

i-select Hand Operated Rotary Switches (Off/On Sequence)

Description





Hand operated rotary switches provide the most cost effective method of providing complex contact switching functions. However, every item of electrical equipment needs a method of disconnecting it safely from the supply, and here again, the rotary switch with *positive break* contacts, performs that function effectively.

Simple Off/On switches can become quite complex when additional contacts are required for performing auxiliary functions. So if you should ever require say a 9 pole isolating switch with 3 N/O and 4 N/C contacts, one of each being gold plated, then the rotary switch is the only logical solution.

In this data sheet we show the basic building blocks only; so if you need a standard format it's here, but please be aware that a special version is only a phone call away.



Technical Specifications - Electrical Ratings to BS EN 60947-3 For Dimensions see Page 9

					
Range		R6	R16	Minirotary	R40
Thermal rating (A)	I_{th}	6	16	20	40
Position indexing options		90° & 45°	90° & 45°	90° & 45°	90°, 60°, 45° & 30°
Standard operating knob		Included	Included	Included	Included
Rated voltage (V)	U_i	690	690	690	690
Switching Characteristics					
AC20A		6A at 250V & 415V	16A at 250V & 415V	20A at 250V & 415V	40A at 250/415/660/690V
AC21A		6A at 250V & 415V	16A at 250V & 415V	20A at 250V & 415V	32A at 250V & 415V
AC22A		6A at 250V & 415V	16A at 250V & 415V	20A at 250V & 415V	32A at 250V & 415V
AC23A		6A/0.75kW at 250V 6A/2.5kW at 415V	16A/2.5kW at 250V 16A/5.5kW at 415V	20A/3.0kW at 250V 20A/9.5kW at 415V	28A/3.75kW at 250V 28A/15.0kW at 415V
Rated short time withstand (A)	(1 sec)	120	240	434	800
Maximum BS 88 backup fuse (A)		6	20	32	40
Finger protected terminals		IP2X	IP2X	—	IP2X
Contact material		Ag/Ni	Ag/Ni	Fine Silver	Ag/CdO
Mechanical life		>0.5 x 10 ⁶	>0.5 x 10 ⁶	>0.5 x 10 ⁶	>0.5 x 10 ⁶
Termination size		M3.5	M3.5	M4	M5
Maximum connecting cable size	mm ²	4.0	4.0	2 x 4.0	6.0
Standard shaft size (sq)	mm	5.5	5.5	4.8	5.5

Brief Descriptions

R6/R16 The R6 & R16 rotary switches are built upon a common frame, the R16 deriving its increased rating from larger contacts. These items lend themselves to the more common rotary switch functions such as 'isolation' and 'Ammeter and Voltmeter' selectors. Due to their small size they are also ideal for the specialist OEM user.

Minirotary The 'Minirotary' switch is one of the most versatile items in the rotary switch families. Its design permits the addition of a wide range of accessories. The switch is well proven in arduous conditions, being particularly favoured for Rail applications with its ability to withstand the required 'shock & vibration' tests.

Control panel manufacturers favour the Minirotary switch for its rear facing terminals which can be useful in terminating in confined spaces.

R40 The R40 rotary switch represents the ultimate in versatility. To this frame size we have added the facility of both 30° & 60° indexing. With excellent switching performance and a high level of mechanical strength, the R40 is *the* choice for isolation duties.

T e c h n i c a l D a t a S h e e t

i-select Hand Operated Rotary Switches (Off/On Sequence)

Catalogued Items (For Individual connection diags. place cat no. in the website product finder)

‘L’ = Switch Length

Unrestricted - 90° Four Position Stayput - Off/On/Off/On

Posn. Diag	Rating	Poles	‘L’	Cat. No
Sequence - SEQ1	6A	1	31	R6S11
	6A	2	31	R6D11
	6A	3	42	R6T21
	6A	4	42	R6Q21
	6A	5	52	R6X31
	6A	6	52	R6Y31
	16A	1	31	R16S11
	16A	2	31	R16D11
	16A	3	42	R16T21
	16A	4	42	R16Q21
	16A	5	52	R16X31
	16A	6	52	R16Y31
	20A	1	31	MS11
	20A	2	31	MD11
	20A	3	41	MT21
	20A	4	41	MQ21
	20A	5	51	MX31
	20A	6	51	MY31
	40A	1	35	RS3211
	40A	2	35	RD3211
40A	3	49	RT3221	
40A	4	49	RQ3221	
40A	5	62	RX3231	
40A	6	62	RY3231	

Options for this sequence:-
EB - Early break aux. contact.
 (Add suffix /1EB e.g. MT21/1EB)

Restricted - 90° Two Position Stayput- Off/On

Posn. Diag	Rating	Poles	‘L’	Cat. No
Sequence - SEQ1/1	6A	1	31	R6S11/1
	6A	2	31	R6D11/1
	6A	3	42	R6T21/1
	6A	4	42	R6Q21/1
	6A	5	52	R6X31/1
	6A	6	52	R6Y31/1
	16A	1	31	R16S11/1
	16A	2	31	R16D11/1
	16A	3	42	R16T21/1
	16A	4	42	R16Q21/1
	16A	5	52	R16X31/1
	16A	6	52	R16Y31/1
	20A	1	31	MS11/1
	20A	2	31	MD11/1
	20A	3	41	MT21/1
	20A	4	41	MQ21/1
	20A	5	51	MX31/1
	20A	6	51	MY31/1
	40A	1	35	RS3211/1
	40A	2	35	RD3211/1
40A	3	49	RT3221/1	
40A	4	49	RQ3221/1	
40A	5	62	RX3231/1	
40A	6	62	RY3231/1	

Options for this sequence:-
EB - Early break aux. contact.
 (Add suffix /1EB e.g. MT21/1EB)

Restricted - 90°/45° Two Position Stayput- Off/On

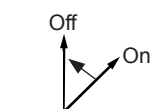
Posn. Diag	Rating	Poles	‘L’	Cat. No
Sequence - SEQ1/2	6A	1	31	R6S11/2
	6A	2	31	R6D11/2
	6A	3	42	R6T21/2
	6A	4	42	R6Q21/2
	6A	5	52	R6X31/2
	6A	6	52	R6Y31/2
	16A	1	31	R16S11/2
	16A	2	31	R16D11/2
	16A	3	42	R16T21/2
	16A	4	42	R16Q21/2
	16A	5	52	R16X31/2
	16A	6	52	R16Y31/2
	20A	1	31	MS11/2
	20A	2	31	MD11/2
	20A	3	41	MT21/2
	20A	4	41	MQ21/2
	20A	5	51	MX31/2
	20A	6	51	MY31/2
	40A	1	35	RS3211/2
	40A	2	35	RD3211/2
40A	3	49	RT3221/2	
40A	4	49	RQ3221/2	
40A	5	62	RX3231/2	
40A	6	62	RY3231/2	

Options for this sequence:-
EB - Early break aux. contact.
 (Add suffix /1EB e.g. MT21/1EB)

Padlocking Handles
 See page 3 for details

Restricted - 90° Two Position Spring Return- Off/On

Posn. Diag	Rating	Poles	‘L’	Cat. No
Sequence - SEQ1/SR	6A	1	31	R6S11/SR
	6A	2	31	R6D11/SR
	6A	3	42	R6T21/SR
	6A	4	42	R6Q21/SR
	6A	5	52	R6X31/SR
	6A	6	52	R6Y31/SR
	16A	1	31	R16S11/SR
	16A	2	31	R16D11/SR
	16A	3	42	R16T21/SR
	16A	4	42	R16Q21/SR
	16A	5	52	R16X31/SR
	16A	6	52	R16Y31/SR
	20A	1	31	MS11/SR
	20A	2	31	MD11/SR
	20A	3	41	MT21/SR
	20A	4	41	MQ21/SR
	20A	5	51	MX31/SR
	20A	6	51	MY31/SR
	40A	1	35	RS3211/SR
	40A	2	35	RD3211/SR
40A	3	49	RT3221/SR	
40A	4	49	RQ3221/SR	
40A	5	62	RX3231/SR	
40A	6	62	RY3231/SR	

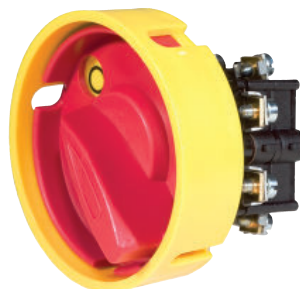


i-select Hand Operated Rotary Switches (Off/On Sequence)

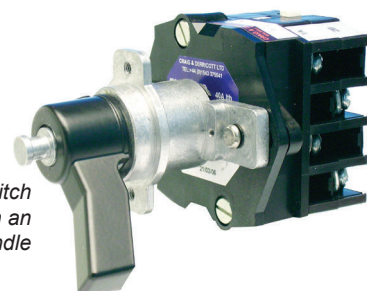
Catalogued Items

Restricted - 90° Two Position Spring Return- On/Off (7/SR)

Posn. Diag	Rating	Poles	'L'	Cat. No
	6A	1	31	R6S17/SR
	6A	2	31	R6D17/SR
	6A	3	42	R6T27/SR
	6A	4	42	R6Q27/SR
	6A	5	52	R6X37/SR
	6A	6	52	R6Y37/SR
	16A	1	31	R16S17/SR
	16A	2	31	R16D17/SR
	16A	3	42	R16T27/SR
	16A	4	42	R16Q27/SR
	16A	5	52	R16X37/SR
	16A	6	52	R16Y37/SR
	20A	1	31	MS17/SR
	20A	2	31	MD17/SR
	20A	3	41	MT27/SR
	20A	4	41	MQ27/SR
	20A	5	51	MX37/SR
	20A	6	51	MY37/SR
	40A	1	35	RS3217/SR
	40A	2	35	RD3217/SR
40A	3	49	RT3227/SR	
40A	4	49	RQ3227/SR	
40A	5	62	RX3237/SR	
40A	6	62	RY3237/SR	



20A Minirotary switch fitted with the CSP1 Continental style locking handle





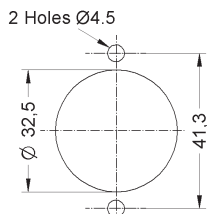
R40 rotary switch assembled with an 'SALHC' locking handle

Accessories

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		<p>Continental Style Padlocking Handles Moulded in Red & Yellow (Black available) Polypropylene, the locking handles allow for the fitting of up to 3 padlocks in the 'Off' position. (Hasp dia of 6.4 recommended) Add as suffix e.g. MT21/2/CSP1, RY3231/2/CSP3 To order as loose item add /HAN e.g. CSP1/HAN</p>					
		<p>For 4.8 x 4.8 sq shaft SEQ 1/2 For 5.5 x 5.5 sq shaft SEQ 1/2</p>	x	x	✓	x	CSP1 CSP3
<p>'Skeleton' LHC handle</p> <p>'Skeleton' LHD handle</p>	(See page 4 for dimensions)	<p>Multi position Locking Handles Designed specifically to offer the maximum padlocking flexibility, these robust assemblies can be fitted to the complete range of switches. Offered with two different handle shapes and several locking position options.</p>					
		<p>Pull to lock (Pull out central plunger to insert padlock) Press to release (Remove padlock and depress central plunger to release switch)</p> <p>General selector type knob Small pointer style knob</p> <p><i>The Seq figures in red dictate which switches must be used with the various locking positions.</i></p>	✓	✓	✓	✓	...LHC... ...LHD... SM... SA...
		<p>Locking Position(s) 10:30 o'clock 10:30 & 1:30 o'clock 1:30 o'clock</p>	✓	✓	✓	✓	...9 ...10 ...11

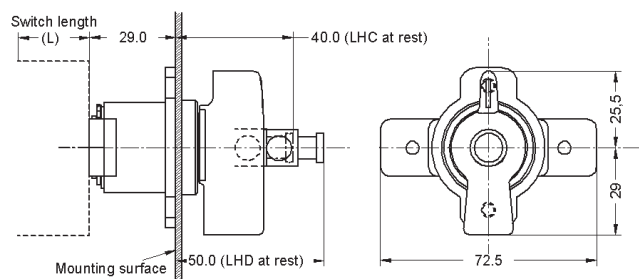
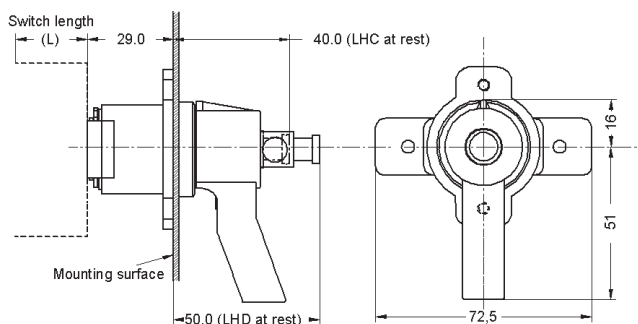
x = Not available, ✓ = OK

i-select Hand Operated Rotary Switches (Off/On Sequence)


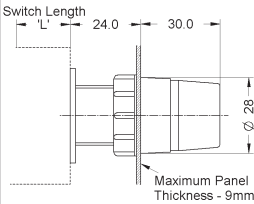

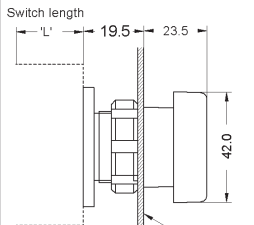

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
 	<p>(See below)</p>  <p>2 Holes Ø4.5</p> <p>Ø 32.5</p> <p>41.3</p> <p>Drilling details for both LHC & LHD handle forms</p>	<p>Multi position Locking Handles contd.</p> <p>Locking Position(s).</p> <p>12:00/3:00/6:00/9:00 o'clock } SEQ 1</p> <p>12:00 & 6:00 o'clock } SEQ 1/1</p> <p>12:00 & 3:00 o'clock } SEQ 1/SR & 7/SR</p> <p>12:00 o'clock only</p> <p>12:00 o'clock only</p> <p>N.B. All three segments of the locking handle part number need to be stated e.g. SALHC9. Add as a suffix to the switch catalogue number:- RT3221/2/SMLHD or R16Y31/1/SALHC1. If the locking position is not stated, the assembly will be supplied lockable in all positions.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>...6</p> <p>...5</p> <p>...2</p> <p>...1</p> <p>...20</p>

LHC/LHD Locking Handle with SA shape knob

LHC/LHD Locking Handle with SM shape knob


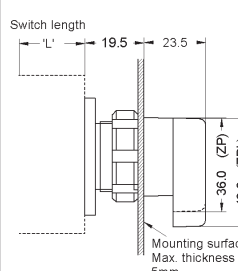

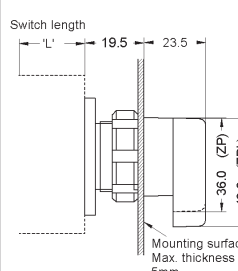

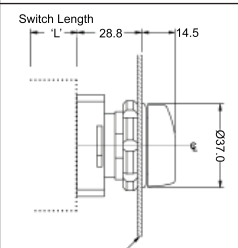

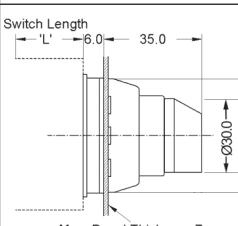

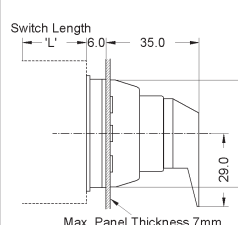


Single Hole Knob Actuators


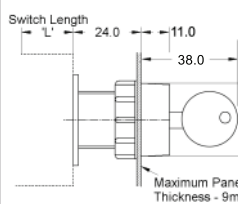
Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
	 <p>Switch Length</p> <p>24.0</p> <p>30.0</p> <p>Ø 28</p> <p>Maximum Panel Thickness - 9mm</p>	<p>Knob Actuators - Single hole fixing Ø22 Mounting - IP65</p> <p>All moulded construction.</p> <p><i>Cannot be sold separately. Add as prefix to switch ref. e.g. 22Z/R16T54/3, 22Z/MX52/2</i></p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>x</p>	<p>22Z/...</p>
	 <p>Switch length</p> <p>19.5</p> <p>23.5</p> <p>42.0</p> <p>Mounting surface Max. thickness 5mm</p>	<p>Knob Actuators - Single hole fixing Ø22 Mounting - Die-cast - IP65</p> <p>'Tee bar' knob with full width line</p>	<p>x</p>	<p>x</p>	<p>✓</p>	<p>x</p>	<p>22ZTF...</p>
	<p>Mounting surface Max. thickness 5mm</p>	<p>'Tee bar' knob with half width line</p> <p>Please check availability before ordering on these items.</p> <p>Contd...</p>	<p>x</p>	<p>x</p>	<p>✓</p>	<p>x</p>	<p>22/ZT...</p>

i-select Hand Operated Rotary Switches (Off/On Sequence)

Single Hole Knob Actuators Contd.

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		Knob Actuators - Single hole fixing contd. Ø22 Mounting - Die-cast - IP65					
		Pointer knob (Short tail)	x	x	✓	x	22/ZP...
		Pointer knob (Long tail)	x	x	✓	x	22/ZPL...
		<i>Please check availability before ordering on these items.</i>					
		Knob Actuators - Single hole fixing. Ø30.5 Mounting - Die-cast body - IP65	✓	✓	✓	x	N309B1...
		Pointer knob					
		<i>Cannot be sold separately. Add as prefix to switch ref. e.g. N309B1/MD11/2.</i>					
		Knob Actuators - Single hole fixing. Ø32.0 Mounting - Die-cast body and locking ring with silver anodised finish, die-cast knob finished black - IP65	x	x	✓	x	Z...
		Pointer knob					
		<i>Cannot be sold separately. Remove 'M' from switch ref & add Z as prefix e.g. ZT54/3</i>					
		Knob Actuators - Single hole fixing. Ø32.0 Mounting - Die-cast body and locking ring with silver anodised finish, die-cast knob finished black - IP65	x	x	✓	x	Z1...
		Metal pointer knob					
		<i>Cannot be sold separately. Remove 'M' from switch ref & add Z1 as prefix e.g. Z1X53/3</i>					


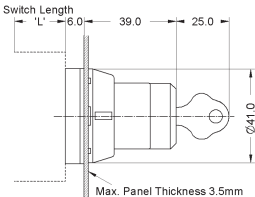
Single Hole Key Actuators

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		Key Actuators - Single hole fixing. Ø22 Mounting - All moulded - IP65					
		Locking Position(s) - Key free.	✓	✓	✓	x	22K5...
		12:0 & 6:00 o'clock	✓	✓	✓	x	22K6...
		12:0/3:00/6:00/9:00 o'clock } SEQ 1	✓	✓	✓	x	22K1...
		12:00 o'clock	✓	✓	✓	x	22K2...
		12:00 & 3:00 o'clock } SEQ 1/1	✓	✓	✓	x	22K9...
		10:30 o'clock	✓	✓	✓	x	22K10...
		10:30 & 1:30 o'clock } SEQ 1/2	✓	✓	✓	x	22K11...
		1:00 o'clock	✓	✓	✓	x	22K11...
		contd...					


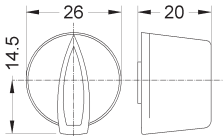

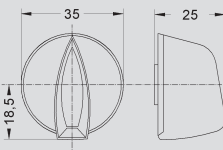

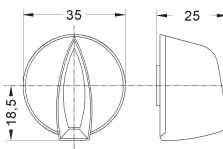
T e c h n i c a l D a t a S h e e t

i-select Hand Operated Rotary Switches (Off/On Sequence)

Single Hole Key Actuators Contd.

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		<p>Key Actuators - Single hole fixing contd. Ø22 Mounting - All moulded - IP65</p> <p>Locking Position(s) - Key free. 12:0 o'clock SEQ 1/SR & 7/SR</p> <p><i>'300' key series. Unless otherwise requested, key actuators will be supplied with 2 off '301' keys. Key differs 302 - 399 available on request.</i></p> <p><i>Cannot be sold separately.</i> <i>Add as prefix to switch ref. e.g. 22K9/R6T21/2</i></p>	✓	✓	✓	x	22K20...
		<p>Key Actuators - Single hole fixing contd. Ø32 Mounting - Die-cast - IP65</p> <p>Locking Position(s) - Key free. 12:0 & 6:00 o'clock 12:0/3:00/6:00/9:00 o'clock } SEQ 1</p> <p>12:00 o'clock 12:00 & 3:00 o'clock } SEQ 1/1</p> <p>10:30 o'clock 10:30 & 1:30 o'clock } SEQ 1/2</p> <p>1:30 o'clock</p> <p>12:0 o'clock SEQ 1/SR & 7/SR</p> <p><i>'DC800' key series. Unless otherwise requested, key actuators will be supplied with 2 off 'DC800' keys. Key differs DC801 - DC899 available on request.</i></p> <p><i>Cannot be sold separately. Remove 'M' from switch ref & add K as prefix e.g. K20T21/SR</i></p>	x x x x x x	x x x x x	✓ ✓ ✓ ✓ ✓	x x x x x	K5... K6... K1... K2... K9... K10... K11... K20...


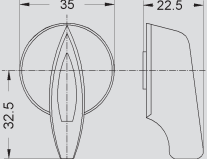

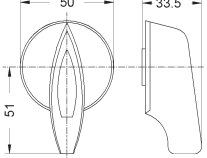

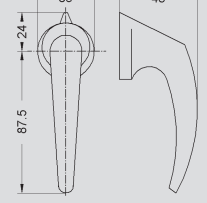

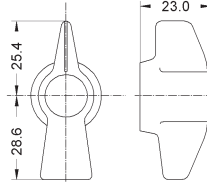

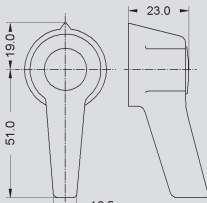

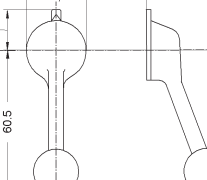
Alternative Knobs

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		<p>Moulded skirted knob Ø26</p> <p>Supplied as std. with R6 & R16 sws. Supplied loose as spare</p>	✓ ✓	✓ ✓	x x	x x	- MZK/B/HAN
		<p>Moulded skirted knob Ø35</p> <p>Supplied fitted to selected switch Supplied loose as spare</p>	✓ ✓	✓ ✓	x x	✓ ✓	.../ZK ZK/B/HAN
		<p>Moulded skirted knob Ø35</p> <p>Supplied as std. with MR sws. Supplied loose as spare</p>	x x	x x	✓ ✓	x x	- SZK/B/HAN

T e c h n i c a l D a t a S h e e t

i-select Hand Operated Rotary Switches (Off/On Sequence)

Alternative Knobs Contd.

Photograph	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		Moulded skirted knob Ø35 with tail Supplied as std. with R40 sws. Supplied fitted to selected switch Supplied loose as spare	x ✓ ✓	x ✓ ✓	x x x	✓ x ✓	- .../SK SK/B/HAN
		Moulded skirted knob Ø50 with tail Supplied fitted to selected switch Supplied loose as spare	x x	x x	x x	✓ ✓	.../LK LK/B/HAN
		Moulded pistol grip handle - Black Supplied fitted to selected switch Supplied loose as spare	x x	x x	x x	✓ ✓	.../BP BP/B/HAN
		Die-Cast knobs - General purpose pointer style knob Supplied fitted to selected switch Supplied loose as spare (MR) Supplied loose as spare (R40)	x x x	x x x	✓ ✓ x	✓ x ✓	.../SM SM/16/HAN SM/32/HAN
		Die-Cast knobs - Pointer style knob with tail Supplied fitted to selected switch Supplied loose as spare (MR) Supplied loose as spare (R40)	x x x	x x x	✓ ✓ x	✓ x ✓	.../SA SA/16/HAN SA/32/HAN
		Die-Cast knobs - Machine Tool style (Small) Bright chrome finish with black ball knob Supplied fitted to selected switch Supplied loose as spare (MR) Supplied loose as spare (R16/R16/R40)	✓* x ✓*	✓* x ✓*	✓ ✓ x	✓ x ✓	.../SMT SMT/16/HAN SMT/32/HAN
<i>* Only suitable for non-restricted switches</i>							

i-select Hand Operated Rotary Switches (Off/On Sequence)

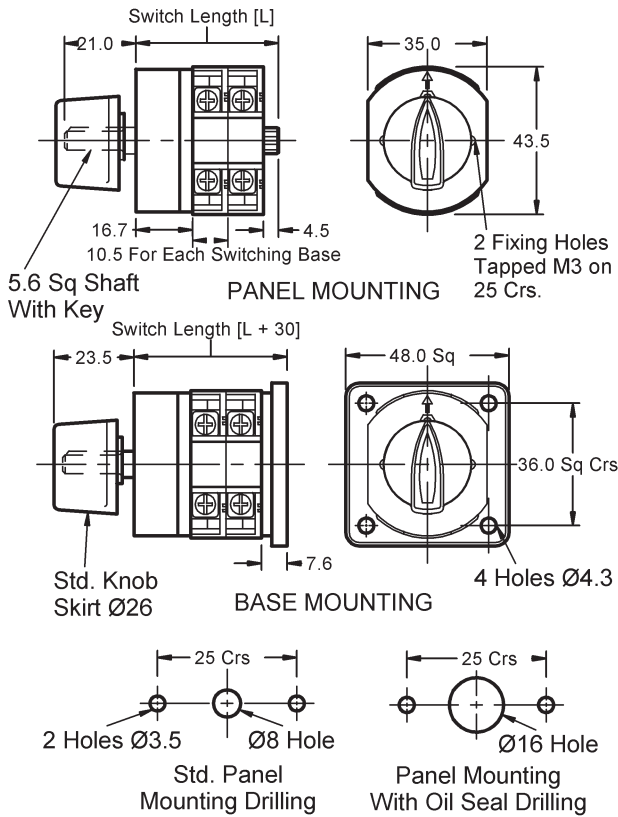
Additional Features

Diagrams	Dimensions	Description	R6	R16	MR	R40	Catalogue Ref
		Extended Shafts - Shaft projections in excess of the std. can be specified by making reference to the suffixes as shown.					
		Total shaft projection (4.8 sq) 20.5 x x ✓ x (Std. Shaft) 25.5 x x ✓ x .../SS1 33.5 x x ✓ x .../SS2 40.0 x x ✓ x .../SS3 46.0 x x ✓ x .../SS4 52.5 x x ✓ x .../SS5 59.0 x x ✓ x .../SS6 Total shaft projection (5.5 sq) 23.5 x x x ✓ (Std. Shaft) 36.5 x x x ✓ .../SS2 49.0 x x x ✓ .../SS4 62.0 x x x ✓ .../SS6 75.0 x x x ✓ .../SS8 87.5 x x x ✓ .../SS10 100.0 x x x ✓ .../SS12					
		Gold Surfaced Contacts - For low power circuits Gold flashed contacts ✓ ✓ ✓ x .../GF Gold plated contacts x x ✓ x .../GP <i>Plated contacts offer a significantly thicker deposit, and are better suited to withstand mechanical wear and minor contact arcing.</i>					
		IP65 Sealing Kit - To enhance the std. panel mounting switches to IP65. Factory fitted to switch ✓ ✓ ✓ ✓ .../G Supplied loose as kit (MR) x x ✓ x G/16/KIT Supplied loose as kit (R40) x x x ✓ G/32/KIT					
		Base Mounting - Provides the facility to base mount the panel mounted switch form. Base mounted form ✓ ✓ ✓ ✓ .B... <i>To specify, add the letter 'B' after the pole designation in the cat. ref. e.g. R6TB21, MYB31/2</i>					
		Faceplate Padlocking - Heavy duty, all metal, padlocking device. Can be made lockable in one or more position (45° indexing). Basic padlocking device x x x ✓ .../PL <i>Locking positions can be supplied as advised, or the customer can effect locking positions by modifying the supplied locking disk. Please specify your requirements when ordering.</i>					
		Additional terminal protection - Loose items Individual terminal shrouds (R6/R16) ✓ ✓ x x SRC 0108 Individual terminal shrouds (MR) x x ✓ x MR 1048 Flexible PVC shroud* x x ✓ x MR 0134 <i>* The MR 0134 shroud is designed to cover the complete switch and associated wiring. Easily cut to length to suit individual switch lengths.</i>					

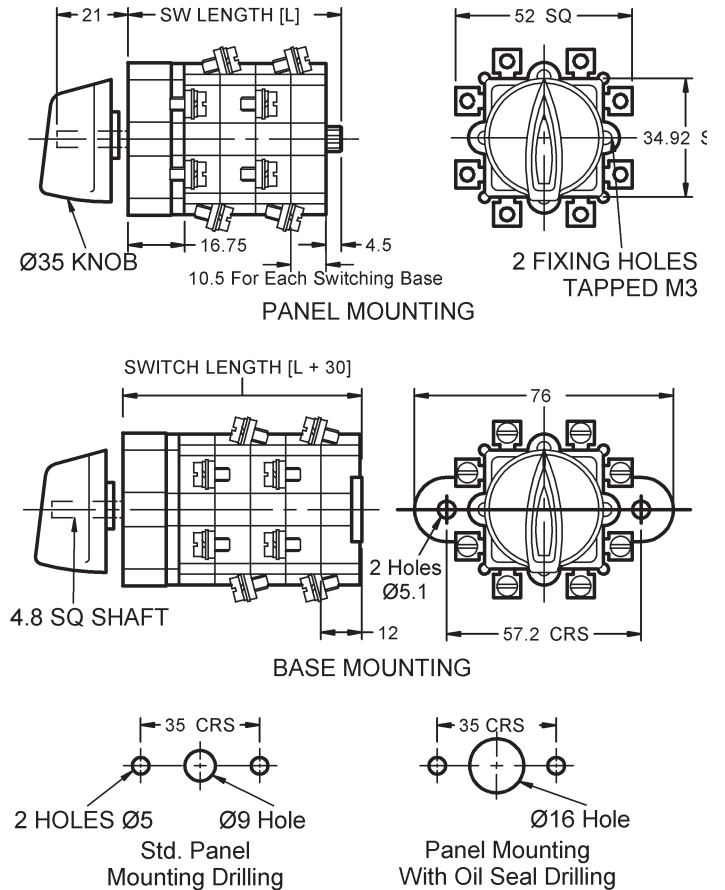
i-select Hand Operated Rotary Switches (Off/On Sequence)

Dimensions

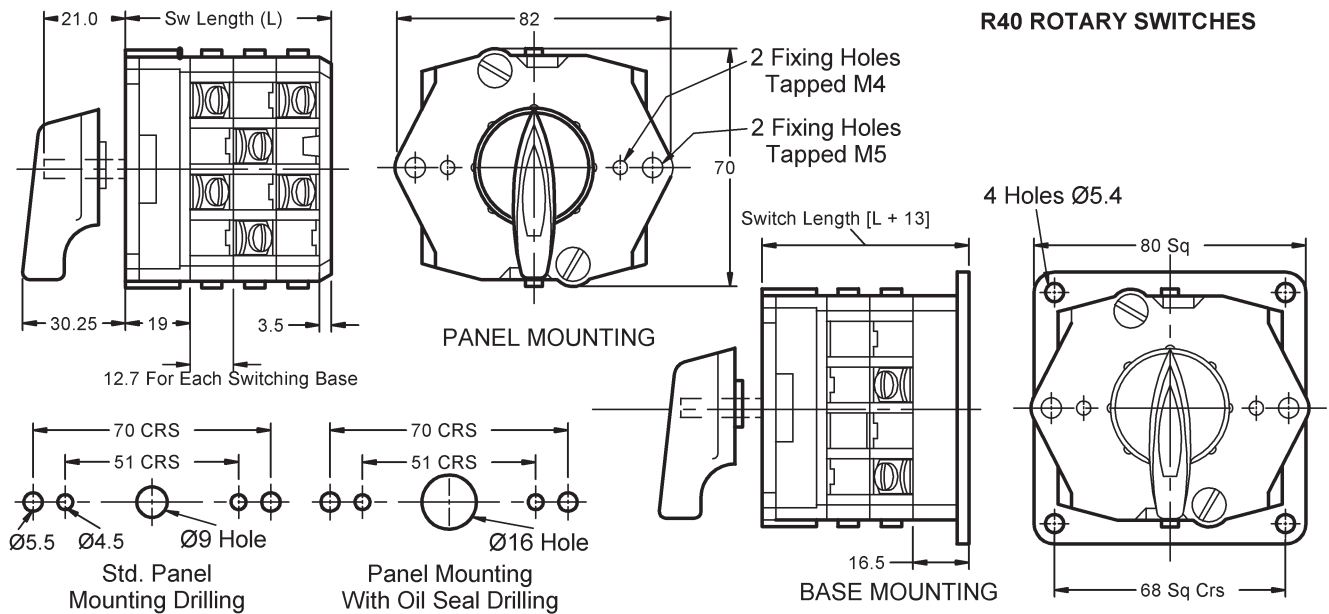
R6 & R16 ROTARY SWITCHES



MINIROTARY SWITCHES



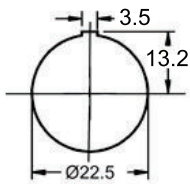
R40 ROTARY SWITCHES



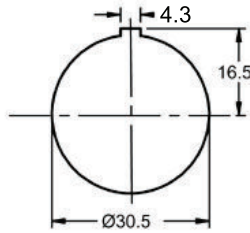
***i-select* Hand Operated Rotary Switches (Off/On Sequence)**

Dimensions Contd.

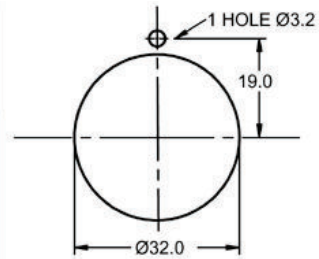
Single hole mounted components:-



All '22 Series' Components



All Std. '30.5 Series' Components



All '32 Series' Components

Conclusions

The Craig & Derricott 'Classic Range' of rotary switches offers a vast selection of assemblies in the catalogued options shown here. However, our service to industry concentrates on supplying bespoke arrangements that fulfil specific, and often unique, requirements.

If you feel you would like to discuss your specific needs, please give our dedicated sales team a call, we have decades of experience in determining solutions in this field.

Although we show a good selection of accessories in this data sheet, there are common components such as **enclosures** and **indicator plates** that cut across more than one product range. Please refer to our separate data sheets for further information:-

- [Craig & Derricott Enclosures.pdf](#)
- [Craig & Derricott Indicator Plates.pdf](#)