

## Basic technical concepts

### Definitions

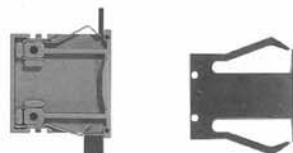
- 1 - Switch module:** allows data to be entered in coded form.
- 2 - End caps:** form the end pieces of a bank of switch modules and hold the bank in place on the panel.
- 3 - Separator module:** allows 2 banks of switch modules to be combined into a single block.
- 4 - Spacer:** non-working module which may have to be inserted in a bank of modules in certain cases.
- 5 - Coded blank module:** allows two separate circuits to be switched simultaneously from a single actuator. It is actuated from the adjoining module via a coupling shaft.



### Mounting in panels

**Mounted from front:**  
**84 210 / 211 / 212**  
 By spring clips (supplied in pairs) which have to be fitted to end caps or separator modules.  
 Clips can be fitted in either of two positions to suit thickness of panel.

**84 214**  
 By clips built into caps.



### Colours of modules and wheels

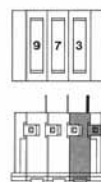
Grey modules.  
 Black wheels numbered in white.

### Lockout stops

These determine two range-end numbers, to be specified when ordering.  
 If required, the range-setting operation can be carried out by the user.

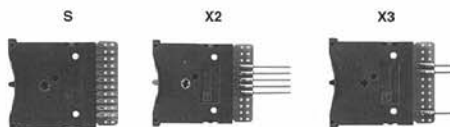
### Switch output

Standard model : output on right



### Connections

- S** for soldering wires straight to switch or plugging connector onto switch
- X2** By wire-wrap tags
- X3** By solder tags to printed circuit



### Connectors for 84 210 - 211 - 212

- W2** Solder tags
- X2** Wire-wrap tags
- X3** Solder tags to printed circuit



### Connecting modules (to form banks)





84 210 - 211 - 212

84 214



## Guide to selecting a thumbwheel switch

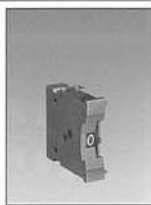


	Pitch (mm)	Overall height (mm)	Digit dimensions (mm)	Mounted from front	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Page
<b>Starwheel</b>												
	8	33	4.5 x 2.8	●	●	●	*	*	*	*	*	3/4
<b>Rocker</b>												
	10	33	4.5 x 2.8	●	●	●	*	*	*	*	*	3/5
	12.5	58	6 x 3.75	●	●	●	*	*	*	*	*	3/5
	7.62	24	4 x 2.5	●	●	●	*	*	*	*	*	3/5

- (A) Decimal
- (B) BCD
- (C) BCD + complement
- (D) Changeover
- (E) BCD complement
- (F) BCD excess 6 + complement
- (G) Special two-pole plus/minus

\* Please consult us

# Thumbwheel switches



Miniature, starwheel

### Electrical characteristics

Assigned working voltage	0,1 → 48 V <sub>~</sub>
	0,1 → 48 V <sub>DC</sub>
Nominal load current	0,1 → 100 mA
Max. non-switchable current	1 A
Max. internal resistance	200 m Ω
Min. insulation resistance	10 <sup>5</sup> M Ω
- between tracks	600 V <sub>~</sub>
- between tracks and grounds	2500 V <sub>~</sub>

### Mechanical characteristics

Electrical durability (operations) 10<sup>7</sup> Cycles

### Environmental characteristics

Ambient operating temperature - 25 + 70°C  
 Ambient storage temperature - 40 + 85°C

### Standard codes

		MO1										
Type of tracks		C	0	1	2	3	4	5	6	7	8	9
A	MO1*	1	11	10	9	8	7	6	5	4	3	2
	0	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•	•	•
	4	•	•	•	•	•	•	•	•	•	•	•
	5	•	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•	•
	7	•	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•	•
9	•	•	•	•	•	•	•	•	•	•	•	

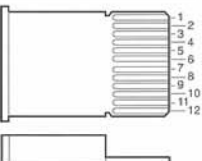
		MO2				
Type of tracks		C	1	2	4	8
A	MO2*	1	9	7	5	3
	0	•	•	•	•	•
	1	•	•	•	•	•
	2	•	•	•	•	•
	3	•	•	•	•	•
	4	•	•	•	•	•
	5	•	•	•	•	•
	6	•	•	•	•	•
	7	•	•	•	•	•
	8	•	•	•	•	•
9	•	•	•	•	•	

A - Position on printed circuit

B - Dial setting

\* For 84 214 only

### OUTPUT LAYOUT



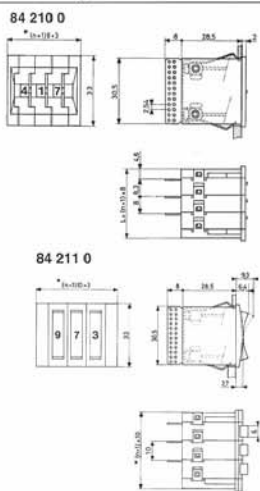
### Features

Front mounting		•	
<b>Types</b>			
Standard 10-position module	84 210 0		
<b>Standard codes</b>			
Decimal	M 01	•	
BCD	M 02	•	
<b>Circuits</b>			
Short	C	•	
<b>Case</b>			
Grey	G	•	
Black	N	•	
<b>Connections</b>			
For soldering or for connector	S	•	
<b>Mounting accessories</b>			
Pair of end caps (with clips)			
Grey	JE/G	79 211 709	
Spacer	Grey	MI/G	79 211 738
Separator module (with clips)	Grey	MS/G	79 211 752
<b>Connectors</b>			
Solder terminals	W2	25 625 493	
For soldering to printed circuit	X3	25 625 495	

### Mechanical characteristics

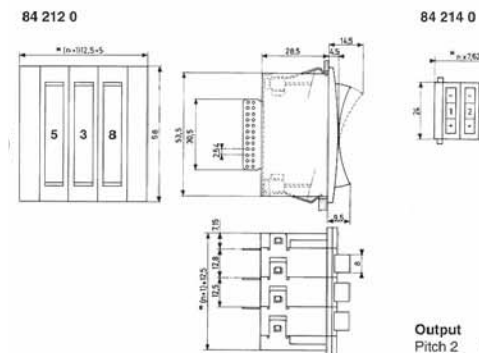
Operating force	N	3
Digit dimensions (H x L)	mm	4,5 x 2,8
Weight	g	5,5

### Dimensions



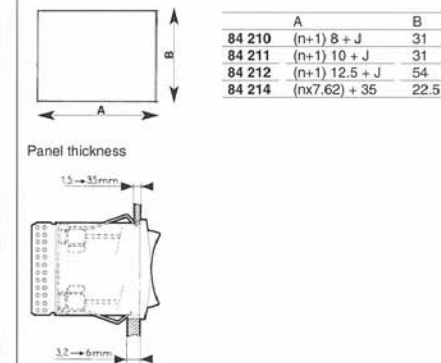
Miniature rocker      Large rocker      Subminiature rocker

84 211 0	84 212 0	84 214 0
79 211 823	79 211 923	79 214 282
79 211 814	79 211 914	79 214 219
79 211 824	79 211 924	
25 625 493	25 625 493	
25 625 495	25 625 495	
5	4	5
4,5 x 2,8	6 x 3,75	4 x 2,5
7,5	14	3,5 → 4

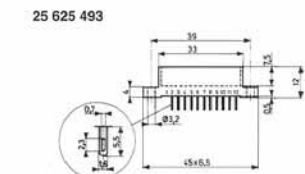


\* n = number of modules  
 J = clearance : 1 mm for 1 ≤ n ≤ 10  
 1,5 mm for 11 ≤ n ≤ 20

### Panel cut-out

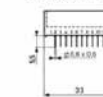


### Connector dimensions



Output Pitch 2 for decimal  
 Pitch 5 for BCD

### 25 625 495



### Other information

For other versions, codes, colours, cases, wheels : please consult us.

### To order, specify :

Standard products, non stocked	1 Type	2 Code	3 Connections	4 Accessories	5 Connectors
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Example : Selector switch 84 210 0 M 01 C G N S - accessories 79 211 709 - connector 25 625 494