

R-Line Series 40 Amp Rotary Cam Switches

Rugged and dependable
40 amp switches for
industrial applications



Sprecher + Schuh's rugged R-Line rotary cam switches are available for most control and load applications up to 40 amps. A well thought out ordering system provides many standard and nonstandard configurations, that are often available "off the shelf."

A comprehensive line...

Frame sizes are available in panel mount and base mount for total flexibility. Many popular switching configurations are offered from stock and many times custom switches can be made to order.

...For many applications

R-Line control and load switches comply with the most important international standards for use as:

- **Changeover Switches** - for switching between alternate electrical supplies.
- **ON/OFF switches** - to connect and disconnect any electrical supply.
- **Multi-position load switches** - for the step control of loads such as heaters and furnaces.
- **Motor load disconnect switches** - for safely isolating circuits during repair and maintenance.
- **Reversing switches** - to change the direction or rotation of a motor.
- **Wye-Delta switches** - To manually control reduced voltage starting of a motor.

Rugged quality

The R-Line's sturdy design incorporates a positive switching action with a clearly defined switch position. The contact assemblies themselves are brass plated and have generous copper content to help dissipate heat.


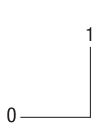

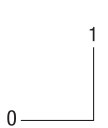



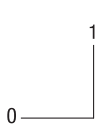

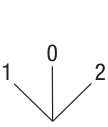

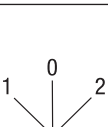

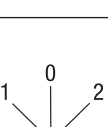
Solid connections


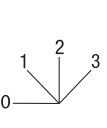

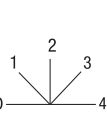

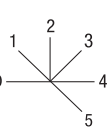

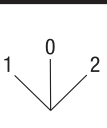

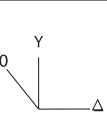

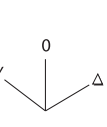

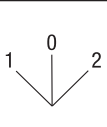
"Strip-free" saddleclamp terminals guarantee reliable connections. "Ring-tongue" connectors can be installed with ample torque to assure the tightest connection.

Choose from various switch handle assemblies

Switch handle assemblies for our Changeover and ON-OFF switches are available with either traditional screw fixing or the new central nut fixing system. All switch handles offer IP66 protection. A UL 4X handle is also available ordered separately.

R-Line Front Mounted 40 Amp Rotary Switches with Handle ①





Switch Description				Catalog Number ②	Price
Switch Handle ③	Function	Switch Angle	Poles/Switch Wafers		
ON - OFF					
 Screw Fixing		90°	1 / 1	RE-40-1751-A	101
		90°	2 / 1	RE-40-1752-A	118
		90°	3 / 2	RE-40-1753-A	135
		90°	4 / 2	RE-40-1754-A	149
		90°	6 / 3	RE-40-1756-A	192
 Screw Fixing		90°	3 / 2	RE-40-1753-N	160
		90°	4 / 2	RE-40-1754-N	187
		90°	6 / 3	RE-40-1756-N	232
 Central Nut Fixing		90°	2 / 1	RC-40-1752-B	149
		90°	3 / 2	RC-40-1753-B	166
		90°	4 / 2	RC-40-1754-B	181
		90°	6 / 3	RC-40-1756-B	223
 Central Nut Fixing		90°	2 / 1	RC-40-1752-DD	194
		90°	3 / 2	RC-40-1753-DD	211
		90°	4 / 2	RC-40-1754-DD	225
		90°	6 / 3	RC-40-1756-DD	268
Changeover					
 Screw Fixing		45°	1 / 1	RE-40-3251-A	118
		45°	2 / 2	RE-40-3252-A	156
		45°	3 / 3	RE-40-3253-A	193
		45°	4 / 4	RE-40-3254-A	250
 Screw Fixing		45°	3 / 3	RC-40-3253-B	225
		45°	4 / 4	RC-40-3254-B	281
 Central Nut Fixing		45°	3 / 3	RC-40-3253-DC	269
		45°	4 / 4	RC-40-3254-DC	326

Switch Body Description				Catalog Number ②	Price
Switch Handle ③	Function	Switch Angle	Poles/Switch Wafers		
Step					
 Screw Fixing		45°	1 / 2	RE-40-5261-A	175
		 Screw Fixing		45°	1 / 2
 Screw Fixing				45°	1 / 3
		Reversing			
 Screw Fixing		45°	3 / 3	RE-40-7303-A	187
Wye-Delta					
 Screw Fixing		45°/90°	3 / 4	RE-40-7323-A	238
 Screw Fixing		60°	3 / 4	RE-40-7553-A	238
Single Winding (Two Speed)					
 Screw Fixing		45°	3 / 4	RE-40-7293-A	238

See **Ordering Instructions** on next page. ➡

① Rated current can be lower depending on application. Check R-Line Technical Section before selecting switch size.
 ② See page K39 for Circuit Diagrams.
 ③ See page K11 for description of switch handles.

R-Line Base Mounted 40 Amp Rotary Switches with Handle ①

Switch Body Description				Catalog Number ②	Price
Switch Handle ③	Function	Switch Angle	Poles/Switch Wafers		
Step					
 <p>Screw Fixing</p>		90°	3 / 2	RA-40-1753-A	179
		90°	4 / 2	RA-40-1754-A	194
		90°	6 / 3	RA-40-1756-A	236
 <p>Screw Fixing</p>		90°	3 / 2	RA-40-1753-N	187
		90°	4 / 2	RA-40-1754-N	200
		90°	6 / 3	RA-40-1756-N	240

A UL Type 4X switch handle is available for RA-40 switches. First select switch from this page, then turn to Accessories Section (page K40) and order Type R switch handle separately.

Ordering Instructions

RE-40 –		1753	–	A
Switch Configuration	Circuit Diagram # ②	Handle Code ③	for use with	
RE - Front (Panel) Mounted 40 amp switch	1751-1756 ON-OFF 3251-3504 Changeover	A - Type A	RE/RA switch	
RA - Base Mounted 40 amp switch	5261-5281 Step 7293 Single Winding 7303 Reversing 7323-7553 Wye-Delta	B - Type B ④ N - Type N DC - Type DC ④ DD - Type DD ④	RC switch RE/RA switch RC switch RC switch	

Catalog numbers include a complete switch and handle kit.

① Rated current can be lower depending on application. Check R-Line Technical Section before selecting switch size.
 ② See page K39 for Circuit Diagrams.
 ③ See page K11 for description of switch handles.
 ④ Not available on RA-40 Base Mounted switches.

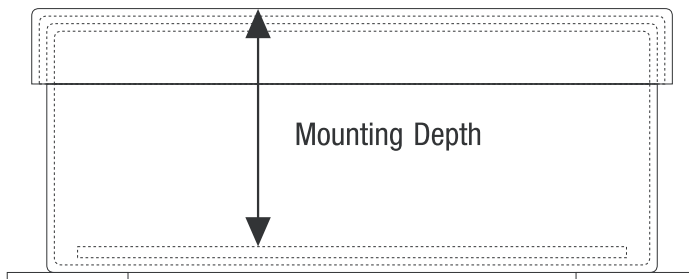
Modular Shaft Extension system ❶

Shaft Extension Modules are ideal for lengthening the shaft of an RA-40 switch up to 144mm (≈5.5"). These rugged polycarbonate modules are 24mm (≈15/16") long and snap on "piggyback" to one another without the use of tools. Strong center shafts interlock as each module is snapped together. The standard 44mm end shaft supplied with every RA-40 switch connects the last Extension Module to the Switch Handle Assembly. End shafts of 52 and 57mm are also available, making this modular system versatile, fast and economical. Shaft Extension Modules are supplied two per package.



Determining modular shaft extension components

- Determine mounting depth. This is the distance from the inside mounting surface of the enclosure to the **outside surface** of the enclosure cover. See diagram below for details.



- If necessary, convert mounting depth inches to millimeters (inches x 25.4 = millimeters).
- In the Modular Shaft Extension Table to the right, find the correct range for your enclosure in the Mounting Depth column.

NOTE: Table is based on an RA-40 switch body with two wafers (3 or 4 pole). For a switch body with more or less wafers, add or subtract the following from overall Mounting Depth before referring to table:

RA-40 Switch Body - ±17.5mm per wafer

- Order the End Shaft and number of Extension Modules required for that mounting depth.

Modular Shaft Extension Components

Component	Catalog Number	Price
44mm End Shaft (supplied with RA-40 Switch Body Assembly)	LA2-G2830	3.25
52mm End Shaft	LA2-G3194	4.00
57mm End Shaft	LA2-G3195	4.00
Extension Module (two per pkg - priced per pkg)	LA2-G2853	9.00

Modular Shaft Extension Table

Number of Extension Modules	Required End Shaft	Mounting Depth (mm)
		Switch Body RA-40
0	44mm ②	98.5 - 104.5
0	52mm	100.5 - 114
0	57mm	109 - 119
1	44mm ②	122.5 - 128.5
1	52mm	124.5 - 138
1	57mm	133 - 143
2	44mm ②	146.5 - 152.5
2	52mm	148.5 - 162
2	57mm	157 - 167
3	44mm ②	170.5 - 176.5
3	52mm	172.5 - 186
3	57mm	181 - 191
4	44mm ②	194.5 - 200.5
4	52mm	196.5 - 210
4	57mm	205 - 215

❶ For Type R (4X) switch handle shaft extensions, see "Type R Switch Handle Extension" table on opposite page.
 ② One 44mm End Shaft is supplied with all Switch Body Assemblies.

Metal shaft extension system ①

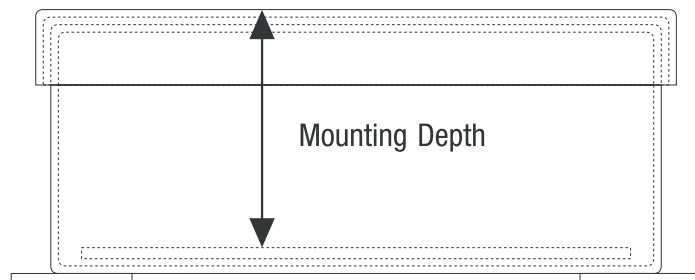
Adjustable metal shaft extensions snap on securely to RA-40 switches via the same quick-connect design as shaft extension modules. Metal shafts are equipped with a door interlock and a padlock hasp for locking out the switch after the enclosure is opened (for outside lockout, select a Switch Handle with lockout capability).



Two standard lengths of these unique adjustable shafts are available. Metal shaft extensions mate with any of the standard Switch Handles. All necessary hardware is supplied with the shaft.

Determining metal shaft extension

- Determine Mounting Depth. This is the distance from the inside mounting surface of the enclosure to the **outside surface** of the enclosure cover. See diagram below for details.





- If necessary convert Mounting Depth inches to millimeters (inches x 25.4 = millimeters).
- In the appropriate table to the right, find the correct range for your enclosure in the Mounting Depth column.

NOTE: Tables are based on an RA-40 switch body with two wafers (3 or 4 pole). For a switch body with more or less wafers, add or subtract the following from overall Mounting Depth before referring to table:

RA-40 Switch Body- ±17.5mm per wafer

- Order the Metal Shaft Extension required for that Mounting Depth and switch handle.

Metal Shaft Extension Components

Component	Catalog Number	Price
Short Metal Shaft  Length: 10 ... 235mm (4-21/64...9-1/4 in.)	LA2-G3393	38
Long Metal Shaft  Length: 230 ... 350mm (9-3/64...13-51/64 in.)	LA2-G3394	47

Metal Shaft Extension Table

Metal Shaft Extension	Mounting Depth (mm)	
	Switch Body	RA-40
LA2-G3393	205 ② - 336	
LA2-G3394	325 - 451	

Type R Switch Handle Shaft Extensions

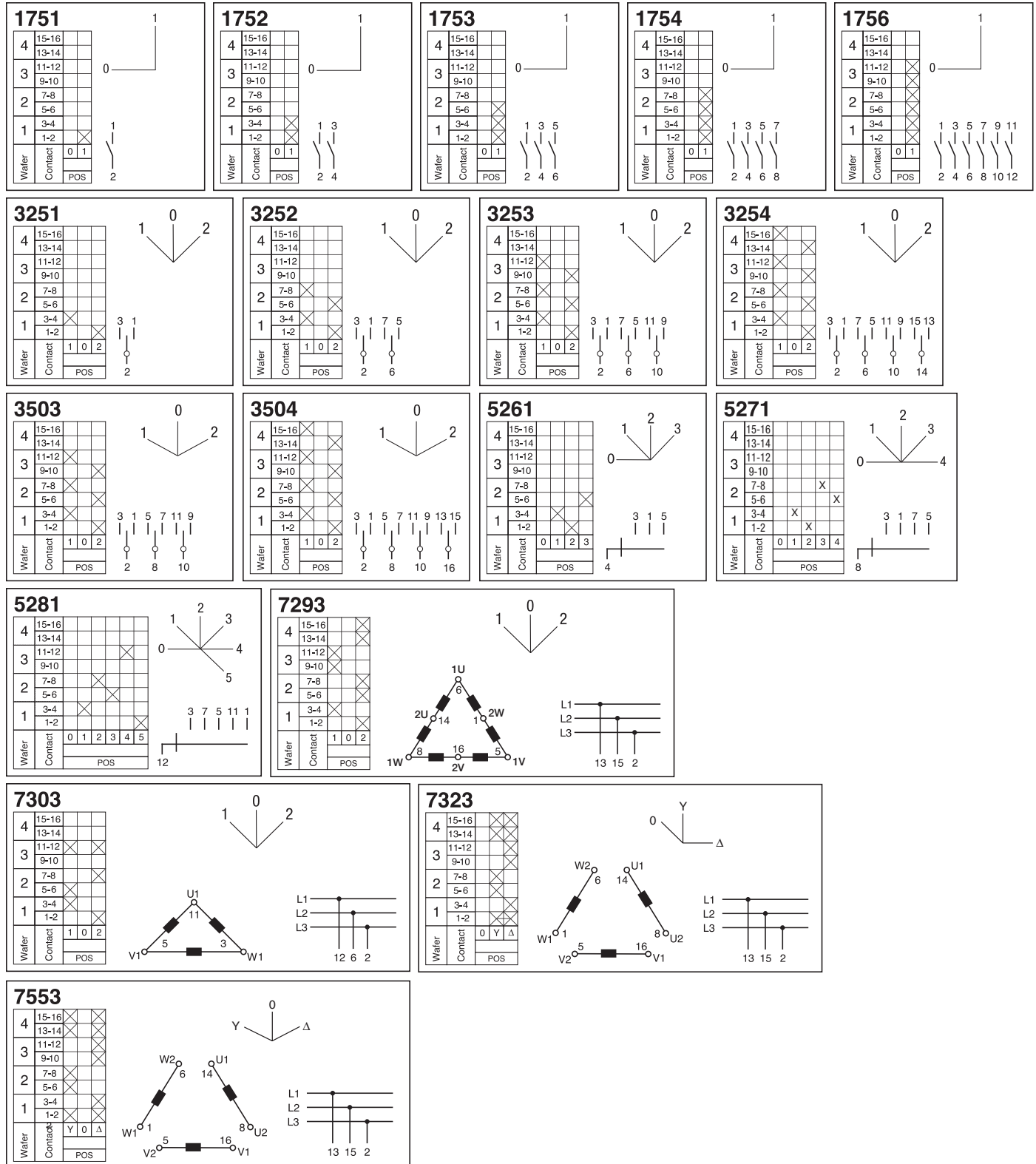
Only select shaft extension from this table if ordering the Type R (UL Type 4X) Switch Handle from the Accessories Section (page K41). Select shaft after figuring overall Mounting Depth.

Type R Switch Handle Shaft Extension (typical)		
Mounting Depth (mm)	Catalog Number	Price
Switch Body RA-40		
119 - 143	LA2-G-194R1 -67	32.25
124 - 148	LA2-G-194R1-72	
131 - 155	LA2-G-194R1-79	
139 - 163	LA2-G-194R1-87	
142 - 166	LA2-G-194R1-90	
149 - 173	LA2-G-194R1-97	
156 - 180	LA2-G-194R1-104	
167 - 191	LA2-G-194R1-115	








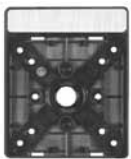
NOTE: Shafts of any length up to 457mm (18") can be ordered. Contact your Sprecher + Schuh representative.

① Not for Type R (UL 4X) switch handles. Use Type R Switch Handle Extension table on this page.
 ② This dimension can be reduced by another 55mm by cutting the plastic sleeve and further cutting the metal shaft.

Circuit Diagrams



R-Line Switch Accessories

Accessory	Description	Catalog No.	Price
	Shaft for RE switch (One supplied with each LE switch)	L2-G3380	5.00
	Standard knob 37.5 mm Black Red 48 mm Black Red	L2-G3154N L2-G3154R L2-G3155N L2-G3155R	3.50 3.50
	Padlockable knob Black Red	L2-G2864N L2-G2864R	7.15
	Self-contained knob allows mounting RE-40 switches without Switch Handle Assembly IP40 protection IP65 protection	L2-G2851N L2-G2854N	6.50 9.00
	"ON-OFF" Switch Handle Assembly - accepts 3 padlocks Yellow and Red Gray and black	LFS2-N-6-175 LFS2-G-6-175	21.00
	Nameplate & holder -Snaps on to top of escutcheons with Handle Code "N" or "G"	R-G3667	15.75
	Type R UL Rated 4X Switch Handle Defeatable door interlock, for base mount switches only	L10-HS4E	See Page L9
	Front frame (blank nameplate)	L2-G3196	11.50

Accessory	Description	Catalog No.	Price
	Legend plate - blank for engraving Silver Yellow	LL2-A-6-000 LL2-I-6-000	2.95
	Legend plate - 0 - I, 90° Yellow	LL2-I-6-175	2.95
	Terminal cover - 3 or 4 pole For RA-40 For RE-40	RA-40-C4 RE-40-C4	15.50 11.35
	Extensions to mounting plate - minimum 35mm, maximum 171mm	R-G1761	29.00
	Mounting tool for mounting central nut switch handles FPR RE-40	D7-AW2	See Page H62
	Dust Cover (not IP rated) FOR RE-40 1 or 2 switch wafers 3 or 4 switch wafers 5 or 6 switch wafers	RE-G3180 RE-G3181 RE-G3182	32.75 37.00 43.00

DISCONTINUED

K
Rotary Cam Switches
R-Line

❶ Order shaft from "R"-type Shaft Extension table on page K39.

Technical Information

				R-40
Rated Operating Voltage	UL/CSA	[V]	600	
	IEC/VDE/BS	[V]	690	
Rated Isolation Voltage				
Impulse		[V]	8	
Continuous			690	
Rated Thermal Current I_{th}	UL/CSA	[A]	40	
	IEC/VDE/BS	[A]	45	
Rated Thermal Current I_{the}	IEC/VDE/BS	[A]	45	
Rated Operating Current I_e				
AC-1/ AC21A	Switching resistive loads with slight overload	IEC947	690V	[A] 40
AC-22A	Switching mixed resistive and inductive loads at slight overload	IEC947	220-500V 600V	[A] 40
Short Circuit Current				
	Rated conditional (note type & fuse size)		[kA]	5
	Maximum fuse rating of circuit, non-enclosed UL fuse type		[A]	40
				Class J
Rated Operating Powers P_e ①				
AC-3	Squirrel-cage motors: starting and stopping of running motors	3Ø	230V	[kW] 7.5
		3 pole	400V	[kW] 18.5
			690V	[kW] 18.5
AC-4	Starting squirrel-cage motor starting, reversing, electric braking, inching	3Ø	230V	[kW] 5.5
		3 pole	400V	[kW] 7.5
			500V	[kW] 11
AC-23A	Periodic switching of motors or other highly inductive loads.	3Ø	230V	[kW] 11
		3 pole	400V	[kW] 11
			690V	[kW] 22
Rated Power				
	UL/CSA			
	Across the line AC motor starting	3Ø	240V	[HP] 10
	DOL-rating	3 pole	480V	[HP] 25
			600V	[HP] 25
		1Ø	120V	[HP] 2
		2 pole	240V	[HP] 5
			480V	[HP] 10
			600V	[HP] 15
	General use		600VAC	[A] 40
Rated Breaking Capacity				
	690V		[A]	196
	Power factor			0.45
DC-20 Switching				
	Rated operating current I_e		[A]	40
DC-1 Switching				
DC-21A Switching				
	Rated operating current I_e		[A]	25
	V max pole		[V]	60
DC-23 Switching				
	Rated power	24VDC	[kW]	0.3 (1)
		48VDC	[kW]	0.5 (2)
	(the numbers in brackets indicate the number of poles that must be connected in series)	60VDC	[kW]	1 (2)
		110VDC	[kW]	2 (3)
		220VDC	[kW]	2.2 (5)

				R-40
DC-13 Switching				
	24VDC	[A]		16
	48VDC	[A]		8
	60VDC	[A]		4.8
	110VDC	[A]		2
	220VDC	[A]		0.6
	380VDC	[A]		0.4
	500VDC	[A]		0.3
Maximum Wire Gauges				
Single/multi-core wire	(1 wire)	[mm ²]		10/6
		[AWG]		8/10
Single/multi-core wire	(2 wires)	10/10		10/10
		[AWG]		8/10
Minimum Wire Gauges				
Single/multi-core wire	(1 wire)	[mm ²]		4/2.5
		[AWG]		12/14
Terminals				
	Terminal Type			Screw M4
Protection Class				
Switch Handle Assembly				
LFS2-G(N)-6...	UL			3R
L10-HS4E	UL			4X
LFS(C)2-...4(6, 8, 13)...	IEC 529			IP66
Switch Body	IEC 529			IP20
Mechanical Life				
		[Millions of ops.]		1
Maximum Mechanical Operations (without derating)				
		[cycle/hr.]		1200
Maximum Electrical Operation (without derating)				
		[cycle/hr.]		120
Ambient Temperature				
Operation	Min...Max	[C°]		-25...+60
Storage only	Min...Max	[C°]		-40...+80
Maximum Altitude (without derating)				
		[m]		≤2000
		[ft.]		≤6561

Approvals*

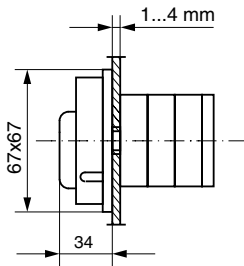


*approved resp. testing successful

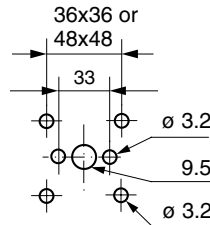
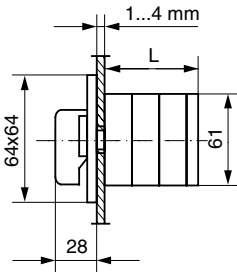
RE-40 Panel Mounting

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.

Type G/N



Type A

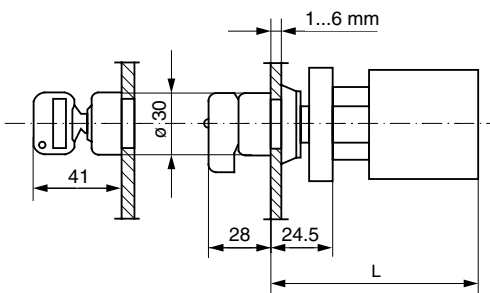


Drill Plan (operator)

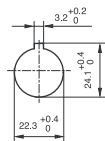
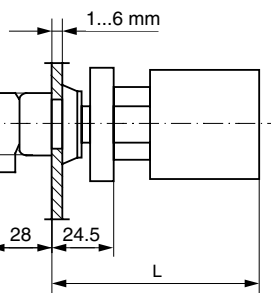
Screw Fixing (RE-40)

Type	"L" Dim (# of wafers)			
	1	2	3	4
RE-40	41	58.5	76	93.5

Type D (RC-40)



Type B (RC-40)



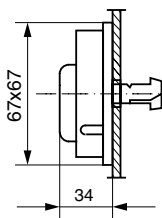
Drill Plan (operator)

Central Fixing (RC-40)

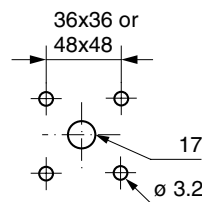
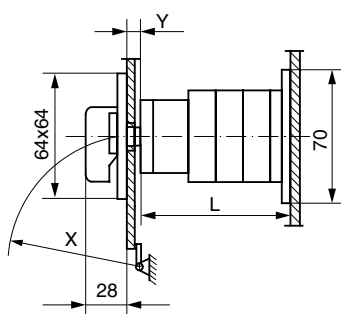
Type	"L" Dim (# of wafers)							
	1	2	3	4	5	6	7	8
RC-40	86	103.5	121	138.5	156	173.5	191	208.5

RA-40 Base Mounting

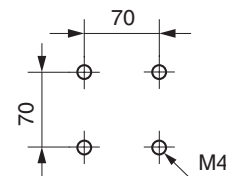
Type G/N



Type A

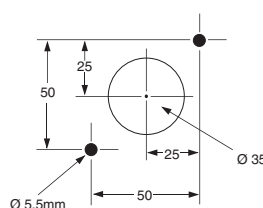
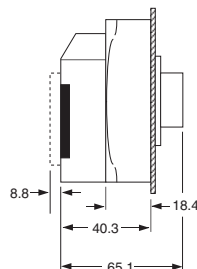
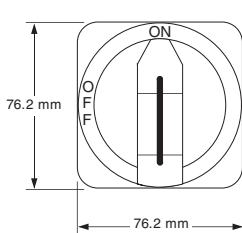


Drill Plan (operator)



Drill Plan (base)

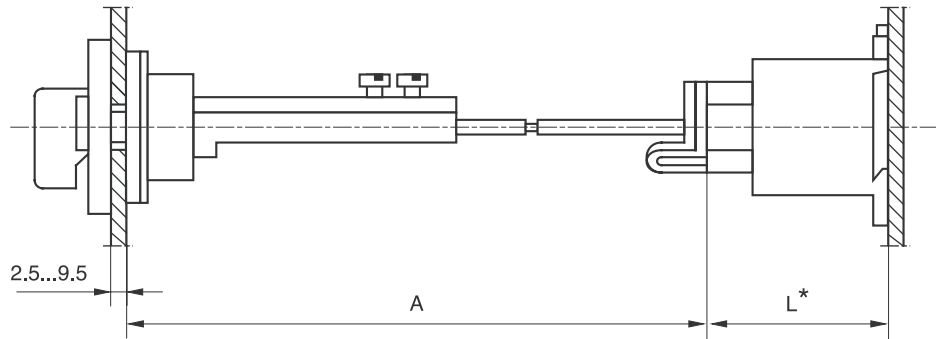
Type R



Type	"L" Dim (# of wafers)			
	1	2	3	4
RA-40	42.5	60	77.5	95

RA-40 Base Mount with Metal Shaft Extension

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



Type	"L" Dim (# of wafers)			
	1	2	3	4
RA-40	42.5	60	77.5	95

Type	"A" Dim
LA2-G3393	110 - 235
LA2-G3394	230 - 350

* Add 2.5mm for DIN rail 46277.