



M07A MIL Rugged Coded Switches Overview

Coded Switches - MIL Rugged Type M07A



- 2 to 16 positions gray coding (BCD or hex available upon request)
- Rugged 6mm tapped shaft, 3mm versions optional
- Ruggedized stainless steel shaft
- Up to 3.5 Ncm switching torque
- Gold plated contacts, bright nickel bushing
- Meets/exceeds MIL-STD-810F for salt/fog and humidity
- Meets/exceeds MIL-STD-202G for shock and vibration
- THT (reflow version on request)
- IP68 front panel sealing (50 meters submersion) standard
- Operating temperature range: -40 to +85°C
- Various options and customization

PB ELV (2000/53/EC)
RoHS (2002/95/EC)

Standard Product Variety

- Vertical or horizontal mounting
- 6mm double flat tapped shaft or full round shaft shaft with double D bushing
- BCD, hex or gray coding
- Number of positions
- 4.5 Ncm +/- 25%
- With end stop or endless rotating
- IP60 or IP68 front panel sealing
- Various shaft styles and lengths
- High strength reinforced plastic body

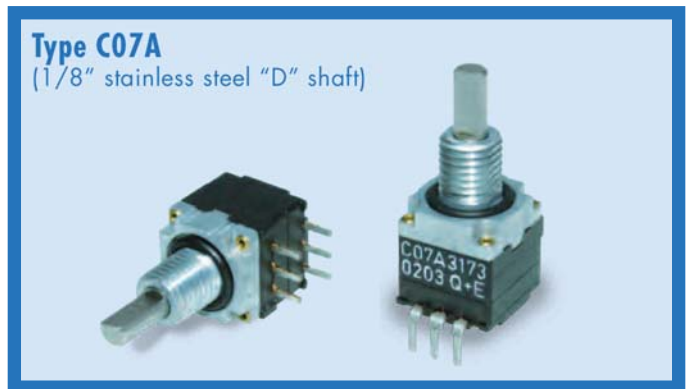
Typical Applications

- Communications
- Military
- Avionics
- Portable Medical equipment
- Industrial automation
- Vision and imaging products
- Mobile PCs

Examples of Customization

- 1/4" double-D shape shaft with tap screw or full-round
- High/low torque function "on/off"

Related Type 07 Family Products



Coded Switches - MIL Rugged Type M07A Specifications

Mechanical Data

Resolution:	BCD: 10 positions max. (36° indexing) Other codings: 16 positions max. (22.5° indexing) End stops are factory settable from 2 to 16 (10) positions
Switching torque (new condition):	4.5 Ncm +/- 25%
Rotational life:	10,000 cycles min.
End stop strength:	60 Ncm
Fastening torque of nut (front panel mounting):	100 Ncm max.

Electrical Data

Coding/output:	BCD, BCD complementary, hex, hex complementary or gray
Contact resistance (new condition):	50 mOhms max.
Dielectric withstanding voltage:	500 VDC during 60 seconds (pins to pins, pins to housing)

Material Data

Shaft:	Stainless steel, 1.40307 grade (special grade)
Housing:	Bright nickel, fiber enforced high performance plastic
Nut:	Brass
Contact system:	CuBe alloy, AuCo plated (hard gold)
Soldering leads:	CuBe alloy, tin plated
O-rings:	NBR (Nitril), 70 shore

Environmental Data

Operating/storage temperature range:	-40 to +85°C max.
IP sealing:	50 meters submersion
Vibration:	10 Grms max. @ 10 to 2000 Hz

Packaging Sizes

Tray:	50 or 200 pcs. (antistatic tray: 100 pcs.)
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Soldering Conditions

Hand soldering:	340°C max. during 2 s max.
Wave soldering:	280°C max. peak temperature during 5 s max.

Codings

BCD

	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				

■ On
 Off

BCD Complementary

	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				

Hex

	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

Hex Complementary

	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

Gray

	8	4	2	1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

Coded Switches - MIL Rugged Type M07A Specifications

Type Key

0	7	(M07A)	-	X	X	X	X	-	X	X	X	X	X	X	X
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Style
1 - Horizontal (shaft)

End Stop
0 - Endless rotating
1 - With end stop

Coding
3 - BCD (max. 10 pos.)
4 - BCD compl. (max. 10 pos)
5 - Hex
6 - Hex compl.
7 - Gray

Switching Mode
3 - Shorting
4 - Non-shorting

0 - 6mm
Z - 1

Number of Positions ¹

0 - Standard (10 or 16 pos.)
E - 15 pos. (0 - E)
D - 14 pos. (0 - D)
C - 13 pos. (0 - C)
B - 12 pos. (0 - B)
A - 11 pos. (0 - A)
9 - 10 pos. (0 - 9)
8 - 9 pos. (0 - 8)
7 - 8 pos. (0 - 7)
6 - 7 pos. (0 - 6)
5 - 6 pos. (0 - 5)
4 - 5 pos. (0 - 4)
3 - 4 pos. (0 - 3)
2 - 3 pos. (0 - 2)
1 - 2 pos. (0 - 1)

¹C07A: only available with standard number of positions

Shaft Length (AL)

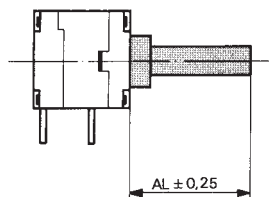
000 - Basic style: Basic round shaft 9.2mm
010 - Double flat: Tapped shaft 9.2mm (e.g. 10.5 mm = 105; not available for C07A)

Bushing, IP Sealing

20 - Threaded (nut supplied) panel mounting/threaded
30 - Threaded, IP68 (nut supplied)

Torque, Packaging

- - 4.5 Ncm +/- 25%, tray (50/200 pcs.)
T - 3.5 Ncm



Please state shaft length (AL) measured from mounting face (max. AL basic style: 30 mm, threaded bushing: 28.7 mm, C07A: 30.2 mm).

Preference Types Selection Chart

M07A Horizontal

Threaded Bushing, IP60, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop	Endless Rotating
BCD	Shorting	10 (0-9)	36°	M07A-1133-200000	07-1033
	Non-shorting	10 (0-9)	36°	M07A-1134-200000	07-1034
BCD compl.	Shorting	10 (0-9)	36°	M07A-1143-200000	07-1043
Hex	Shorting	16 (0-F)	22.5°	M07A-1153-200000	07-1053
	Non-shorting	16 (0-F)	22.5°	M07A-1154-200000	07-1054
Hex compl.	Shorting	16 (0-F)	22.5°	M07A-1163-200000	07-1063
Gray	Shorting	16 (0-F)	22.5°	M07A-1173-200000	07-1073

Threaded Bushing, IP68, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	M07A-1033-300000
	Non-shorting	10 (0-9)	36°	M07A-1034-300000
BCD compl.	Shorting	10 (0-9)	36°	M07A-1043-300000
Hex	Shorting	16 (0-F)	22.5°	M07A-1053-300000
	Non-shorting	16 (0-F)	22.5°	M07A-1054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	M07A-1063-300000
Gray	Shorting	16 (0-F)	22.5°	M07A-1073-300000

Threaded Bushing, IP60, Endless Rotating (Horizontal)

Coding	Switching Mode	Positions	Indexing Angle	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-1133-300000
	Non-shorting	10 (0-9)	36°	07-1134-300000
BCD compl.	Shorting	10 (0-9)	36°	07-1143-300000
Hex	Shorting	16 (0-F)	22.5°	07-1153-300000
	Non-shorting	16 (0-F)	22.5°	07-1154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-1163-300000
Gray	Shorting	16 (0-F)	22.5°	07-1173-300000

M07A Horizontal

Threaded Bushing, IP68, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop
Hex	Shorting	16 (0-F)	22.5°	C07A1153-300000
	Non-shorting	16 (0-F)	22.5°	C07A1154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	C07A1163-300000
Gray	Shorting	16 (0-F)	22.5°	C07A1173-300000

Preference Types Selection Chart

M07A Vertical

Threaded Bushing, IP60 with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop	Endless Rotating
BCD	Shorting	10 (0-9)	36°	M07A-3133-200000	07-3033
	Non-shorting	10 (0-9)	36°	M07A-3134-200000	07-3034
BCD compl.	Shorting	10 (0-9)	36°	M07A-3143-200000	07-3043
Hex	Shorting	16 (0-F)	22.5°	M07A-3153-200000	07-3053
	Non-shorting	16 (0-F)	22.5°	M07A-3154-200000	07-3054
Hex compl.	Shorting	16 (0-F)	22.5°	M07A-3163-200000	07-3063
Gray	Shorting	16 (0-F)	22.5°	M07A-3173-200000	07-3073

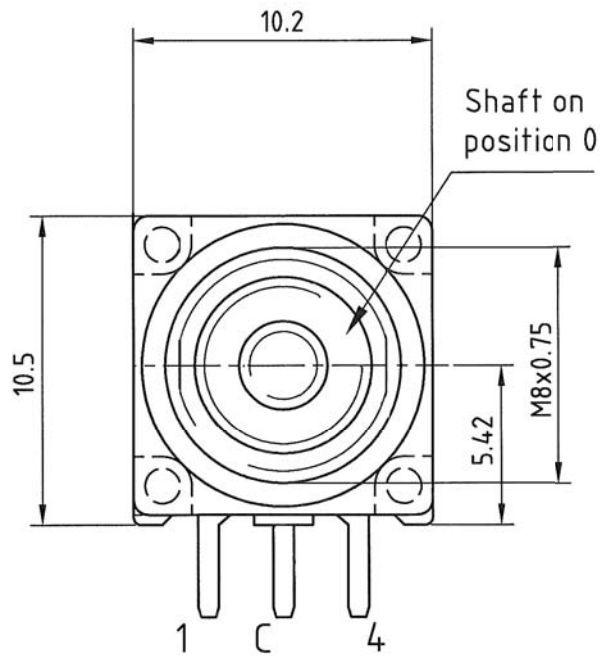
Threaded Bushing, IP68, with End Stop

Coding	Switching Mode	Positions	Indexing Angle	With End Stop
BCD	Shorting	10 (0-9)	36°	M07A-3133-300000
	Non-shorting	10 (0-9)	36°	M07A-3134-300000
BCD compl.	Shorting	10 (0-9)	36°	M07A-3134-300000
Hex	Shorting	16 (0-F)	22.5°	M07A-3153-300000
	Non-shorting	16 (0-F)	22.5°	M07A-3154-300000
Hex compl.	Shorting	16 (0-F)	22.5°	M07A-3163-300000
Gray	Shorting	16 (0-F)	22.5°	M07A-3173-300000

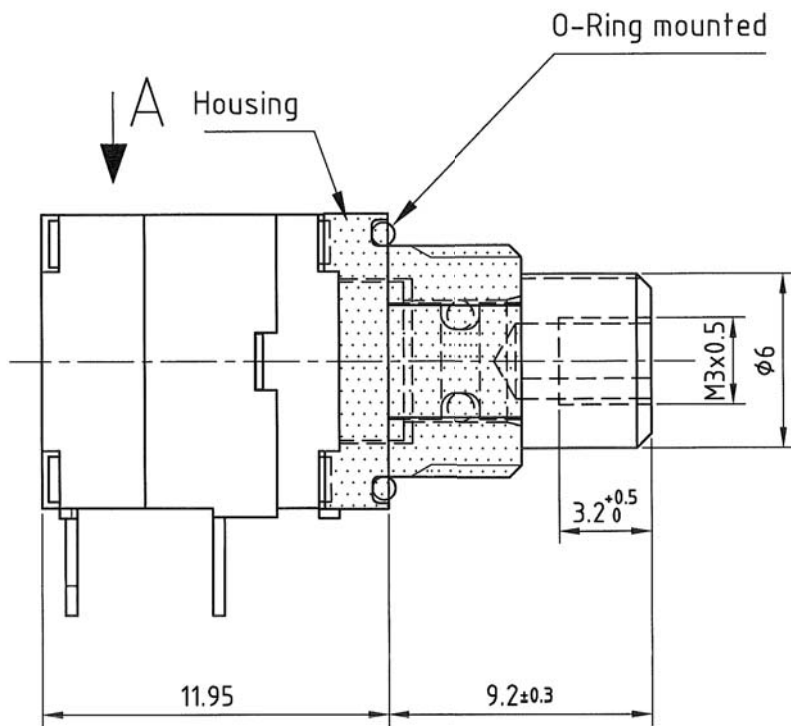
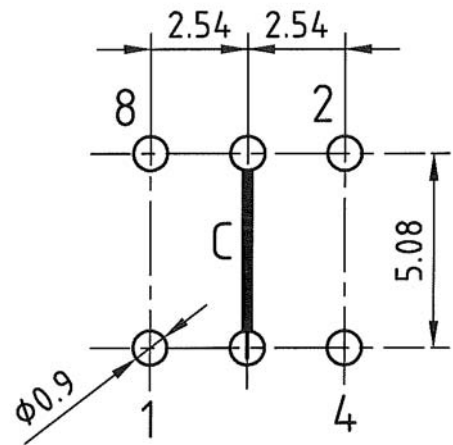
Threaded Bushing, IP60, Endless Rotating (Vertical)

Coding	Switching Mode	Positions	Indexing Angle	Endless Rotating
BCD	Shorting	10 (0-9)	36°	07-3033-300000
	Non-shorting	10 (0-9)	36°	07-3034-300000
BCD compl.	Shorting	10 (0-9)	36°	07-3043-300000
Hex	Shorting	16 (0-F)	22.5°	07-3053-300000
	Non-shorting	16 (0-F)	22.5°	07-3054-300000
Hex compl.	Shorting	16 (0-F)	22.5°	07-3063-300000
Gray	Shorting	16 (0-F)	22.5°	07-3073-300000

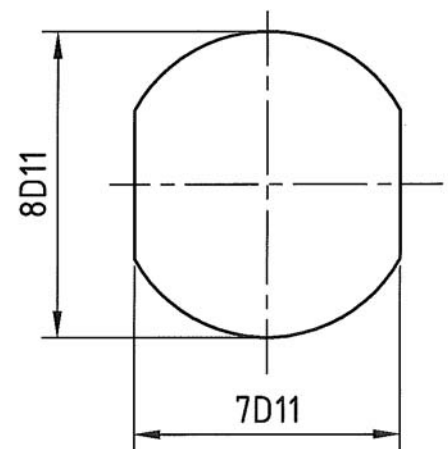
Technical Data

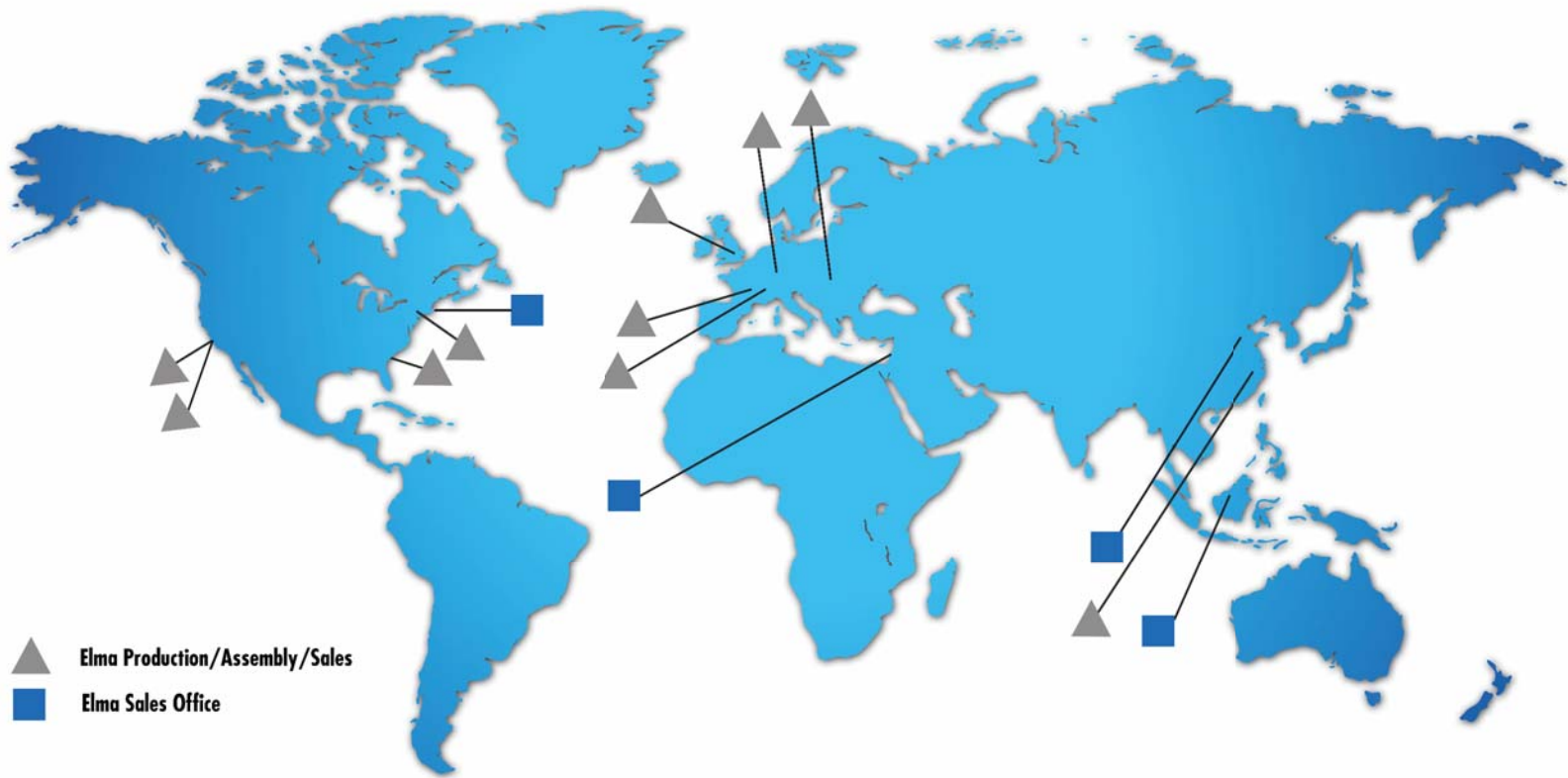


Drilling diagram
View from component side



Front panel cut out





UNITED STATES, ELMA ELECTRONIC

Elma Electronic USA Headquarters
44350 Grimmer Blvd.
Fremont, CA 94538
Phone: (510) 656-3400
Fax: (510) 656-3783
sales@elma.com
www.elma.com

Elma Electronic (ACT/Technico Brand)
760 Veterans Circle
Warminster, PA 18974
Phone: (215) 956-1200
Fax: (215) 956-1201
sales@elma.com
www.elma.com

ELMA BUSTRONIC

Elma Bustronic Headquarters
44350 Grimmer Blvd.
Fremont, CA 94538
Phone: (510) 490-7388
Fax: (510) 490-1853
sales@elmabustronic.com
www.elmabustronic.com

ELMA ELECTRONIC/OPTIMA

Optima EPS, An Elma Company
1775 MacLeod Drive
Lawrenceville, GA 30043
Phone: (770) 496-4000
Fax: (770) 496-4041
sales@elma.com
www.elma.com

SWITZERLAND

Elma Electronic AG
Hofstrasse 93, Postfach
620 Wetzikon
Phone: +41 44 933 41 11
Fax CH: +41 44 933 42 15
Fax Inter: +41 44 932 38 12
sales@elma.ch
www.elma.com

CHINA

Elma Electronic China
8F, 355, Fu Te Road (West 1)
Wai Gao Qiao Free Trade Zone
Pudong District, Shanghai, 200131, China
Phone: +86 21 5866 5908
Fax: +86 21 5866 5918
sales@elmachina.com
www.elma.com

GERMANY

Elma Trenew Electronic GmbH
Stuttgarter Strasse 11
75179 Pforzheim
Phone: +49 7231 97 340
Fax: +49 7231 97 3497
info@elma.de
www.elma.com

ASIA PACIFIC

Elma Asia Pacific Pte. Ltd.
115-A Commonwealth Drive
#03-14 Tanglin Halt Industrial Estate
Singapore 149596
Phone: +65 6479 8552
Fax: +65 6479 8662
sales.elmaap@elma.com
www.elma.com

UNITED KINGDOM

Elma Electronic UK Ltd
Solutions House, Fraser Road
Priory Business Park, Bedford
MK44 3BF
UK
Phone: +44 (0)1234 838822
Fax: +44 (0)1234 761335
sales@elma-electronic.co.uk

ISRAEL

Elma Electronic Israel Ltd.
34, Modi'in St.
IL-LZ. Sgula Petach Tikva 49271
Phone: +972 3 930 5025
Fax: +972 3 931 3134
sales@elma.co.il
www.elma.com

FRANCE

Elma Electronic France SASU
ZA du Buisson Rond
38460 Villemoirieu
Phone: +33 4 37 06 21 10
Fax: +33 4 37 06 21 19
sales@elma-electronic.fr
www.elma.com

ROMANIA

Elma Electronic SRL
Str. Maltopol Nr.16
011048 Bucuresti, Romania
Phone +4021 310 7998
Fax +4021 310 7992
info@elma.ro
www.elma.com