

MULTICIRCUIT ROTARY SWITCHES

75, 76, 77 A.C. Series

General Description

These Rotary Switches are manufactured in three basic frame sizes; the 75AC range which consists of four switch units, the 76AC range having six units and the 77AC range having ten units.

Each switch unit houses a pair of cam operated beryllium copper arms with fine silver contacts.

Contacts & Terminals

The clearly labelled brass 4BA stud terminals are normally provided with two locknuts for easy wiring but, if required, 'push-on' type connectors may be fitted.

Mechanism

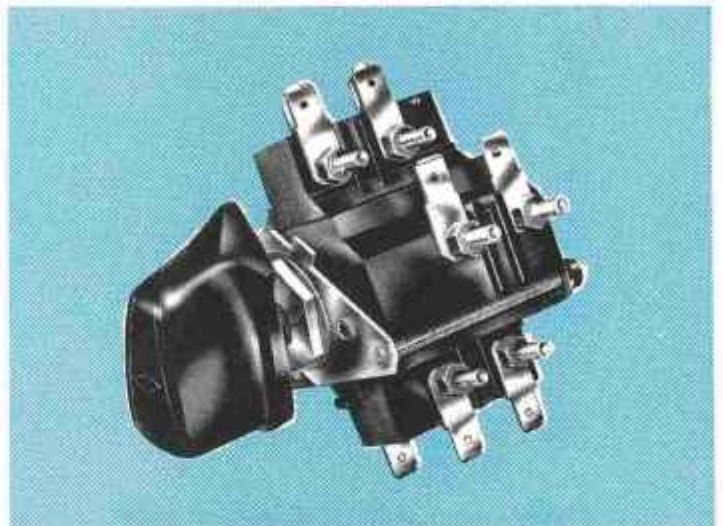
The operating mechanism is of the star wheel slow break type and can be provided with four, six, eight, ten or twelve position indexing. Restriction can be provided to limit the movement to any intermediate number of positions. The addition of a restricted movement cam results in an increase in switch length of approximately $\frac{3}{8}$ in.

Mounting

These switches can be supplied for back of panel or base mounting. Panel mounting switches can have either single hole bush fixing or two screw fixings.

When ordering, the following suffixes should be added to the catalogue numbers:- A or B for one hole bush fixing, depending upon the bush length required, C for two screw fixing, or D for base mounting.

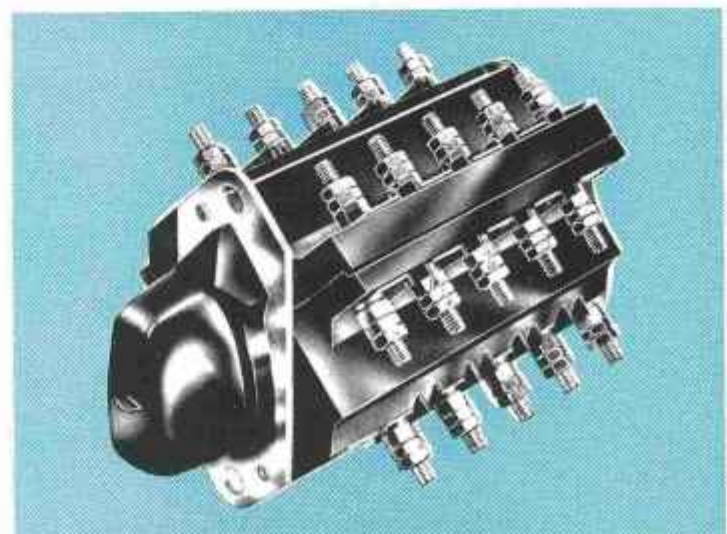
Black moulded bakelite pointer handles are supplied as standard with these switches.



Type 75AC with bush fixing and push-on terminals.



Type 76AC showing base mounting plate.



Type 77AC showing two screw mounting plate.



Contact Ratings

The standard rating is 10A 250V AC only, per contact (non-inductive).

DC ratings are given in the table below.

Special 440V AC ratings will be given on request.

AC		DC	
Voltage	Amps	Voltage	Amps
250	10	250	.2
125	15	200	.3
—	—	150	.4
—	—	100	.5
—	—	50	1.0
—	—	24	5.0
—	—	12	15.0

Standard Circuits

Due to the extreme flexibility of these switches, allowing as it does for variations in the number of poles, positions, external links and cam shapes, the possible switch combinations are innumerable. It is not practicable to list all of the combinations available and therefore, where your requirements are not covered in the following list of standard circuits, please contact our Sales Engineers who will be pleased to help you.

Switch Sequence	No. of Poles	Catalogue Number	Switch Sequence	No. of Poles	Catalogue Number	Switch Sequence	No. of Poles	Catalogue Number
0:1:0:1	1	75 AC 34	2 circuit Selective no OFF position 1:2:1:2	1	75 AC 41	2 circuit selective with 2 OFF positions 0:1:0:2	1	75 AC 14
	2	75 AC 2		2	75 AC 9		2	75 AC 12
	3	76 AC 3		3	76 AC 20		3	75 AC 15
	4	75 AC 26		4	76 AC 29		4	75 AC 43
	5	76 AC 16		5	76 AC 50		5	76 AC 39
	6	76 AC 31		6	76 AC 58		6	76 AC 57
	7	77 AC 32		7	77 AC 60		7	77 AC 59
	8	77 AC 33		8	77 AC 62		8	77 AC 61
	9	77 AC 46		9	77 AC 64		9	77 AC 63
	10	77 AC 47		10	77 AC 66		10	77 AC 65
2 circuit collective with 2 OFF positions 0:1:0:1+2	1	75 AC 67	3 circuit selective with 1 OFF position 0:1:2:3	1	75 AC 22	4 circuit selective no OFF position 1:2:3:4	1	75 AC 5
	2	75 AC 68		2	75 AC 24		2	75 AC 4
	3	76 AC 69		3	76 AC 28		3	76 AC 75
	4	77 AC 70		4	77 AC 44		4	77 AC 76
	5	77 AC 71		5	77 AC 56		5	77 AC 77

Switch Sequence	No. of Poles	Catalogue Number	Switch Sequence	No. of Poles	Catalogue Number
3 circuit collective with 1 OFF position 0:1:1+2:1+2+3	1	75 AC 54	5 circuit selective with 1 OFF position 0:1:2:3:4:5	1	76 AC 19
	2	76 AC 73		2	76 AC 52
	3	77 AC 74		3	77 AC 78
6 circuit selective with no OFF position 1:2:3:4:5:6	1	76 AC 1	6 circuit selective with 2 OFF positions 0:1:2:3:0:4:5:6	1	76 AC 80
	2	76 AC		2	76 AC 81
	3	77 AC 79		3	77 AC 82
7 circuit selective with 1 OFF position 0:1:2:3:4:5:6:7	1	76 AC 83	8 circuit selective with no OFF position 1:2:3:4:5:6:7:8	1	76 AC 48
	2	77 AC 84		2	77 AC 85
8 circuit selective with 2 OFF positions 0:1:2:3:4:0:5:6:7:8	1	75 AC 86	9 circuit selective with 1 OFF position 0:1:2:3:4:5:6:7:8:9	1	76 AC 88
	2	77 AC 87		2	77 AC 89
10 circuit selective with 2 OFF positions 0:1:2:3:4:5:0:6:7:8:9:10	1	76 AC 91	10 circuit selective with no OFF position 1:2:3:4:5:6:7:8:9:10	1	76 AC 49
	2	77 AC 92		2	77 AC 90
11 circuit selective with 1 OFF position 0:1:2:3:4:5:6:7:8:9: 10:11	1	76 AC 93	12 circuit selective with no OFF position 1:2:3:4:5:6:7:8:9:10 11:12	1	76 AC 37

TERMS USED ABOVE

Term used	Equivalent Circuit	Switch Sequence	Term used	Equivalent Circuit	Switch Sequence
Collective		OFF: P-1: P-1+2 P-1+2+3	Selective		OFF: P-1: P-2: P-3

Meter Switching

This series of switches is particularly suited to meter switching circuits, particularly where many circuit functions must be indicated on the smallest possible number of meters.

The following list details some of the common applications in this field.

GENERAL APPLICATIONS

System	Application	Catalogue Number
	To insert an ammeter into any one of eight lines in turn.	77 AC 197
2 single phase	For inserting a direct reading ammeter in each of two circuits with a virtual 'OFF' position.	76 AC 361
3 phase 3 wire	For inserting a direct reading ammeter in each of the three phases with an 'OFF' position.	77 AC 312
3 phase 3 wire	To indicate by means of one ammeter the current in the two phases with an 'OFF' position (using CT's).	76 AC 359
3 phase 3 wire	As above—without 'OFF' position.	76 AC 360
3 phase 3 wire	To switch the current coil of a wattmeter, an ammeter and a voltmeter in order to measure total or individual phase in a three phase circuit.	77 AC 260
3 phase 4 wire	For inserting a direct reading ammeter in each of the three phases and neutral, no 'OFF' position.	77 AC 313

AMMETER SWITCHES USING INSTRUMENT TRANSFORMERS

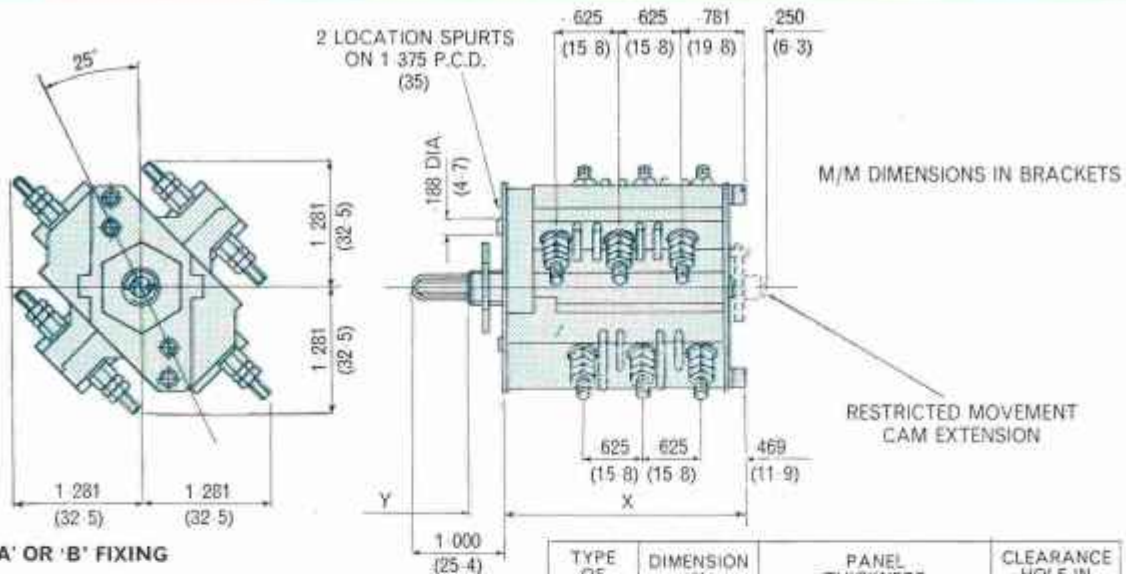
System Star connected	To indicate by means of a single Ammeter	Catalogue Number
3 phase 3 wire	Current in each phase with an 'OFF' position.	76 AC 318
3 phase 3 wire	Current in each phase and leakage or out of balance current, no 'OFF' position.	75 AC 516
3 phase 4 wire	Current in each phase and neutral, no 'OFF' position.	77 AC 311

DOUBLE POLE SWITCHES USED WITH A SINGLE VOLTMETER

System	To indicate with a single voltmeter	Catalogue Number
Single phase	Voltage across two alternate supplies with an 'OFF' position.	75 AC 12
3 phase 3 wire	Voltage between phases with an 'OFF' position.	75 AC 432
3 phase 4 wire	Voltage between any phase and neutral with 'OFF' position.	75 AC 22
3 phase 4 wire	Voltage between phases and between phases and neutral with '2 OFF' positions.	77 AC 235
3 phase 4 wire	Voltage between phases and between phase and neutral, without an 'OFF' position.	76 AC 248
3 phase 4 wire	Voltage between phase and neutral on two three phase supplies with '2 OFF' positions.	77 AC 256
3 phase 4 wire	Voltage between phases on one supply and phase—neutral on alternate supply with '2 OFF' positions.	77 AC 257

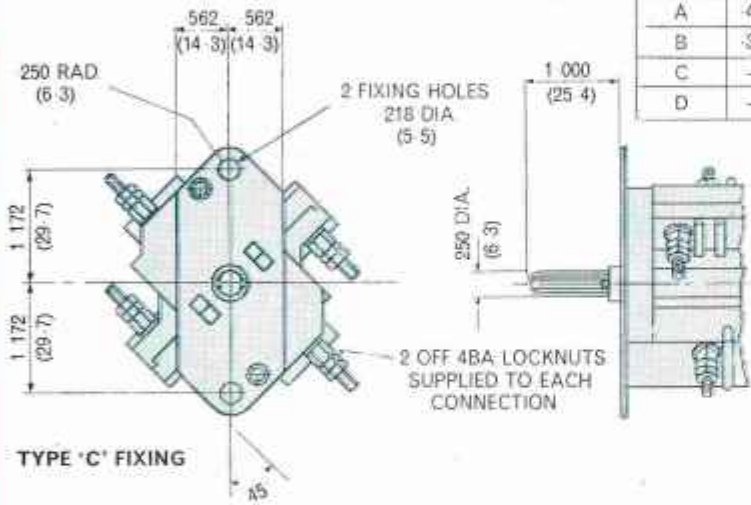
Switches can be supplied in special sequences to suit customers' individual requirements.

SERIES 75, 76, 77 A.C. DIMENSIONS



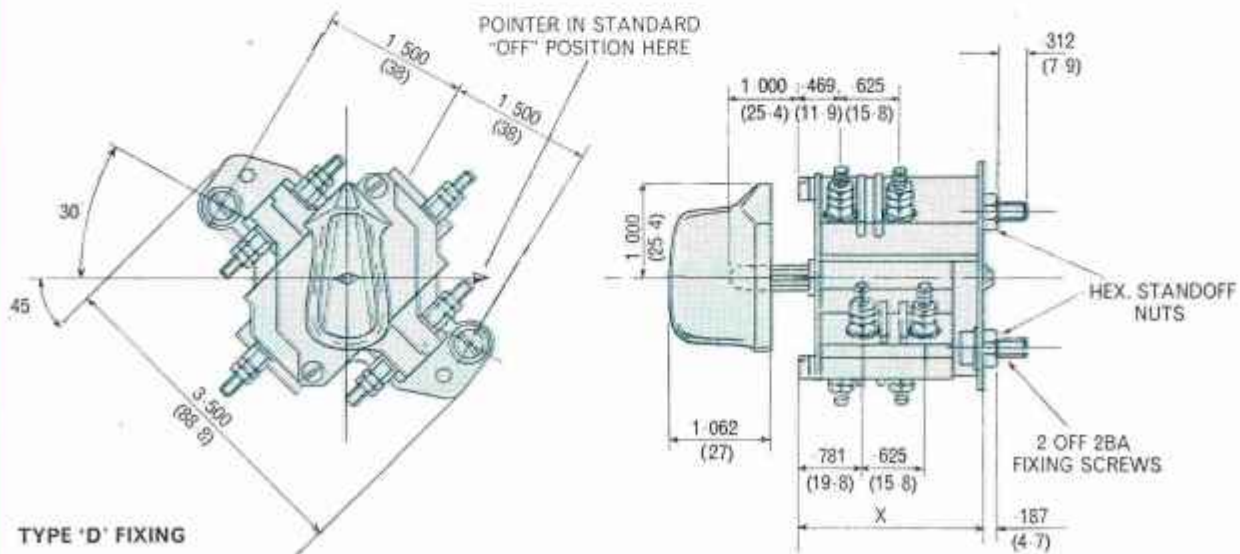
TYPE 'A' OR 'B' FIXING

TYPE OF FIXING	DIMENSION Y		PANEL THICKNESS				CLEARANCE HOLE IN PANEL	
			INS.		M/M		INS.	M/M
	INS.	M/M	MIN.	MAX.	MIN.	MAX.		
A	469	11.9	.250	.375	6.3	9.5	.437	11
B	.312	7.9	.062	.218	1.5	5.5	.437	11
C	—	—	—	.375	—	9.5	.437	11
D	—	—	—	—	—	—	.437	11



TYPE 'C' FIXING

SWITCH	DIMENSION X		TYPE OF FIXINGS AVAILABLE
	INS.	M/M	
75 AC	1.937	49.2	A, B, C or D
76 AC	2.562	65.1	A, B, C or D
77 AC	3.812	96.8	C or D



TYPE 'D' FIXING

DIAMOND H CONTROLS LTD

(a subsidiary of Oak Electro/Netics Corp.)

VULCAN ROAD NORTH, NORWICH, NOR 85N Telephone: Norwich 45291/5 Cables: Diamonhart, Norwich