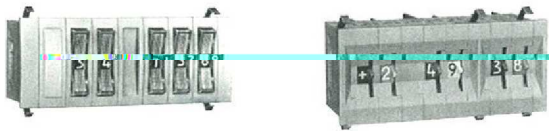


# Basic technical concepts

## Definitions

- 1 - **Switch module**: allows data to be entered in coded forms.
- 2 - **End caps**: form the end pieces of a bank of switch modules and hold the bank in place in a 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 coupling shaft.

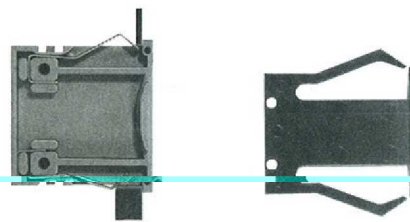


## Mounting in panels

### Mounted from front :

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

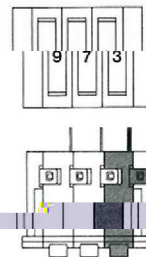
Grey modules  
Black wheels numbered in white.

## Lockout stops

These fix a range of numbers available for setting to, between two range-end numbers to be specified when ordering.  
If required, the range-fixing operation can be carried out by the user.

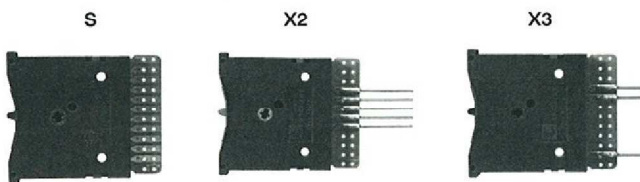
## Switch output

Standard model: output on right



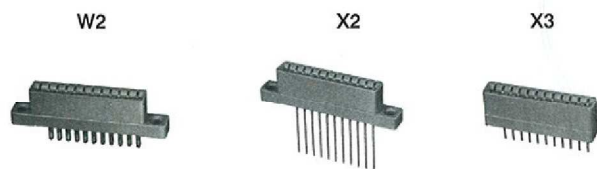
## Connections

- 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

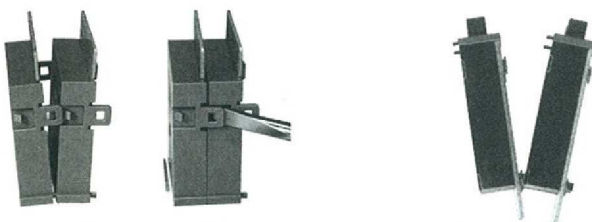
- W2 Solder tags to printed circuit
- X2 Wire-wrap tags
- X3 Solder tags to printed circuit



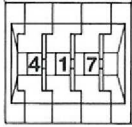
## Connecting modules (to form banks)

84 210 - 211 - 212

84 214

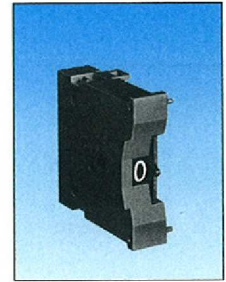


# Guide to selecting a thumbwheel switch

Presentation	Type	Pitch (mm)	Overall height (mm)	Digit dimensions (mm)	Method of setting	Mounted from front	Codes										
							Decimal	BCD	BCD + complement	Change over	BCD complement	BCD excess 6 + complement	Special type pole plus/minus	Kelvin Valley	Hexadecimal BCD + complement	Hexadecimal BCD	
	84 210	8	33	4,5 x 2,8	Starwheel	•	•	•	•	•	•	•	•	•	•	•	•
	84 211	10	33	4,5 x 2,8	Rocker	•	•	•	•	•	•	•	•	•	•	•	•
	84 212	12,5	59	6 x 2,75	Rocker	•	•	•	•	•	•	•	•	•	•	•	•
	84 214	7,62	24	4 x 2,5	Rocker	•	•	•	•	•	•	•	•	•	•	•	•

Standard products non stocked

# Thumbwheel switches



## Electrical characteristics

Operating voltage	$U, I \rightarrow 50V \sim$
	0,1 → 50 V <sub>DC</sub>
Nominal load current	0,1 → 100 mA
Max. non-switchable current	1 A
Max. internal resistance	120 mΩ
Min. insulation resistance	10 <sup>5</sup> MΩ
- between tracks	600 V <sub>~</sub>
- between tracks	2500 V <sub>~</sub>

## Mechanical characteristics

Life (operations)	10 <sup>8</sup>
Vibration resistance under NFC 20616	2000/10

## Environmental characteristics

Operating temperature	- 25 + 70°C
Storage temperature	- 40 + 85°C

## Standard codes

		M01										
Type of tracks		C	0	1	2	3	4	5	6	7	8	9
A	M01*	1	11	10	9	8	7	6	5	4	3	2
	M01	12	11	10	9	8	7	6	5	4	3	2
B	0	•	•									
	1	•		•								
	2	•			•							
	3	•				•						
	4	•					•					
	5	•						•				
	6	•							•			
	7	•								•		
	8	•									•	
9	•										•	

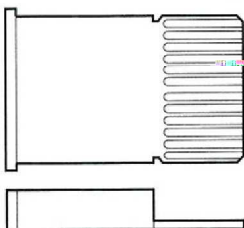
		M02								
Type of tracks		C	1	2	4	8				
A	M02*	1	9	7	5	3				
	M02	9	8	7	6	5				
B	0	•								
	1	•	•							
	2	•		•						
	3	•			•					
	4	•				•				
	5	•					•			
	6	•						•		
	7	•							•	
	8	•								•
9	•									•

## Output layout

A - Position on printed circuit

B - Dial setting

\* For 84 214 only



## Features

Miniature, starwheel

Compatible with display module

Front mounting

## Types

Standard 10-position module **84 210 0**

## Standard codes

Decimal	M 01	•
B.C.D.	M 02	•

## Circuits

Short **C** •

## Case

Grey **G** Black **N** •

## Connectors

For soldering or for connector **S** •

## Mounting accessories

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**

## Connectors

Solder terminals **W2** **25 625 493**

wire-wrap terminals without legs **AE** **25 625 494**

For soldering to printed circuit **X3** **25 625 495**

## Mechanical characteristics

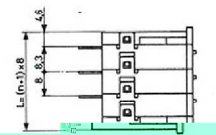
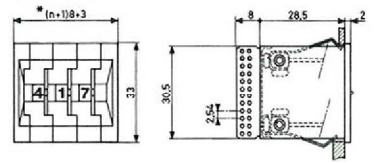
Operating force **N** **3**

Digit dimensions (H x L) **mm** **4,5 x 2,8**

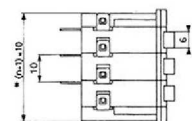
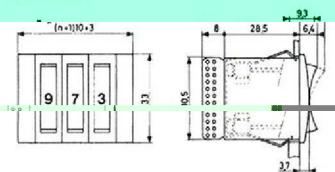
Weight **g** **5,5**

## Dimensions

**84 210 0**



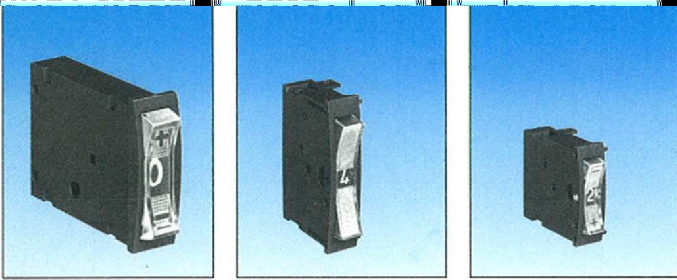
**84 211 0**



## Other information

Other version, codes, colors, case, wheels : please enquire.

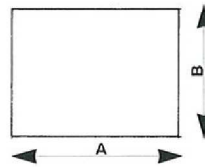




Miniature rocker      Large rocker      Subminiature rocker

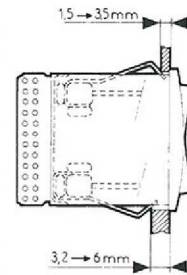
84 217	—	—
•	•	•
84 211 0	84 212 0	84 214 0
•	•	•
•	•	•
•	•	•
•	•	•
•	•	•
•	•	•
79 211 823	79 211 923	79 214 282
79 211 814	79 211 914	79 214 219
79 211 824	79 211 924	
25 625 493	25 625 493	
25 625 494	25 625 494	
25 625 492	25 625 492	
25 625 495	25 625 495	
5	4	5
4,5 x 2,8	6 x 3,75	4 x 2,5
7,5	14	3,5 → 4

**Panel cut-out**



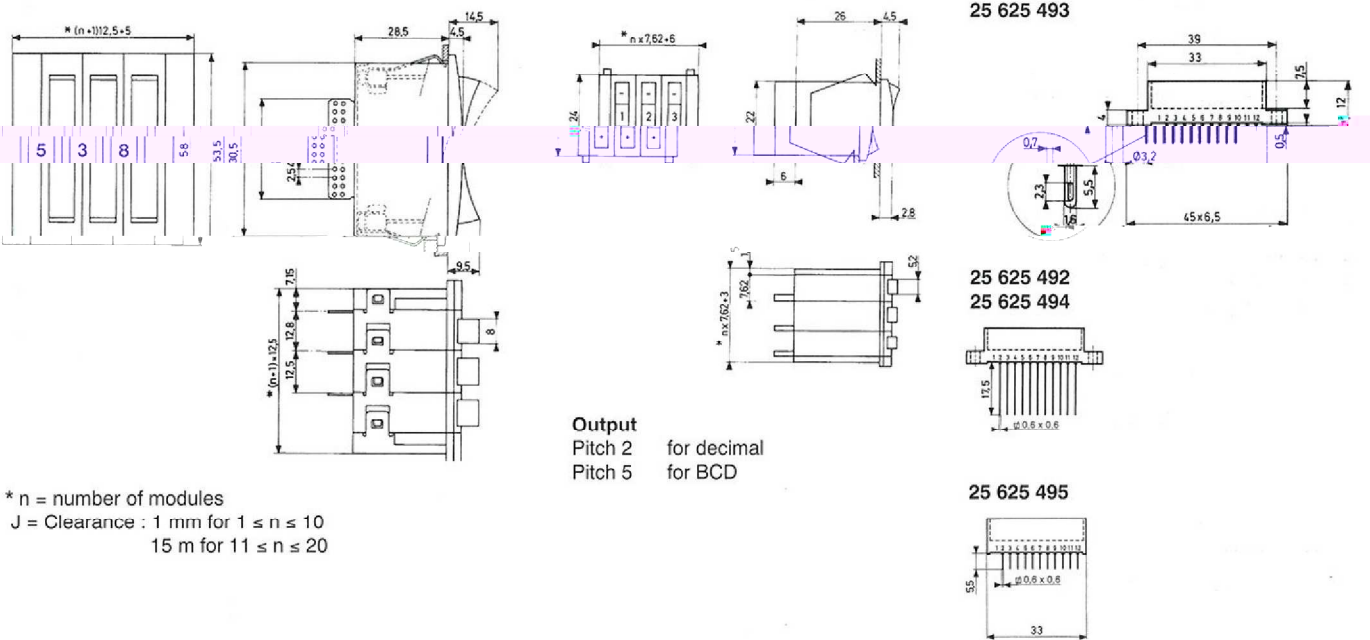
	A	B
84 210	$(n+1) 8 + J$	31
84 211	$(n+1) 10 + J$	31
84 212	$(n+1) 12,5 + J$	54
84 214	$(n \times 7,62) + 35$	22,5

**Panel thickness**



- 1
- 2
- 3
- 4
- 5

**Connector dimensions**



\* n = number of modules  
J = Clearance : 1 mm for  $1 \leq n \leq 10$   
15 mm for  $11 \leq n \leq 20$

**To order, specify :**

- |                      |                      |
|----------------------|----------------------|
| <b>1</b> Type        | <b>2</b> Code        |
| <b>3</b> Connections | <b>4</b> Accessories |
|                      | <b>5</b> Connectors  |

Standard products  
non stocked

Example : Selector switch 84 210 0 M 01 C G N S - accessories 79 211 709 - connector 25 625 494



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