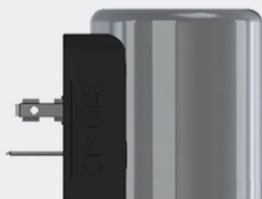


TYPES OF CONNECTION

G



T



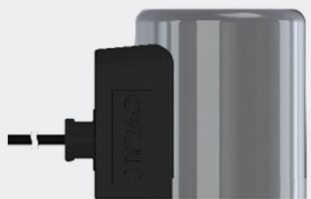
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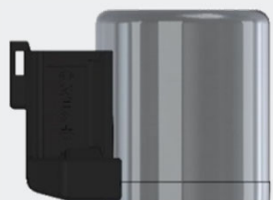
K



L



N



O



Solenoid Coils for Directional Valves

solenoid-operated

Coil design A and D

FEATURES

- **Maximum power for minimum space requirement**
due to layer-wound coil - maximum copper insertion for minimum space requirement. Avoidance of damage to the wire insulation (failure due to short circuits).
- **Fully encapsulated coil**
Internal coil seal prevents moisture from penetrating and short circuits in the winding.
- **Designed for 100% duty cycle**
- **Low energy consumption**
Optimum power/energy ratio dimensioning.
- **High mechanical resistance and corrosion protection**
thanks to zinc-nickel coated steel jacket
- **High thermal resilience**
Coil wire temperature class 200°C
- **Seven different types of electrical connections as a standard with protection classes of IP65 or IP67**
- **Mounting direction optional**
due to symmetrical coil construction

CONTENTS

Features	1
Types of connection	1
Specifications	2
Model code	2
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Dimension	8
Assignment of valve - coil	9
Coil types with suppressor diodes for DN, DU and DT	11

SPECIFICATIONS

Duty cycle	100% ED (S1) up to max. 115% of the rated voltage for 1329 and 1836 max. 110% of the rated voltage for 2345 and 3164 at max. 60°C* ambient temperature
Coil (acc. to DIN VDE 0580)	Insulating material class H for 1836 and 1329 Insulating material class F for 2345 and 3164
Max. permissible winding temperature	180°C for 1329 and 1836 155°C for 2345 and 3164
Max. surface temperature of steel at 100% ED	> 100°C for 1329, 1836, 2345 and 3164
Ambient temperature range	-30°C to +60°C for 1329, 1836 and 2345 -30°C to +50°C for 3164
Coil casing	Steel, zinc-nickel coated
Connector socket	Polyamide, black

*This values applies to a valve installed in standard in-line bodies. It is then possible to expand the max. ambient temperature range to +80°C if the surface temperature of the receiver casing is limited to a max. of 100°C during operation due to a suitable heat dissipation. The heat dissipation is to be ensured in the application, e.g. via convection or a flow of pressure fluid through the control manifold at all times during valve operation. For more information see brochure 53.000 "Conditions and Instructions for valves".

NOTICE

All technical data refer to a coil mounted on a valve.

MODEL CODE

The model code is for information only. For types available, see chart "Available coil types".

Coil 12 DN 01 - 40-1836 -

Basic model

Rated voltage

12 V DC
24 V DC
115 V AC (only type G)
230 V AC (only type G)
other voltages on request

Type of voltage

D = direct current (DC)
A = alternating current (AC)

Type of connection (specification of protection class acc. to EN 60529)

G = Connector design A acc. to DIN EN 175301-803, radial, protection class IP65
T = AMP Junior Timer 2-pole, radial, protection class IP65/IP67
U = AMP Junior Timer 2-pole, axial, protection class IP65/IP67
K = Kostal screw connection, M 27x1, 2-pole, radial, protection class IP65/IP67
L = Connection with 2 free single leads, 0.75 mm², 457 mm (18") long, radial, IP65/IP67
N = Deutsch connector DT04-2P, 2-pole, axial, protection type IP65/IP67
O = M12 connector, radial, IP65
other connection types on request

Variant (dependent on type of connection)

Not specified = standard
01 = bidirectional suppressor diode for DN, DT, DU
02, 03, ... = different cable lengths for DL

Installation size of the coil

75-3164 = Coil length 75 mm (31 mm inner-Ø, 64 mm outer-Ø)
50-2345 = Coil length 50 mm (23 mm inner-Ø, 45 mm outer-Ø)
50-1836 = Coil length 50 mm (18 mm inner-Ø, 36 mm outer-Ø)
40-1836 = Coil length 40 mm (18 mm inner-Ø, 36 mm outer-Ø)
32-1329 = Coil length 32 mm (13 mm inner-Ø, 29 mm outer-Ø)

Optional specifications

NOTICE

All information about the protection class only applies with the appropriate and correctly mounted cable socket.

DESCRIPTION

The solenoid coil is manufactured as a DC coil as standard. Solenoid coils in coil design A for operation on AC voltage have an integrated bridge rectifier.

On request, solenoid coils can be fitted with an integrated suppressor diode to protect against voltage surges for reducing the switch-off induction voltage.

For coils with a DIN connector acc. to EN 175301-803, a connecting socket (mat. no. 394287) is available.

In general, special coils are available on request - please consult your sales partner.

The prerequisite for complying with the protection type (IP code) is the correct installation of the coil on the valve and the use of a contacting appropriate to the protection type.

NOTE

UL V0 = Coils with flame rating V-0 as per UL94

AVAILABLE COIL TYPES

COIL TYPE G

IP65

DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R_{20} [Ω]	Current [A]	Part no.
32-1329	12	11.8	12.2	0.984	2610160
	20	11.8	33.8	0.594	2611288
	24	11.8	48.7	0.493	2610161
	26	11.8	57.3	0.454	3709203
	105	11.3	980	0.107	2610156
All UL V0	205	11.3	3700	0.055	2610159
40-1836	10	18	5.4	1.852	3003128
	12	18	8	1.5	3000489
	12 UL V0	18	8	1.5	3399930
	13	19	8.8	1.477	4058149
	24	19	30	0.8	3000249
	24 UL V0	19	30	0.8	3399932
	26	19.3	35	0.743	3614877
	28	19	41	0.683	3104545
	36	20	65	0.554	3003151
	48	20	116	0.414	3003155
	72	18	282	0.255	3020353
	110	20	607	0.181	3003142
	125	19.5	800	0.156	3401209
	205	20	2137	0.096	3173182
220	20	2350	0.094	3529173	
50-1836	12	26.7	5.4	2.222	915151
	12 UL V0	26.7	5.4	2.222	3401711
	20	26	15.5	1.290	3874682
	24	27.2	21.2	1.132	915142
	24 UL V0	27.2	21.2	1.132	3401712
	26	26.6	25.4	1.024	3614878
	28	27	29	0.966	3504099
	48	26	89	0.539	3091591
	110	26	467	0.236	3091592
	125	26	600	0.208	3400879
220	24	2000	0.11	3529174	
50-2345*	12	30	5.2	2.308	3274860
	12 -S	30	5.2	2.308	4244169
	12 UL V0	30	5.2	2.308	3401761
	24	30	19.2	1.25	3274861
	24 -S	8	68.5	0.350	4277864
		30	19.2	1.25	4244171
	24 UL V0	30	19.2	1.25	3401763
	28	30	26.1	1.073	4093484
	48	30	76.8	0.625	4375720
	80	30	200	0.4	3197677

DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
50-2345*	96	32	288	0.333	4224852
	96 -S	32	288	0.333	4244173
	110 -S	32	372	0.296	4330790
	205	33	1285	0.160	4224854
	205 -S	33	1285	0.160	4244275
	220 -S	32	1489	0.148	4386106
75-3164	12	38	3.79	3.166	4251228
	24	38	15.16	1.583	4251230
	96	38	242.5	0.396	4251232
	110	38	318.4	0.345	4251233
	125	38	411.2	0.304	4251234
	205	38	1105.9	0.185	4251234
	220	38	1273.7	0.173	4251257

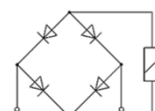
* Coils with version -S are designed for industrial valves of the series A01. For more information, see chapter "Assignment of valve - coil" on page 9 or in brochure 5.249.19 "Accessories for industrial valves".

ALTERNATING CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
40-1836	24	18	24.8	-	3003122
	48	19	95	-	3301143
	100	18	394	-	3899699
	115	20	500	-	3003156
	230	20	2137	-	3002594
50-1836	24	25	18	-	3091593
	48	25	73	-	3019734
	110	25	383	-	3019735
	230	25	1680	-	3019736
50-2345*	110	30	288	-	4224861
	110 -S	30	288	-	4244174
	120 -S	30	372	-	4348779
	230	30	1285	-	4224863
	230 -S	30	1285	-	4244276
75-3164	110	38	242.5	-	4384591
	120	45	242.5	-	
	230	38	1106	-	4407514

* Coils with version -S are designed for industrial valves of the series A01. For more information, see chapter "Assignment of valve - coil" on page 9 or in brochure 5.249.19 "Accessories for industrial valves".

NOTE: Rectifier is integrated in coil socket. Design as a bridge rectifier



COIL TYPE K
IP65/IP67
DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
40-1836	10	18	5.4	1.852	3003125
	12	18	8	1.5	3003133
	24	19	30	0.8	3003138
	28	19	41.7	0.671	3794789
	36	20	65	0.554	3003148
	48	20	116	0.414	3003153
	72	18	282	0.255	3807768
50-1836	10	26	3.8	2.632	3091678
	12	27	5.4	2.222	3091679
	24	27	21	1.143	3091681
	28	27	29	0.966	3830428
	36	27	48.5	0.742	3091683
	48	26	89	0.539	3091684

COIL TYPE L
IP65/IP67
DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
32-1329 All UL V0	12	11.8	12.2	0.984	2610151
	24	11.8	48.7	0.493	2610162
40-1836	10	18	5.4	1.852	3003135
	12	18	8	1.5	3002244
	24	19	30	0.8	3003119
	28	19	41	0.683	3263948
	36	20	65	0.554	3003140
	48	20	116	0.414	3003149
	72	18	282	0.255	3662777
50-1836	10	26	3.8	2.632	3112950
	12	27	5.4	2.222	3091633
	24	27	21	1.143	3112951
	36	27	48.5	0.742	3112952
	48	26	89	0.539	3112953
50-2345	12	22	6.6	1.818	4288257
	24	22	26.1	0.920	3488338
	32	22	46.55	0.687	3863110
	34	22	52.55	0.647	3844024
	36	22	58.8	0.612	3538813

COIL TYPE N
IP65/IP67
DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
32-1329	10	12	8.3	1.205	2610947
	12	11.8	12.2	0.984	2610149
	20	11.8	33.8	0.594	2610973
	All UL V0	24	11.8	48.7	0.493
40-1836	10	18	5.4	1.852	3012601
	12	18	8	1.5	3012600
	12 UL V0	18	8	1.5	3426653
	20	19	21	0.952	3277546
	24	19	30	0.8	3012599
	24 UL V0	19	30	0.8	3426654
	28	19	41	0.683	4479654
	36	20	65	0.554	3012602
	48	20	116	0.414	3012603
50-1836	10	26	3.8	2.632	3091664
	12	27	5.4	2.222	3091665
	12 UL V0	27	5.4	2.222	3426780
	20	26	15.5	1.290	3277570
	24	27	21	1.143	3091667
	24 UL V0	27	21	1.143	3426781
	28	27	29	0.966	3910046
	36	27	48.5	0.742	3091669
	48	26	89	0.539	3091670
50-2345	12	30	5.2	2.308	3241892
	24	30	19.2	1.25	3241893
	28	32	24.5	1.143	4118636
75-3164	12	38	15.16	1.58	4360072
	24	38	3.79	3.17	4360073

COIL TYPE T
IP65/IP67
DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
40-1836	10	18	5.4	1.852	3008291
	12	18	8	1.5	3008275
	12 UL V0	18	8	1.5	3426667
	20	19	21	0.952	3517698
	24	19	30	0.8	3008279
	24 UL V0	19	30	0.8	3426669
	28	19	41	0.683	3245522
	36	20	65	0.554	3008283
	48	20	116	0.414	3008287
	60	19	189.5	0.317	3479295
50-1836	12	27	5.4	2.222	3001033
	24	27	21	1.143	3001503
	26	27	25.4	1.024	3001507
	48	26	89	0.539	3414493
75-3164	12	38	3.79	3.166	4327603
	24	38	15.16	1.583	4327604

DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
40-1836	10	18	5.4	1.852	3011668
	12	18	8	1.5	3011669
	18	18	18	1	3809718
	24	19	30	0.8	3008276
	28	19	41	0.683	3918750
	36	20	65	0.554	3011670
	48	20	116	0.414	3011672
	60	20	179	0.335	3531697
50-1836	12	27	5.4	2.222	3002184
	24	27	21	1.143	3002104
50-2345*	12	30	5.2	2.308	3274862
	12 -S	30	5.2	2.308	4250893
	24	30	19.2	1.25	3274863
	24 -S	30	19.2	1.25	4250892

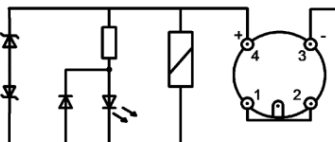
* Coils with version -S are designed for industrial valves of the series A01. For more information, see chapter "Assignment of valve - coil" on page 9 or in brochure 5.249.19 "Accessories for industrial valves".

DIRECT CURRENT

Coil family	Voltage [V]	Power [W]	Resistance R ₂₀ [Ω]	Current [A]	Part no.
40-1836	12	18	8	1.5	4501730
	24	19	30	0.8	3030064
	24	8	72	0.333	3131960
50-1836	24	27	21	1.143	3214337
50-2345*	12 -S	30	4.8	2.5	4250874
	12 -S	8	18.18	0.66	4253622
	24 -S	30	19.2	1.25	4250885
	24 -S	8	68.57	0.35	4250889

* Coils with version -S are designed for industrial valves of the series A01. For more information, see chapter "Assignment of valve - coil" on page 9 or in brochure 5.249.19 "Accessories for industrial valves".

Circuit diagram:



DIMENSIONS

DIRECT CURRENT	75-3164	50-2345	50-1836	40-1836	32-1329
G 	A = 20 B = 32 C = 36 D = 37.5	A = 19.1 B = 30 C = 34.5 D = 28	A = 19.1 B = 30 C = 35.1 D = 23.8	A = 19.1 B = 30 C = 35.1 D = 23.8	A = 18.5 B = 23 C = 30 D = 23.9
	Design A				Design B
T 	A = 19 B = 30.2 D = 40.3	-	A = 11 B = 27 D = 26.8	A = 11 B = 27 D = 26.8	-
U 	-	A = 26.4 B = 27 D = 40	A = 26.4 B = 27 D = 23.5	A = 26.4 B = 27 D = 23.5	-
K 	-	-	A = 18 B = 25 C = 34 D = 25.6	A = 18 B = 25.2 C = 34 D = 25.6	-
L 	-	A = 11.6 B = 31 C = 30 D = 31 E = 457	A = 12.6 B = 30 C = 31.7 D = 26.6 E = 457	A = 12.6 B = 30 C = 31.7 D = 26.6 E = 457	A = 15.6 B = 23 C = 23 D = 26.5 E = 483.5
	Single lead length E for standard types, others on request				
N 	A = 52 B = 35 D = 46.8	A = 33.7 B = 27 D = 40.1	A = 33.7 B = 30 D = 35.7	A = 33.7 B = 27 D = 35.9	A = 31.5 B = 23 D = 32.8
O 	-	A = 33.7 B = 27 D = 40.1	A = 28.1 B = 29 D = 51.8	A = 28.1 B = 29 D = 51.8	-
ALTERNATING CURRENT					
G 	A = 20 B = 32 C = 41.5 D = 40.3	A = 18 B = 30 C = 41 D = 30.7	A = 19.1 B = 30 C = 35 D = 26.5	A = 19.1 B = 30 C = 35 D = 26.5	-

All dimensions in millimetres. All dimensions subject to tolerances. Coil representations not shown to scale.

ASSIGNMENT OF VALVE - COIL

NOTE

The charts describe possible assignments to valve families. The availability of coil voltages cannot be derived here. In case of queries, contact your sales partner.

COIL TYPE 32-1329

Valve type	Symbol							
WK06	C	E	G	H	J	V	W	Y
WS06	Y(R)	Z(R)						

COIL TYPE 40-1836

Valve type	Symbol/ version												
WSM06020	Y(R)	Z(R)	V	W									
WSM10120	Y(R)	Z(R)											
WSM12120	BR	Y(R)	Z(R)	V	W								
WSM20121	V	W											
WS08		D-51		Y(R)	Z(R)	V	W						
WS10	Y(R)	Z(R)											
WS12	Y(R)	Z(R)											
WS16	Y(R)	Z(R)											
WKM08140	EB	X	Y										
WKM08130	C	D											
WK07	L												
WK08	A	C	D	J	K	L	P	R	V	W	X	Y	Z
WK081	A	C	D	J	K	L	P	R	V	W	X	Y	Z
WK10	E		G	H	J		T	Y-40					
WSM20121	W	V											
DB08	PY												
DB10	PY												
DB12	PY												
DB16	PY												
DBM10120	APY												
DBM12120	APY												
DWM12121	ZMDY												
DR08	PY												

COIL TYPE 50-1836

Valve type	Symbol/ version														
WS10	W	V													
WSM08130	C	D													
WS08	C	D													
WK10	A	C	D	K	L	N	P	JB	R	V	W	X	Y-01	Z	
WSM03230	C	D													
WSM06020	W-61														
WSM10120	W	V													

COIL TYPE 50-2345

Valve type	Symbol										
4WE6 A01/ A40	(A/B)E	C	D(T)	E(A/B)	F	G(A/B)	H(A/B)	J(A/B/R)	K(A)	L	M
	P	Q(A)	R	U	Y(T)						
4WE6 A08	C	D	E	G	H	J(A)	Q	Y			
4WEW6	D	E	G(A)	H(A)	Q						
4WER6	D	E(A/B)	G(A)	J	L	Y					
WSE6	(B)E2	(B)E4	E	E+H	H	J+M(-2RV)	M+J-2RV	Z+X-2RV	U	C	D
	Y										
WSER6	(B)E2	(B)E4	D	Y							

COIL TYPE 75-3164

Valve type	Symbol											
4WE10	AE	BE	BJ	C	D	E(A/B)	F	G(A/B)	H(A/B)	J(A/B)	L	M
	P	Q(A)	R	U(A)	Y							
4WEW10	D	E	H(A)	J(A)								
4WER10	D	E(A)	L	Y								

COIL TYPE 50-2345

Valve type	Symbol										
4WE6 A01/ A40	(A/B)E	C	D(T)	E(A/B)	F	G(A/B)	H(A/B)	J(A/B/R)	K(A)	L	M
	P	Q(A)	R	U	Y(T)						
4WE6 A08	C	D	E	G	H	J(A)	Q	Y			
4WEW6	D	E	G(A)	H(A)	Q						
4WER6	D	E(A/B)	G(A)	J	L	Y					
WSE6	(B)E2	(B)E4	E	E+H	H	J+M(-2RV)	M+J-2RV	Z+X-2RV	U	C	D
	Y										
WSER6	(B)E2	(B)E4	D	Y							

COIL TYPE 75-3164

Valve type	Symbol											
4WE10	AE	BE	BJ	C	D	E(A/B)	F	G(A/B)	H(A/B)	J(A/B)	L	M
	P	Q(A)	R	U(A)	Y							
4WEW10	D	E	H(A)	J(A)								
4WER10	D	E(A)	L	Y								

COIL TYPES WITH SUPPRESSOR DIODES FOR DN, DU and DT

DIRECT CURRENT

Coil family	Voltage range [V]	Type	Block voltage [V]	Example designation of diode
40-1836	10 V to 48 V	DU01	68V	P4KE68CA
		DT01		
		DN01		
		DN0120		
	12 V to 24 V	DU06	39V	P6KE39CA
	12V	DT03	33V	BZW06-28B
DT04				
	12V	DN07	20V	P6KE20CA
50-1836	10 V to 48 V	DU01	68V	P4KE68CA
		DT01		
		DN01		
	12 V to 24 V	DU06	39V	P6KE39CA
50-2345	10 V to 48 V	DU01	68V	P4KE68CA
		DN01		
	12V	DU01	33V	BZW06-28B

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications not described, please contact the relevant technical department.
Subject to technical modifications.

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