B-02400E13A-13.4NA

Surface treatment B: 520 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E3A	E12A	E13A
12 DC	max. 1.5	on request	41598800 C22B-01200E3A-5NB	41256200 C22B-01200E12A-5NB	on request
24 DC	max. 1	34184200 C22B-02400E1-13.4NB	33288400 C22B-02400E3A-13.4NB	40948200 C22B-02400E12A-13.4NB	28811200 C22B-02400E13A-13.4NB

PRM2-06	→ →	Ambient temperature °C (°F) 30 ...+50 (-22 ...+122)	Fluid temperature °C (°F) -30 ...+80 (-22 ...+176)
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PRM2-06 proportional directional control valves with integrated electronic unit

Surface treatment A: 240 h salt spray test acc. to ISO 9227

Voltage [V]	Current [A]	Connector types	E1
12 DC	max. 1,6	16187500 C22A-01200E1-5.15NA	
24 DC	max. 1	16186800 C22A-02400E1-13.4NA	

Coils C22 (d = 22 mm (0.87 inch))

PRM2-06, PVRM2-06, PRM7-06, PRM8-06, PRMR2-06		Ambient temperature °C (°F)	Fluid temperature °C (°F)
		30 ... +50 (-22 ... +122)	-30 ... +80 (-22 ... +176)

→ →

PRM2-06, PRM7-06, PRM8-06 proportional directional control valves without integrated electronic unit, PRMR2-06					
Surface treatment A: 240 h salt spray test acc. to ISO 9227					
Voltage [V]	Current [A]	Connector types	E1	E3A	E4A
12 DC	max. 2.5		18838500 C22B-01200E1-2.33NA	19744700 C22B-01200E3A-2.33NA	on request
24 DC	max. 1		18838300 C22B-02400E1-13.4NA	19744300 C22B-02400E3A-13.4NA	40755800 C22B-02400E4A-13.4NA

PRM2-06, PRM7-06, PRM8-06 proportional directional control valves without integrated electronic unit, PRMR2-06					
Surface treatment B: 520 h salt spray test acc. to ISO 9227					
Voltage [V]	Current [A]	Connector types	E1	E3A	E4A
12 DC	max. 2.5		34180800 C22B-01200E1-2.33NB	43850600 C22B-01200E3A-2.33NB	42752300 C22B-01200E4A-2.33NB
24 DC	max. 1		34184200 C22B-02400E1-13.4NB	33288400 C22B-02400E3A-13.4NB	on request

SF32P-C3		Ambient temperature °C (°F)	Fluid temperature °C (°F)
		-30 ... +80 (-22 ... +176)	-30 ... +80 (-22 ... +176)

→ →

B: 520 h v NSS podle ISO 9227					
Voltage [V]	Current [A]	Connector types	E1	E3A	E4A
12 DC	max. 2.6		34180800 C22B-01200E1-2.33NB	43850600 C22B-01200E3A-2.33NB	42752300 C22B-01200E4A-2.33NB
24 DC	max. 1		43534000 C22B-02400E1-13.1NB	on request	on request

Coils C31 (d = 31 mm (1.22 inch))

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RPE4-10									
Surface treatment A: 240 h salt spray test acc. to ISO 9227									
Voltage [V]	Current [A]	Connector types	E1	E2	E3	E4	E5	E12A	E13A
12 DC	3.17	16195700 C31A-01200E1-3.78FA	27660800 C31A-01200E2-3.78FA	16197001 C31A-01200E3-3.78FA	16196901 C31A-01200E4-3.78FA	not available	not available	33252200 C31A-01200E12A-3.78FA	on request
14 DC	2.98	16195900 C31A-01400E1-4.73FA	27660900 C31A-01400E2-4.73FA	on request	on request	not available	on request	on request	on request
24 DC	1.73	16196100 C31A-02400E1-13.9FA	23896000 C31A-02400E2-13.9FA	16197201 C31A-02400E3-13.9FA	16197101 C31A-02400E4-13.9FA	not available	not available	33252300 C31A-02400E12A-13.9FA	34234400 C31A-02400E13A-13.9FA
27 DC	1.52	16196300 C31A-02700E1-17.8FA	27661000 C31A-02700E2-17.8FA	27661301 C31A-02700E3-17.8FA	27661401 C31A-02700E4-17.8FA	not available	not available	on request	33863900 C31A-02700E13A-17.8FA
205 DC	0.20	16196700 C31A-20500E1-1027FA	not available	not available	not available	not available	not available	not available	not available
230 AC 50 Hz	0.20	not available	not available	not available	not available	not available	16195101 C31A-23050E5-1027FA	not available	not available

RPE4-10									
Surface treatment B: 520 h salt spray test acc. to ISO 9227									
Voltage [V]	Current [A]	Connector types	E1	E2	E3	E4	E12A		
12 DC	3.17	40135200 C31A-01200E1-3.78FB	on request	on request	on request	on request	41292600 C31A-01200E12A-3.78FB		
24 DC	1.73	31648900 C31A-02400E1-13.9FB	42422000 C31A-02400E2-13.9FB	29427901 C31A-02400E3-13.9FB	on request	on request	41292600 C31A-02400E12A-13.9FB		
27 DC	1.52	40167600 C31A-02700E1-17.8FB	not available	31803101 C31A-02700E3-17.8FB	on request	on request	on request		
205 DC	0.20	34353800 C31A-20500E1-1027FB	not available	not available	not available	not available	not available		

Coils C31 (d = 31 mm (1.22 inch))

RPEW4-10	→	Ambient temperature °C (°F) -30...+50 (-22...+122)	Fluid temperature °C (°F) -30...+80 (-22...+176)	Supply voltage tolerance % of U _n ± 10
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RPEW4-10 (Wirebox)			
Surface treatment A: 240 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector types	
12 DC	3.17	24172000 C31A-01200EW1-3.78FA/M	
24 DC	1.73	24172200 C31A-02400EW1-13.9FA/M	
106 DC	0.38	24172400 C31A-10600EW1-276FA/M	

RPEW4-10 with CSA certification			
Surface treatment A: 240 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector types	
120 AC 60 Hz	0.38	24172600 C31A-10600EW1-276FAH/M	

PRM6-10, PRM7-10	→	Ambient temperature °C (°F) 30 ...+50 (-22 ...+122)	Fluid temperature °C (°F) -30...+80 (-22...+176)	
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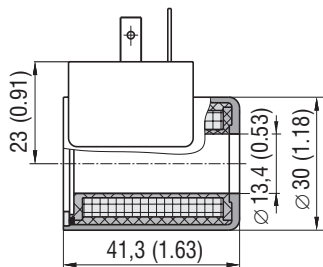
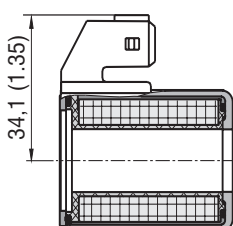
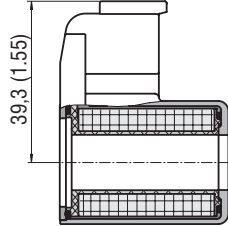
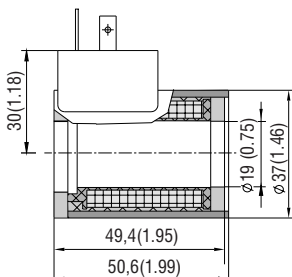
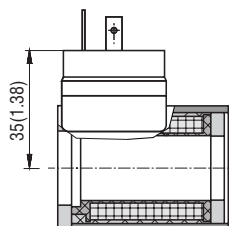
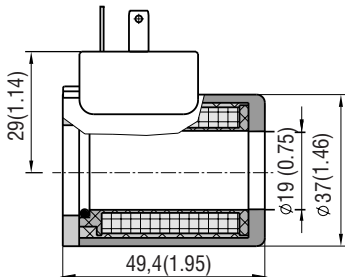
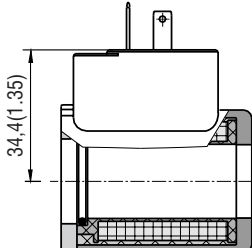
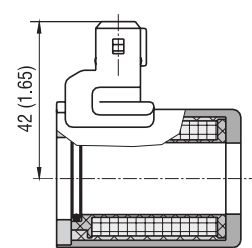
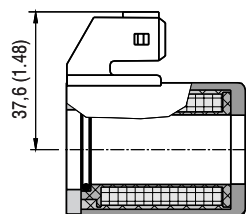
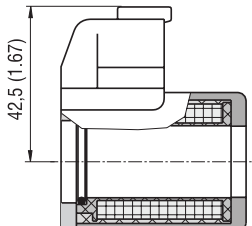
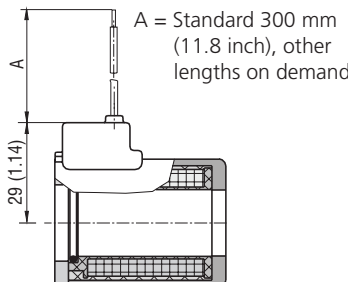
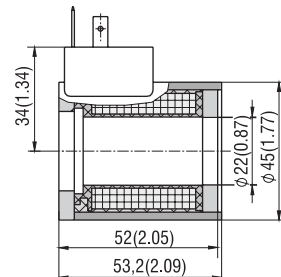
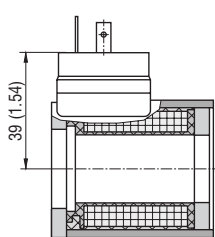
Surface treatment A: 240 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector types	
12 DC	max. 1,9	16195800 C31A-01200E1-4.73FA	
24 DC	max. 1,1	16196100 C31A-02400E1-13.9FA	

Voltage [V]	Current [A]	Connector types	
12 DC	max. 1,9	16195800 C31A-01200E1-4.73FA	
24 DC	max. 1,1	16196100 C31A-02400E1-13.9FA	

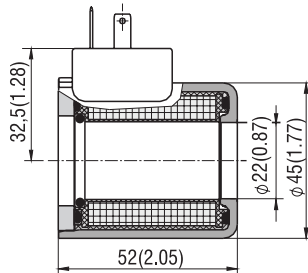
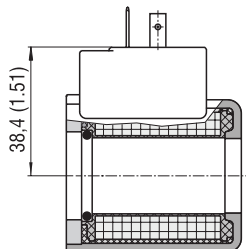
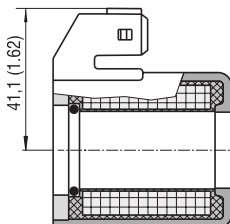
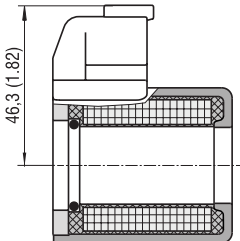
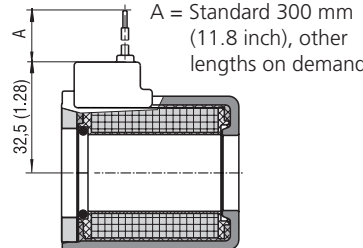
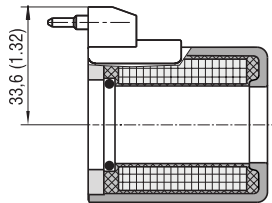
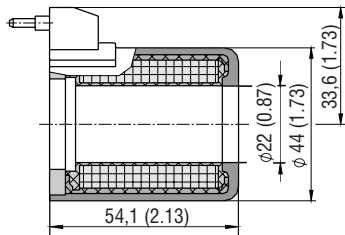
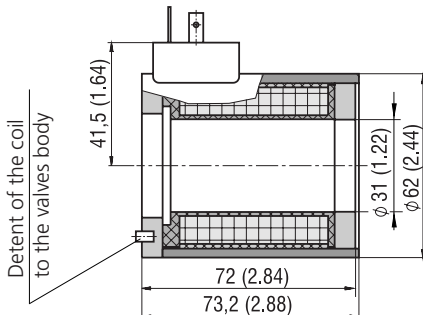
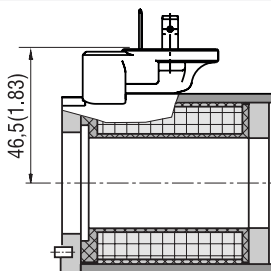
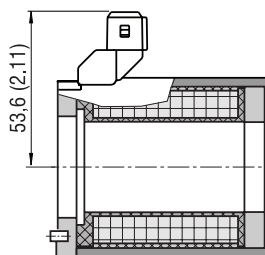
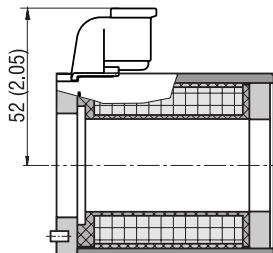
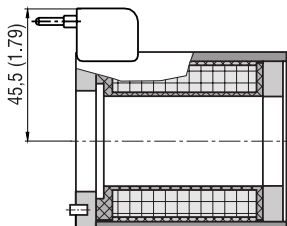
Surface treatment B: 520 h salt spray test acc. to ISO 9227			
Voltage [V]	Current [A]	Connector types	
12 DC	max. 1,9	31648900 C31A-02400E1-13.9FB	
24 DC	max. 1,1	42422000 C31A-02400E2-13.9FB	

Voltage [V]	Current [A]	Connector types	
12 DC	max. 1,9	31648900 C31A-02400E1-13.9FB	
24 DC	max. 1,1	42422000 C31A-02400E2-13.9FB	

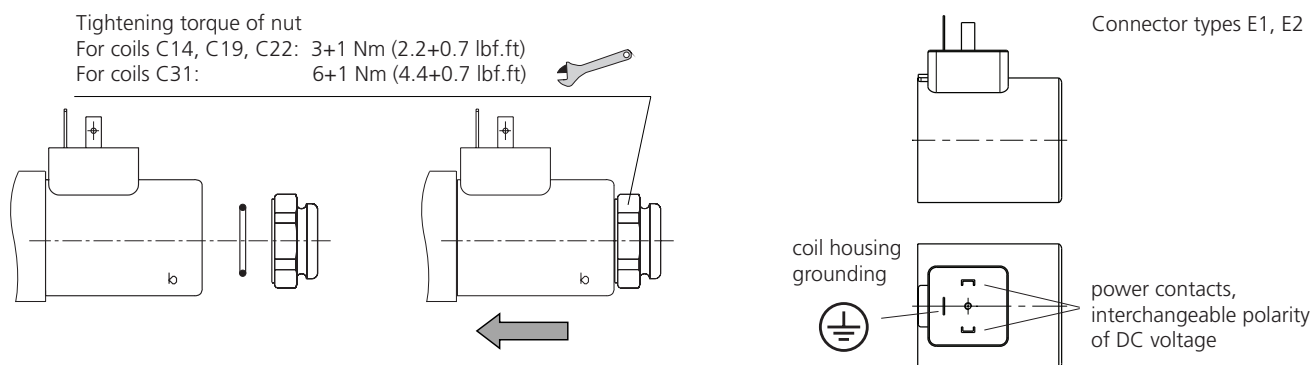
Dimensions in millimeters (inch)

C14B					
E1, E2		IP65	E3A, E4A		IP67
					
C19A					
E1, E2		IP65	E5		IP65
					
C19B					
E1, E2		IP65	E5, E51		IP65
					
E3A, EA4		IP67	E12A, E13A		IP67 / IP69K
					
C22A					
E1, E2		IP65	E5		IP65
					

Dimensions in millimeters (inch)

C22B			
E1, E2	IP65	E5, E51	IP65
			
			
E12A, E13A	IP67 / IP69K	E8, E9	
			
			
C22C			
EW1, EW2	IP65		
			
C31A			
E1, E2	IP65	E5, E51	IP65
			
			
E12A, E13A	IP67 / IP69K	EW1	IP65
			

Mounting / dismantling the coils



- › Choose the correct coil type according to the valve type given in this data sheet HA 8007. When AC power supply is chosen, the connector with integrated rectifier or the connector plug with integrated rectifier must be used.
- › The coil is placed on the solenoid actuating system (as indicated in the picture) and its position is fixed by a nut. The nut must be tightened with the specified torque.
- › The connector position can be set by rotating the coil around its longitudinal axis - continuously in the range of 0 - 360° / by 90° for coils with a locating pin.



CAUTION

- › Coil mounting, especially the connection to power supply, must be carried out by a competent person only.



WARNING

- › Before any handling the coil must be disconnected from the power supply.
- › The hydraulic circuit must be switched off and unloaded during installation.
- › Disconnect the coil from the power supply before dismantling and let it cool down to avoid burns. The temperature may exceed 100 °C (212 °F) during operation.

Operation

Basic operating parameters are stated in the data sheet of the relevant solenoid operated valve and the coil description is given in the data sheet HA 8007.



CAUTION

- › The electrical supply parameters must be appropriate for the coil type. The coils on switching valves are voltage controlled. The supply voltage should be within $\pm 10\%$ of the nominal voltage unless otherwise specified in the valve catalog. Coils on proportional valves are current controlled. The limit (maximum current) that may flow through the coil on a continuous basis is listed in the coil type table.
- › The coil may be energized only if correctly placed on the solenoid actuating system and properly fixed by a nut.
- › If a valve is operated by two solenoids acting in the opposite directions, the two solenoids must never be energized simultaneously.
- › Protect the coil against the effects of high temperatures and thermal shocks. The operating temperature range of hydraulic fluid and maximum ambient temperature are stated in the data sheet of the given valve. In general, there must be a sufficient heat removal from the coil so that the mean winding temperature does not exceed 155 °C (311 °F).
- › Protect the coil against peak voltages by a suitable overvoltage protection.
- › Protect the coil against mechanical damage, excessive vibrations and shocks.
- › Protect the coil against effects of a corrosive environment and aggressive chemicals.
- › The coil is not designed for operation immersed in fluid.



WARNING - notices regarding the residual risks

- › Damaged coils, coils with damaged parts of the power supply connector or a damaged cable must be taken out of operation immediately. There is a possibility of electric shock.
- › Don't touch the coil surface during operation. The coil becomes warm and there is a risk of burns.



Applicability of legal regulations

The following requirements apply to the coils:

- › Directive 2014/30/EU for electromagnetic compatibility of electrical equipment
- › Directive 2014/35/EU for low voltage equipment with rated voltage higher than 75 V DC and 50 V AC, respectively.

Coils are designated by the CE conformity mark and they are delivered with instructions. The declaration of conformity is issued for each item.

Tests of coils according to the CSA standard are carried out together with the hydraulic part. The certification covers the complete directional control valves.