

Armature Actuated Brakes

RoHS Compliant- meets the requirements of the Restriction of Hazardous Substances Directive

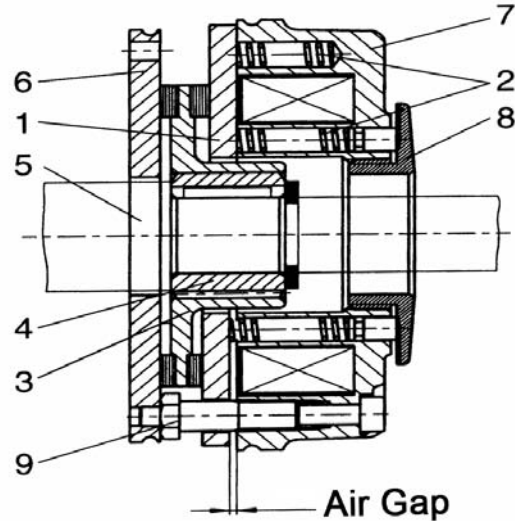


Direct-Acting, DC brakes in torque ratings from 3 lb-ft to 300 lb-ft (4 Nm to 400 Nm) of torque. Dings Armature Actuated Brakes are spring-applied (fail-safe), single-disc brakes.

Operation

During the braking procedure, the rotor (3), which can be shifted axially on the hub (4), is pressed against the counter friction face (6) via the armature plate (1), by means of the compression springs (2). When the brake is applied, an air gap is present between the armature plate and the stator (7). The brake is released electromagnetically. The stator's coil is energized with DC voltage in order to release the brake. The resulting magnetic flux works against the spring force to draw the armature plate to the stator. This releases the rotor from the spring force and allows it to rotate freely.

Torque adjustment ring (8) to reduce the braking torque is standard.



Features

- Torque adjustable
- Spring-set, electrically released (fail-safe)
- Fixed air gap for easy installation
- Compact size- high torque in a small package
- Standard DC voltages 24, 96, 103, 170, 180 190, 205
- Nine sizes ranging from 3lb-ft - 300 lb-ft (4 Nm-400 Nm)
- Class F Coil Insulation
- Universal Mounting

Options

- **IP44/IP55 Enclosure Rating**
 - Boot Seal, Shaft Seal, Sealing Cap
- Torque Adjust
- Manual Release
- Manual Release Monitoring
- Metric or English Bore Sizes
- Air Gap Shim for improved brake set time
- Noise-reduced Design
- AC Rectifiers
- Proving Switch (Electrical Release Indicator)
- Wear Indicator
- Terminal Box
- Cover
- C Face Mounting

Contact factory for C face mounting options

Specifications

Model Number	Torque lb-ft (Nm)	Mounting bolt circle (mm)	Inertia kg cm ²	Approximate weight lbs. (kg)	Max. speed RPM	Power in watts*	Max. Allowable Thermal Energy per Stop HP-Sec/stop	Max. # of stops per hour (at max. thermal energy)	Reaction Time in milliseconds**	
									Set	Release
D58-072	3 (4)	72	0.15	2.4 (1.1)	12400	20	4.0	79	28	45
D58-090	6 (8)	90	0.61	4.2 (1.9)	10100	25	10.0	50	31	57
D58-112	12 (16)	112	2.00	8.4 (3.8)	8300	30	16.0	40	47	76
D58-132	25 (32)	132	4.50	11.7 (5.3)	6700	40	32.1	30	53	115
D58-145	45 (60)	145	6.30	16.5 (7.5)	6000	50	40.2	28	42	210
D58-170	60 (80)	170	15.00	24.0 (10.9)	5300	55	48.2	27	57	220
D58-196	110 (150)	196	29.00	35.7 (16.2)	4400	85	80.4	20	78	270
D58-230	190 (260)	230	73.00	55.8 (25.3)	3700	100	107.2	19	165	340
D58-278	300 (400)	278	200.00	84.2 (38.2)	3000	110	160.8	15	230	390

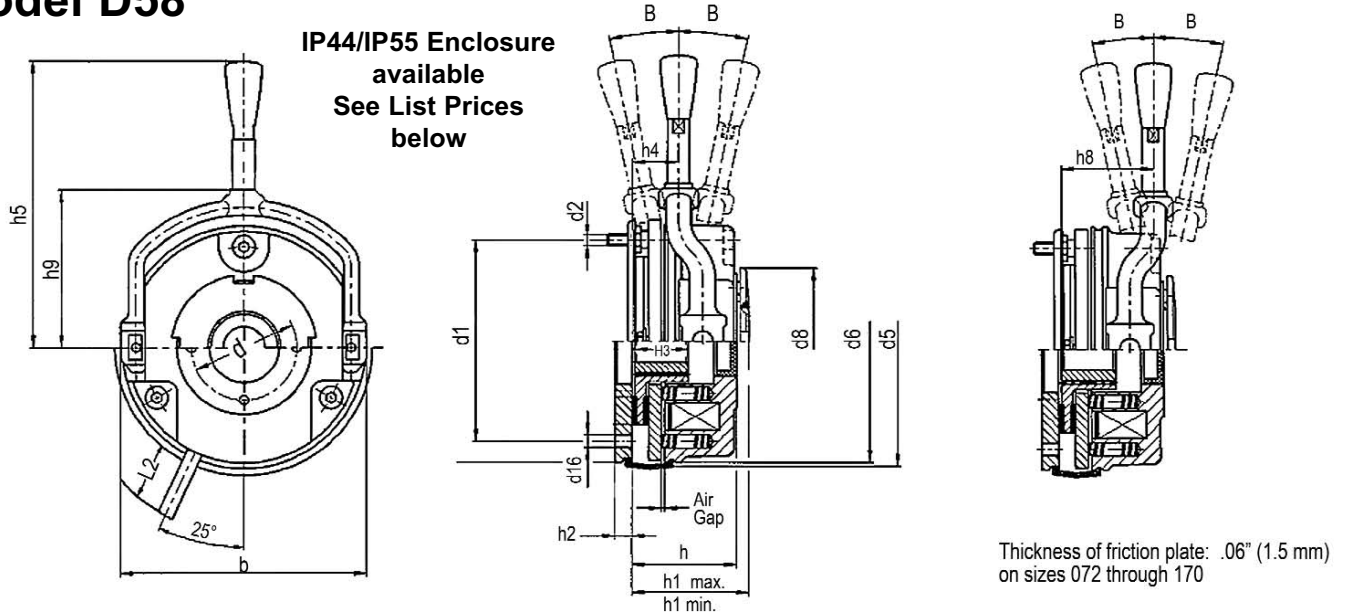
*Coil power at 20° C in Watts, up to +10%, depending on supply voltage

**Reaction times apply to DC switching at rated air gap (see dimensions page). Refer to page 42 for explanation of Reaction Times.

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Model D58



Dimensions in inches- Dimensions in millimeters

Basic Model Number	Torque lb-ft (Nm)	b	Max. bore size	d	B	d1	d2	d8	d5	d6	d16	h	h1 Min.	h1 Max.	h2	h4	h5 std	h5 max	h8	h9
D58-072	3 (4)	3.47 88	9/16"; 15 mm	1.48 37.7	12°	2.84 72	3xM4	2.05 52	3.58 91	3.43 87	3x4.5	1.43 36.3	1.55 39.3	1.71 43.3	.24 6	.62 15.8	4.21 107	-	1.29 32.8	2.22 56.3
D58-090	6 (8)	4.19 106.5	3/4"; 20 mm	1.93 49	10°	3.54 90	3xM5	2.36 60	4.29 109	4.13 105	3x5.5	1.69 42.8	1.84 46.8	2.00 50.8	.28 7	.64 16.3	4.57 116	-	1.63 41.3	2.56 65
D58-112	12 (16)	5.20 132	3/4"; 20 mm	2.13 54	9°	4.41 112	3xM6	2.68 68	5.28 134	5.12 130	3x6.6	1.91 48.4	2.06 52.4	2.20 55.9	.35 9	1.08 27.4	5.20 132	-	1.67 42.4	3.06 77.8
D58-132	25 (32)	5.98 152	1-1/8"; 25 mm	2.52 64	10°	5.20 132	3xM6	3.23 82	6.10 155	5.91 150	3x6.6	2.16 54.9	2.32 58.9	2.66 67.5	.35 9	1.16 29.4	6.34 161	-	1.87 47.4	3.48 88.5
D58-145	45 (60)	6.65 169	1-1/8"; 30 mm	2.95 75	9°	5.71 145	3xM8	3.62 92	6.65 169	6.50 165	3x9	2.61 66.3	2.81 71.3	3.04 77.3	.43 11	1.30 33	7.68 195	-	1.97 50	4.00 101.5
D58-170	60 (80)	7.66 194.5	1-3/8"; 38 mm*	3.35 85	10°	6.69 170	3xM8	4.02 102	7.68 195	7.48 190	3x9	2.85 72.5	3.05 77.5	3.37 85.5	.43 11	1.48 37.5	9.45 240	-	2.11 53.5	4.57 116
D58-196	110 (150)	8.75 222	1 5/8"; 45 mm	3.74 95	9°	7.72 196	6xM8	4.57 116	8.74 222	8.54 217	4x9**	3.27 83.1	3.51 89.1	3.82 97.1	.43 11	1.62 41.1	10.98 279	15.51 394	2.33 59.1	5.06 128.5
D58-230	190 (260)	10.16 258	1-7/8"; 50 mm	4.33 110	10°	9.06 230	6xM10	5.32 135	10.20 259	10.00 254	4x11**	3.84 97.6	4.12 104.6	4.51 114.6	.43 11	1.87 47.6	12.56 319	16.38 416	2.70 68.6	5.89 149.5
D58-278	300 (400)	11.89 302	2-3/8"; 70 mm	5.51 140	10°	10.95 278	6xM10	6.50 165	12.09 307	11.89 302	6x11	4.20 106.7	4.56 115.7	5.03 127.7	.49 12.5	2.27 57.7	17.52 445	19.72 501	3.49 88.7	7.07 179.5

*Bore diameter 38, DIN 6885/3 9 keyway

**Thread in the mounting surface is offset 30° in relation to the center axle of the manual release lever

Basic Model Number	Torque lb-ft (Nm)	L2 Lead Length	Air Gap ± .004 ± 0.1	Approx. Weight lbs. (kg)
D58-072	3 (4)	15.75 400	.008 0.2	2.4 (1.1)
D58-090	6 (8)	15.75 400	.008 0.2	4.2 (1.9)
D58-112	12 (16)	15.75 400	.008 0.2	8.4 (3.8)
D58-132	25 (32)	15.75 400	.012 0.3	11.7 (5.3)
D58-145	45 (60)	15.75 400	.012 0.3	16.5 (7.5)
D58-170	60 (80)	23.62 600	.012 0.3	24.0 (10.9)
D58-196	110 (150)	23.62 600	.016 0.4	35.7 (16.2)
D58-230	190 (260)	23.62 600	.016 0.4	55.8 (25.3)
D58-278	300 (400)	23.62 600	.020 0.5	84.2 (38.2)

List Prices (includes torque adjust)

Basic Model Number	Torque lb-ft (Nm)	List Price		IP44 Enclosure* Adders		
		Basic Brake	Brake with Manual Release	Boot Seal	Sealing Plug	Shaft Seal
D58-072	3 (4)	\$	\$	\$	\$	\$
D58-090	6 (8)	\$	\$	\$	\$	\$
D58-112	12 (16)	\$	\$	\$	\$	\$
D58-132	25 (32)	\$	\$	\$	\$	\$
D58-145	45 (60)	\$	\$	\$	\$	\$
D58-170	60 (80)	\$	\$	\$	\$	\$
D58-196	110 (150)	\$	\$	\$	\$	\$
D58-230	190 (260)	\$	\$	\$	\$	\$
D58-278	300 (400)	\$	\$	\$	\$	\$

*IP44 with boot seal in combination with either the sealing plug or shaft seal. Enclosure Rating is IP55 when brake is also mounted under a fan cover.

Armature Actuated Brakes

Ordering Information

Model Number Example: D58 - 112 - M 20 - MR ← Options

↑ ↑ ↑ ↑

Brake Brake Coil Hub

Model Size Voltage Bore Size

Refer to following page for option descriptions and pricing.

Coil Voltages

See pages 41 and 42 for AC rectifiers

Suffix	DC Voltage
B	24
D	42*
E	96
G	103
J	170
K	180
L	190
M	205

*Sizes 145 & 170 only

Available Options

Suffix	Description
B	Boot Seal
C	Terminal Box
E	Sealing Plug
L	Long Life (<i>ceramic rotor</i>)
MR	Manual Release
MA	Manual Release Indicator (<i>direction of release away from motor</i>)
MT	Manual Release Indicator (<i>direction of release towards motor</i>)
NA	Noise Reduced Armature
NR	Noise Reduced Rotor
T	Shaft Seal
W	Air Gap Shim
WI	Wear Indicator (sizes 132 & up)
XS	Electrical Release Indicator (Sizes 132 & up)
Y	Thin Plate (Friction Plate)
Z	Thick Plate (Mounting Flange)
*	Brake cover
*	C Face Mounting
*	Without Torque Adjust

*Contact Factory

Standard Bore Sizes

Metric Bores *			Availability by Brake Size									
Suffix	Size	Keyway	72	90	112	132	145	170	196	230	278	
PL	Pilot**	none	10	10	10	14	14	15	20	25	30	
10	10	3 x 1.5	X	X	X							
11	11	4 x 2	X	X	X							
12	12	4 x 2	X	X	X							
14	14	5 x 2.5	X	X	X	X	X					
15	15	5 x 2.5	X	X	X	X	X	X				
20	20	6 x 3		X	X	X	X	X	X			
25	25	8 x 3.5				X	X	X	X	X		
30	30	8 x 3.5					X	X	X	X	X	
35	35	10 x 4						X	X	X	X	
38*	38*	10 x 3***						X	X	X	X	
40	40	12 x 4							X	X	X	
45	45	14 x 4.5							X	X	X	
50	50	14 x 4.5								X	X	
55	55	16 x 5									X	
60	60	18 x 5.5									X	
65	65	18 x 5.5									X	
70	70	20 x 4***									X	

*Metric Bore Hubs with non-pilot bore includes keyway per DIN 6885/1 P9 and are furnished without set screws. Bores are shown in millimeters.

**Pilot Bore Hub sizes are designated by a "PL" suffix and the appropriate bore diameter is shown under the corresponding brake size.

***Keyway is per DIN 6885/3 P9

English Bores*			Availability by Brake Size									
Suffix	Size	Keyway	72	90	112	132	145	170	196	230	278	
PL	Pilot**	none	0.394	0.394	0.394	0.551	0.551	0.591	0.788	0.984	1.181	
0C	1/2	1/8 x 1/16	X	X	X							
0X	9/16	1/8 x 1/16	X	X	X	X	X					
0D	5/8	3/16 x 3/32		X	X	X	X	X				
0E	3/4	3/16 x 3/32		X	X	X	X	X				
0F	7/8	3/16 x 3/32				X	X	X	X			
0G	1	1/4 x 1/8				X	X	X	X	X		
0H	1 1/8	1/4 x 1/8				X	X	X	X	X		
0J	1 1/4	1/4 x 1/8						X	X	X	X	
0K	1 3/8	5/16 x 5/32						X	X	X	X	
0M	1 5/8	3/8 x 3/16							X	X	X	
0N	1 7/8	1/2 x 1/4								X	X	
0O	2 1/8	1/2 x 1/4									X	
0P	2 3/8	5/8 x 5/16									X	

*English Bore Hubs with non-pilot bore includes keyway per ANSI B17.1 and are furnished with set screw(s). Bores are shown in inches.

**Pilot Bore Hub sizes are designated by a "PL" suffix and the appropriate bore diameter is shown under the corresponding brake size.

For non-standard bore sizes, add: \$78 for sizes 072 - 112;
\$130 for sizes 132 - 170; \$195 for sizes 196 - 278

Armature Actuated Brakes

Options

Suffix	Option	Description	Availability by Size	List Price Adder			
B	Boot Seal	The seal is inserted into the groove on the stator. If no suitable groove is available on the counter friction face, we recommend the use of a flange or a friction plate.	All	Size 072-090 112 132 145	Adder \$ \$ \$ \$	Size 170 196 230 278	Adder \$ \$ \$ \$
C	Terminal Box	The terminal box is mounted onto the spring-applied brake using a fixing bracket and screws.	132, 145, 170, 196, 230, 278	\$			
E	Sealing Plug	A cover is pressed into the brake center	All	Size 072 - 112 132 - 170	Adder \$ \$	Size 196 230 278	Adder \$ \$ \$
L	Long Life Rotor	Service life at least twice as long (wear-resistant coating)	All	Size 072 - 112 132 - 170	Adder \$ \$	Size 196 230 278	Adder \$ \$ \$
MR	Manual Release	The manual release is used to release the brake by hand and can be factory installed or retrofitted.	All	Size 072 090 112 132 145	Adder \$ \$ \$ \$ \$	Size 170 196 230 278	Adder \$ \$ \$ \$
MA	Manual Release Indicator, direction of release away from motor	The manual release operation is detected via a microswitch, whose switching signal must be combined with the motor control, so that the motor can be prevented from starting (thus also preventing any possible injury to the operator).	All	072 - 132 = \$ 145 & 170 = \$ 196 - 278 = \$			
MT	Manual Release Indicator, direction of release towards motor		072, 090, 112	072 through 112 = \$			
NA	Noise-Reduced Armature	O-rings are installed between the magnet housing and the armature plate as shock absorbers.	All	Size 072 090 112 132 145	Adder \$ \$ \$ \$ \$	Size 170 196 230 278	Adder \$ \$ \$ \$
NR	Noise-Reduced Rotor	Rattling noises, which can occur in the rotor/hub connection with changing loads, for example, are reduced by using a rotor with a plastic sleeve.	All	Size 072 090 112	Adder \$ \$ \$	Size 132 145-278	Adder \$ \$
T	Shaft Seal	A shaft seal is pressed into the brake center for through-shaft applications. Seal bore is equal to the hub bore.	All	Size 072 - 132 145 - 230 278	Adder \$ \$ \$		
W	Air Gap Shim	A shim is placed between the stator and the armature plate to reduce brake set time	All	Size 072 - 132 145 - 196 230 - 278	Adder \$ \$ \$		
WI	Wear Indicator	The microswitch can be set such that a signal is output before the wear reserve is reached.	132, 145, 170, 196, 230, 278	Size 132 - 170 196 - 278	Adder \$ \$		
XS	Electric Release Indicator	The microswitch is used to monitor the air gap. When the armature plate makes contact with the stator, the motor contactor is controlled via the microswitch. The motor can only start if the brake is released.	132, 145, 170, 196, 230, 278	Size 132 - 170 196 - 278	Adder \$ \$		
Z	Thick Plate (Mounting Flange)	If no suitable counter friction face is available, a flange on which the seal can be installed can be used.	Standard on sizes 196, 230, and 278 Optional on sizes 072 through 170	Size 072 090 112	Adder \$ \$ \$	Size 132 145 170	Adder \$ \$ \$

NOTE: For brake covers, C face adaptors, or brake without torque adjust, contact factory

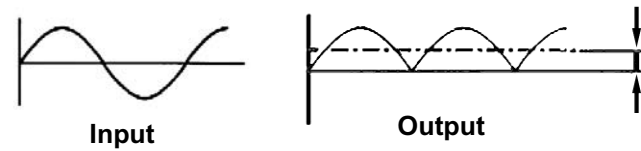
Armature Actuated Brakes

AC Rectifiers

Full- and half-wave rectifiers for use with D57 and D58 brakes. Rectifiers are UL listed, file number E307886.

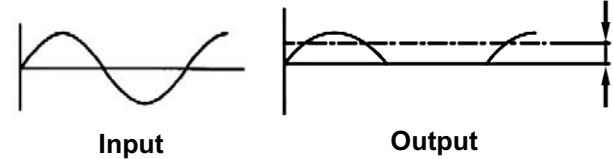
Full-Wave Bridge Rectifiers

Both positive and negative half-cycles of the AC signal are rectified to produce a DC current output. $V_{DC} = .90 V_{AC}$.



Half-Wave Rectifiers

Only alternate half-cycles of the AC signal are rectified to produce a DC current output. $V_{DC} = .45 V_{AC}$.



AC input voltage	Rectifier part number	Type	DC Coil voltage	Mounting	Max. Supply Voltage	List Price
42	D-630-H-V	Half Wave	20	Vertical	555 V	\$
	D-630-H-H			Horizontal		
48	D-630-H-V	Half Wave	20	Vertical	555 V	\$
	D-630-H-H			Horizontal		
110	D-630-B-V	Bridge	42	Vertical	270 V	\$
	D-630-B-H			Horizontal		
230	D-630-H-V	Half Wave	103	Vertical	555 V	\$
	D-630-H-H			Horizontal		
240	D-630-B-V	Bridge	205	Vertical	270 V	\$
	D-630-B-H			Horizontal		
240	D-630-H-V	Half Wave	103	Vertical	555 V	\$
	D-630-H-H			Horizontal		
380	D-630-B-V	Bridge	215	Vertical	270 V	\$
	D-630-B-H			Horizontal		
400	D-630-H-V	Half Wave	180	Vertical	555 V	\$
400	D-630-H-H	Half Wave	180	Horizontal	555 V	\$
440	D-630-H-V	Half Wave	205	Vertical	555 V	\$
440	D-630-H-H	Half Wave	205	Horizontal	555 V	\$
460	D-630-H-V	Half Wave	205	Vertical	555 V	\$
460	D-630-H-H	Half Wave	205	Horizontal	555 V	\$
480	D-634-H-V*	Half Wave	215	Vertical	555 V	\$
480	D-634-H-H*	Half Wave	215	Horizontal	555 V	\$
500	D-634-H-V*	Half Wave	225	Vertical	555 V	\$
500	D-634-H-H*	Half Wave	225	Horizontal	555 V	\$
555	D-634-H-V*	Half Wave	250	Vertical	555 V	\$
555	D-634-H-H*	Half Wave	250	Horizontal	555 V	\$

Max. DC current at 60°C 0.75 A ; Max. ambient temperature 80°C

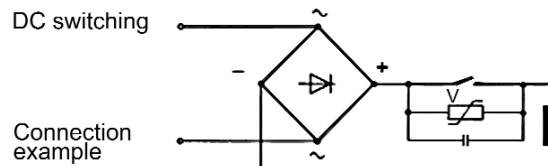
The rectifiers are protected against overvoltage by varistors in the input and output.

* Spark suppressor without capacitor. For optimum interference suppression, we recommend the use of spark suppressor D-198-004.

Universal spark suppressor

The universal spark suppressor limits the inductive voltages which appear when switching off clutches and brakes on the DC side. These inductive voltages can otherwise damage coils and switches. Four types of universal spark suppressors are available for the following voltage ranges:

Part Number	Coil Voltage V	Max. Coil Power	List Price
D-198-001	24V - 50V	110 W	\$
D-198-002	50V - 120V	110 W	\$
D-198-003	120V - 200V	110 W	\$
D-198-004	200V - 250V	110 W	\$



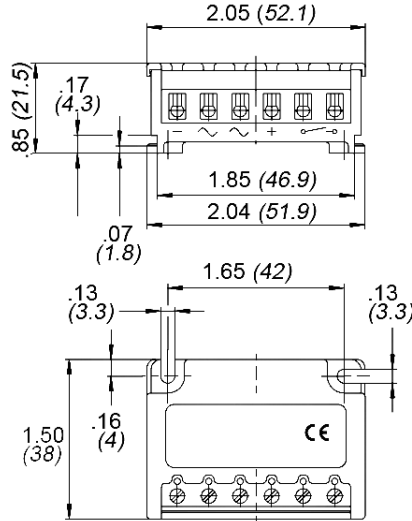
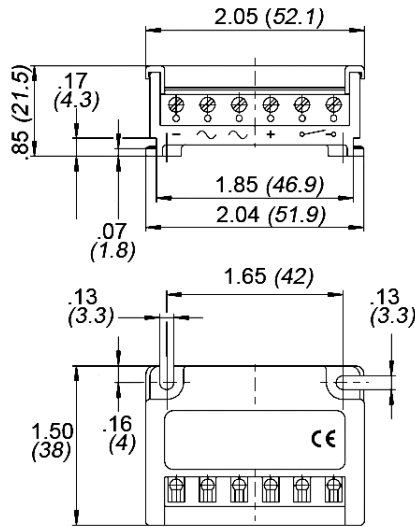
Armature Actuated Brakes

AC Rectifiers

Dimensions in inches (*Dimensions in Millimeters*)

Models D-630-H-V and D-630-B-V

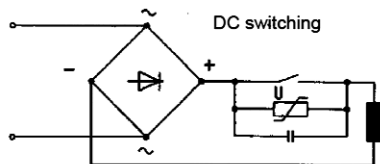
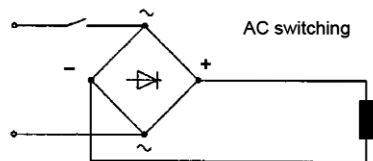
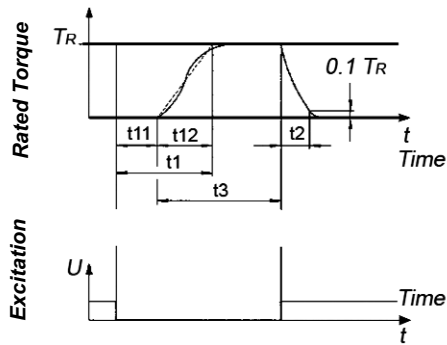
Models D-630-H-H and D-630-B-H



Operating Times

The listed operating times apply to DC switching with rated air gap and a warm coil. The times are mean values which may vary depending on the method of rectification and the air gap. The engagement time t_1 is approximately 10 times higher for AC switching than for DC switching.

t_{11} = Delay time
 t_{12} = Rise time of braking torque
 t_1 = Engagement time
 t_2 = Disengagement time
 t_3 = Slipping time



Model Number	Torque lb-ft (Nm)	Reaction Time in milliseconds*			
		t_{11}	t_{12}	t_1	t_2
D58-072	3 (4)	15	13	28	45
D58-090	6 (8)	15	16	31	57
D58-112	12 (16)	28	19	47	76
D58-132	25 (32)	28	25	53	115
D58-145	45 (60)	17	25	42	210
D58-170	60 (80)	27	30	57	220
D58-196	110 (150)	33	45	78	270
D58-230	190 (260)	65	100	165	340
D58-278	300 (400)	110	120	230	390
D61-072	3 (4)	14	30	44	62
D61-090	6 (8)	39	27	66	61
D61-112	12 (16)	29	41	70	100
D61-132	25 (32)	40	38	78	150
D61-145	45 (60)	36	50	86	300
D61-170	60 (80)	30	45	75	330
D61-196	110 (150)	68	67	135	320