



# TYPE E TL & TPL SWITCHES



CONTROL AND SIGNALING SOLUTIONS FOR HARSH ENVIRONMENTS



# TYPE E TL & TPL SWITCHES



## Robust

### *Long life durability :*

- A reliability recognized for more than 30 years
- Qualified according to nuclear standards IEEE 323 & 344
- A foolproof mechanical and electrical robustness
- Applications in harsh environments

## Configurable

### *Adaptable to your applications :*

- Very numerous available functions:
  - Turn Light
  - Turn-Push Light
  - Turn-Push-Turn Light
- Different types of contacts for all your diagrams and TL or TPL functions
- Many kinds of handles, signaling socket, etc., many possibilities of special functions and diagrams

## APPLICATION

### > Control and signaling of isolator and circuit breakers

- These switches have a particularly strong design which allows them very numerous applications in severe environments (shocks, vibrations, temperature, radiations, earthquakes).
- This range of product is a reference for more than 30 years in control room of nuclear power plants worldwide. It also equips very numerous electrical distribution plants and railways electrical dispatch.
- This range allows to realize all your functions of discrepancy switches for control and signaling of ground isolators and circuit breakers. This range allows also to control contactors, valves circuits, etc. or all your control sequence that requires information feedback by light in order to secure people or equipment's.

## Codification of products

Presentation / Contact / Special assembly / Handle / Escutcheon plate / Signaling and lamps / Function / Contacts scheme / Handle color / Accessories //

Eg: EDM / - / - / 20 / - / L / 402 / 4PA1 / M+TN / ST //

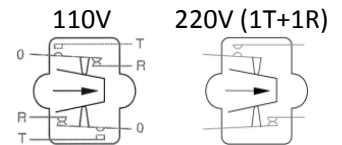
## Presentation

<b>E</b>	Handle Ø20 (Drilling Ø14,5)
<b>EDM</b>	Handle Ø18 (Drilling Ø22,5)
<b>E-EDM</b>	Handle Ø18 (Drilling Ø14,5)



## Contacts

- Product equipped with standard 110V change-over contacts
- 2 Product equipped with 220V contacts : configurable in 2T or 2R or 1T+1R



## Special assembly

<b>C24</b>	Product equipped with a special front part which allow to install it on a mosaic panel □24
<b>C25</b>	Product equipped with a special front part which allow to install it on a MAFELEC C25 mosaic panel □25
<b>C30</b>	Product equipped with a special front part which allow to install it on a mosaic panel □30
<b>ERG</b>	Product equipped with a positioning pin
<b>ESN</b>	Black central nut ( <i>in replacement of the standard chromed central nut</i> )
<b>2-4</b>	Indication of a special positioning different from the standard of the function ( <i>eg. = position 2-4</i> )
<b>SPE</b>	Other special assembly or special realization at request



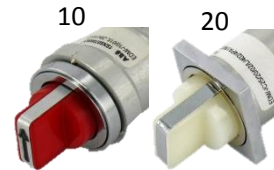
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## Handle

- 10 Handle with arrow (available only with chromed strip)
- 20 Handle without arrow



## Escutcheon plate

- 01 Round chromed symbol (for isolator) :  $\varnothing 26$  for EDM and  $\varnothing 19$  for E or E-EDM
  - 02 Square chromed symbol (for circuit breaker) :  $\square 26$  for EDM and  $\square 19$  for E or E-EDM
  - 11 Round black symbol (for isolator) :  $\varnothing 26$  for EDM and  $\varnothing 19$  for E or E-EDM
  - 12 Square black symbol (for circuit breaker) :  $\square 26$  for EDM and  $\square 19$  for E or E-EDM
  - 04 Round chromed escutcheon (for engraving) :  $\varnothing 36$  for EDM and  $\varnothing 25$  for E or E-EDM
  - 05 Square chromed escutcheon (for engraving) :  $\square 36$  for EDM and  $\square 25$  for E or E-EDM
  - 14 Round black escutcheon (for engraving) :  $\varnothing 36$  for EDM and  $\varnothing 25$  for E or E-EDM
  - 15 Square chromed escutcheon (for engraving) :  $\square 36$  for EDM and  $\square 25$  for E or E-EDM
- « G » in complement of PCC or PRC indicate that product is engraved  
(symbols cannot be engraved)  
Possibility of engraving on request



## Signaling and lamps

- Non-illuminated product or non-equipped with a lamp socket
  - L Product equipped with an T5,5 socket for 1 lamp (Included in standard)
  - 48V  
or  
LED48V The voltage indicated in complement of socket type mean that the product will be supplied with a filament lamp working in this nominal voltage. The indication LED before the voltage mean that the product will be supplied with a white LED lamp working in this nominal voltage.
- (products can be equipped with filaments lamps, white or colored LED lamps, for most common AC/DC nominal voltage)



## Codification of products

Presentation / Contact / Special assembly / Handle / Escutcheon plate / Signaling and lamps / **Function / Contacts scheme** / Handle color / Accessories //

Eg: EDM / - / - / 20 / - / L / 402 / 4PA1 / M+TN / ST //

## Function

402

Function number

Eg : function 402 = TPL 2 fixed positions (9h-12h)

*(Refer to currently used diagrams and functions summary tables)*

402



The function number defines: positions, actions (Turn; Turn-Push; Turn-Push-Turn...), kind of mechanism (Selected or non-selected Push, positions locking...). The function number combined to contact scheme define completely the functioning of the switch.

## Contact scheme

4PA1

We define the correct contact scheme in function of your needs of diagrams , type of electrical contacts, and used positions :

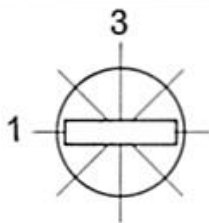
4 : The first number define the number of contacts :

*eg : 4 change-over contacts*

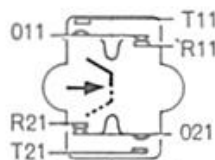
P : It means that the first electrical stage is a Push stage

A1 : A combination of a letter and a number indicate that the second electrical stage is a turn stage equipped with an A cam positioned in 1

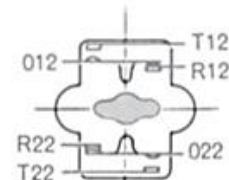
*Example of configuration ... / 402 / 4PA1 / ...*



*Activated in 1*



*Activated in 3*



# Codification of products

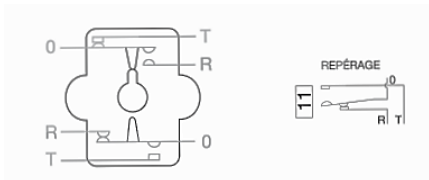
Presentation / Contact / Special assembly / Handle / Escutcheon plate / Signaling and lamps / Function / **Contacts scheme** / Handle color / Accessories //

Eg: EDM / - / - / 20 / - / L / 402 / 4PA1 / M+TN / ST //

## Contact scheme

### 110V Contacts stages :

A switch can be equipped from 1 to 4 stages (2 to 8 change-over contacts). Standard contacts are in silver. For low current application the contacts can be in an gold-silver alloy : option Z in the accessories codification.



A stage is constituted of 2 change-over contacts arranged symmetrically in relation to the horizontal plane.

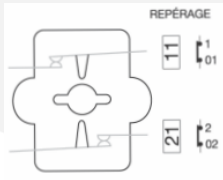
A contact consists of an change-over switch with common point the 3 terminals of which are marked. O (common point) T (NO) R (NC)

### 220V Contacts stages (3 types of stages available):

A switch can be equipped from 1 to 4 stages (beyond, consult us). 220V contacts are available in silver only.

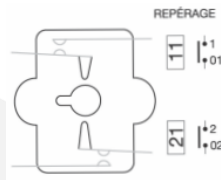
#### Stage 2R :

Consisting of 2 Normally Close contacts.



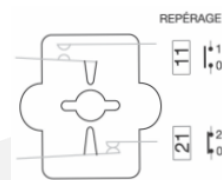
#### Stage 1T :

Consisting of 2 Normally Open contacts.



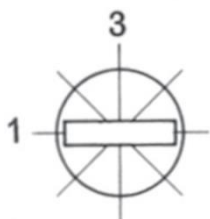
#### Stage 1T+R :

Consisting of 1 Normally Open contact + 1 Normally Close contacts



Configuration example... / 402 / 4PTA1 /...

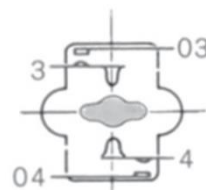
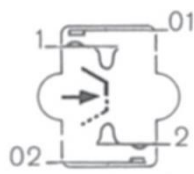
(Stage contacts type 220V is specify by the letter T located after the P which mean push stage)



Activated in 1



Activated in 3



## Codification of products

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Eg: EDM / - / - / 20 / - / L / 402 / 4PA1 / M+TN / ST //

## Handle color

EDM or E-EDM handles :**M** | White translucent handle

Other colors available on request (MR : Red ; MN : Black ; MV : Green ; MJ : Yellow; MBU : Blue...)

**TN** | In complement of the handle it indicate that the strip will be black instead of the standard chromed strip ( often associated with ESN )

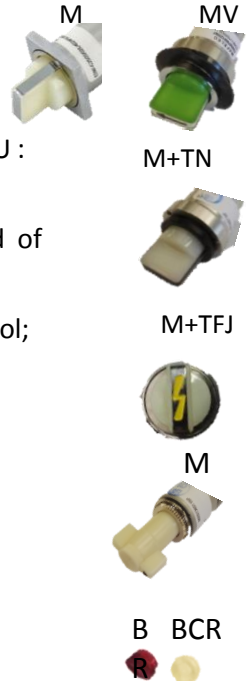
Other kinds of strip available on request (TJ : Yellow ; TFR : Strip with red lightning symbol; TFR : Strip with yellow lightning symbol; TFN : Strip with black lightning symbol...)  
Les tranches hors standard sont associées à des manettes sans flèche ( code 20 )

E handles :**M** | White handle**BR** | Indicate in complement of the handle is the cap color is different that the white cap included in standard

Other colors of cap available on request

If white handle add : BV : green cap; BJ : yellow ; BCR : Cristal; BIV : Ivory

If white handle add : N : black cap ; NR : red ; NV : green ; NJ : yellow ; NCR : Cristal



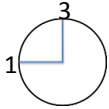
## Accessories

**Z** | Use of contacts in alloy Gold-Silver in replacement of contacts in alloy Silver/Nickel  
(Recommended for low current level applications)**ST** | Plastic cable support for rear cable outlet (included in standard)**STM** | Metallic cable support for rear cable outlet**SR** | Resistance support (useful when you need to reduce the supply voltage of the lamp)**CP** | Plastic translucent contacts cover (IP20)

## Currently used diagrams

## Turn Light

- **Function 102 : 2 fixed positions 90° (1-3) : 1 to 4 Turn stages**



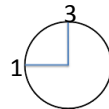
2A1

4A1A3

6A1A3A1

8A1A3A1A3

Position =>	Position 1	Position 3
Contact labels	Fixed position	Fixed position
O11 - R11	X	
O11 - T11		X
O21 - R21	X	
O21 - T21		X
O12 - R12		X
O12 - T12	X	
O22 - R22		X
O22 - T22	X	
O13 - R13	X	
O13 - T13		X
O23 - R23	X	
O23 - T23		X
O14 - R14		X
O14 - T14	X	
O24 - R24		X
O24 - T24	X	

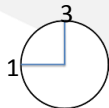


2A1

4A1A1

6A1A1A1

Position =>	Position 1	Position 3
Contact labels	Fixed position	Fixed position
O11 - R11	X	
O11 - T11		X
O21 - R21	X	
O21 - T21		X
O12 - R12	X	
O12 - T12		X
O22 - R22	X	
O22 - T22		X
O13 - R13	X	
O13 - T13		X
O23 - R23	X	
O23 - T23		X



2A3

4A3A3

6A3A3A3

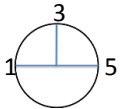
Position =>	Position 1	Position 3
Contact labels	Fixed position	Fixed position
O11 - R11		X
O11 - T11	X	
O21 - R21		X
O21 - T21	X	
O12 - R12		X
O12 - T12	X	
O22 - R22		X
O22 - T22	X	
O13 - R13		X
O13 - T13	X	
O23 - R23		X
O23 - T23	X	



Currently used diagrams

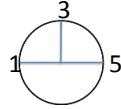
Turn Light

- **Function 104 : 3 fixed positions at 90° (1-3-5) : 1 to 3 Turn stages**



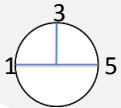
2B7  
4B7A3  
6B7A3B7

Position =>	Position 1	Position 3	Position 5
Contact labels	Fixed positions	Fixed positions	Fixed positions
O11 - R11	X	X	
O11 - T11			X
O21 - R21		X	X
O21 - T21	X		
O12 - R12		X	
O12 - T12	X		X
O22 - R22		X	
O22 - T22	X		X
O13 - R13	X	X	
O13 - T13			X
O23 - R23		X	X
O23 - T23	X		



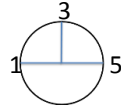
2B3  
4B3B3  
6B3B3B3

Position =>	Position 1	Position 3	Position 5
Contact labels	Fixed positions	Fixed positions	Fixed positions
O11 - R11		X	X
O11 - T11	X		
O21 - R21	X	X	
O21 - T21			X
O12 - R12		X	X
O12 - T12	X		
O22 - R22	X	X	
O22 - T22			X
O13 - R13		X	X
O13 - T13	X		
O23 - R23	X	X	
O23 - T23			X



2A3  
4A3B7  
6A3B7B7

Position =>	Position 1	Position 3	Position 5
Contact labels	Fixed positions	Fixed positions	Fixed positions
O11 - R11		X	
O11 - T11	X		X
O21 - R21		X	
O21 - T21	X		X
O12 - R12	X	X	
O12 - T12			X
O22 - R22		X	X
O22 - T22	X		
O13 - R13	X	X	
O13 - T13			X
O23 - R23		X	X
O23 - T23	X		



2B7  
4B7B7  
6B7B7B7

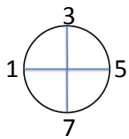
Position =>	Position 1	Position 3	Position 5
Contact labels	Fixed positions	Fixed positions	Fixed positions
O11 - R11	X	X	
O11 - T11			X
O21 - R21		X	X
O21 - T21	X		
O12 - R12	X	X	
O12 - T12			X
O22 - R22		X	X
O22 - T22	X		
O13 - R13	X	X	
O13 - T13			X
O23 - R23		X	X
O23 - T23	X		

# Currently used diagrams

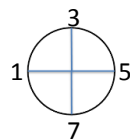
## Turn Light

- **Function 106** : 4 fixed positions at 90° (1-3-5-7) : 1 to 4 Turn stages

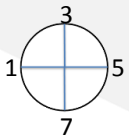
Function 106 :



Position =>	Position 1	Position 3	Position 5	Position 7
Contact labels	Fixed position	Fixed position	Fixed position	Fixed position
O11 - R11	X		X	X
O11 - T11		X		
O21 - R21	X	X	X	
O21 - T21				X
O12 - R12		X	X	X
O12 - T12	X			
O22 - R22	X	X		X
O22 - T22			X	
O13 - R13	X		X	X
O13 - T13		X		
O23 - R23	X	X	X	
O23 - T23				X
O14 - R14		X	X	X
O14 - T14	X			
O24 - R24	X	X		X
O24 - T24			X	



Position =>	Position 1	Position 3	Position 5	Position 7
Contact labels	Fixed position	Fixed position	Fixed position	Fixed position
O11 - R11	X		X	X
O11 - T11		X		
O21 - R21	X	X	X	
O21 - T21				X
O12 - R12		X	X	X
O12 - T12	X			
O22 - R22	X	X		X
O22 - T22			X	
O13 - R13	X	X		X
O13 - T13			X	
O23 - R23		X	X	X
O23 - T23	X			X
O14 - R14	X	X	X	
O14 - T14				X
O24 - R24	X		X	X
O24 - T24		X		



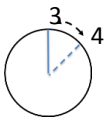
Position =>	Position 1	Position 3	Position 5	Position 7
Contact labels	Fixed position	Fixed position	Fixed position	Fixed position
O11 - R11	X		X	
O11 - T11		X		X
O21 - R21	X		X	
O21 - T21		X		X
O12 - R12	X	X	X	
O12 - T12				X
O22 - R22	X		X	X
O22 - T22		X		
O13 - R13	X	X		X
O13 - T13			X	
O23 - R23		X	X	X
O23 - T23	X			

## Currently used diagrams

## Turn Light

- **Function 607 ou 609 : 1 fixed position (3) + 1 impulse position (4 or 2) : 1 to 4 Turn stages**

Function 607 :



Position =>	Position 3	Position 4
Contact labels	Fixed position	Impulse position
O11 - R11	X	
O11 - T11		X
O21 - R21	X	
O21 - T21		X
O12 - R12	X	
O12 - T12		X
O22 - R22	X	
O22 - T22		X
O13 - R13	X	
O13 - T13		X
O23 - R23	X	
O23 - T23		X
O14 - R14	X	
O14 - T14		X
O24 - R24	X	
O24 - T24		X

Function 609 :

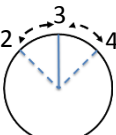


Position =>	Position 3	Position 4
Contact labels	Fixed position	Impulse position
O11 - R11	X	
O11 - T11		X
O21 - R21	X	
O21 - T21		X
O12 - R12	X	
O12 - T12		X
O22 - R22	X	
O22 - T22		X
O13 - R13	X	
O13 - T13		X
O23 - R23	X	
O23 - T23		X
O14 - R14	X	
O14 - T14		X
O24 - R24	X	
O24 - T24		X

## Currently used diagrams

## Turn Light


- **Function 611 : 1 fixed position (3) + 2 impulse positions (2-4) : 1 to 4 Turn stages**



Position =>	Position 2	Position 3	Position 4
Contact labels	Impulse position	Fixed position	Impulse position
O11 - R11	X	X	
O11 - T11			X
O21 - R21		X	X
O21 - T21	X		
O12 - R12	X	X	
O12 - T12			X
O22 - R22		X	X
O22 - T22	X		
O13 - R13	X	X	
O13 - T13			X
O23 - R23		X	X
O23 - T23	X		
O14 - R14	X	X	
O14 - T14			X
O24 - R24		X	X
O24 - T24	X		

2D2  
4D2D2  
6D2D2D2  
8D2D2D2D2

- **Function 614 : 2 fixed positions (3-5) + 2 impulse positions (2-6) : 3 Turn stages**



Position =>	Position 2	Position 3	Position 5	Position 6
Contact labels	Impulse position	Fixed position	Fixed position	Impulse position
O11 - R11	X	X		
O11 - T11			X	X
O21 - R21			X	X
O21 - T21	X	X		
O12 - R12	X	X		
O12 - T12			X	X
O22 - R22			X	X
O22 - T22	X	X		
O13 - R13		X	X	
O13 - T13	X			X
O23 - R23		X	X	
O23 - T23	X			X

6D1D1A4

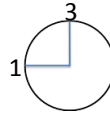
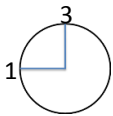
Currently used diagrams

Turn Push Light

- **Functions 402 and 403 : 2 fixed positions at 90° (1-3) : 1 Push stage / 1 to 3 Turn stages**

402 : Selected push contacts

403 : Non-Selected push contacts



	Position =>	Position 1		Position 3	
	Contact labels	Fixed position		Fixed position	
		Initial	Push	Initial	Push
Push stage					
4PA1	O11 - R11	X		X	X
6PA1A3	O11 - T11		X		
8PA1A3A1	O21 - R21	X	X	X	
	O21 - T21				X
	Turn stages				
	O12 - R12	X			
	O12 - T12			X	
	O22 - R22	X			
	O22 - T22			X	
	O13 - R13			X	
	O13 - T13	X			
	O23 - R23			X	
	O23 - T23	X			
	O14 - R14	X			
	O14 - T14			X	
	O24 - R24	X			
	O24 - T24			X	

	Position =>	Position 1		Position 3	
	Contact labels	Fixed position		Fixed position	
		Initial	Push	Initial	Push
Push stage					
4PA1	O11 - R11	X		X	
6PA1A3	O11 - T11		X		X
8PA1A3A1	O21 - R21	X		X	
	O21 - T21		X		X
	Turn stages				
	O12 - R12	X			
	O12 - T12			X	
	O22 - R22	X			
	O22 - T22			X	
	O13 - R13			X	
	O13 - T13	X			
	O23 - R23			X	
	O23 - T23	X			
	O14 - R14	X			
	O14 - T14			X	
	O24 - R24	X			
	O24 - T24			X	

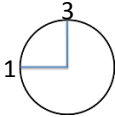
## Currently used diagrams

## Turn Push Light

- 2 fixed positions at 90° (1-3) : 2 Push stages / 1 to 2 Turn stages

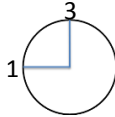
Function 414 : Selected push contacts

Function 419 : Non-Selected push contacts



Position =>	Position 1		Position 3	
	Fixed position		Fixed position	
	Intial	Push	Intial	Push
Push stages				
O11 - R11	X		X	X
O11 - T11		X		
O21 - R21	X	X	X	
O21 - T21				X
O12 - R12	X		X	X
O12 - T12		X		
O22 - R22	X	X	X	
O22 - T22				X
Turn stages				
O13 - R13	X			
O13 - T13			X	
O23 - R23	X			
O23 - T23			X	
O14 - R14			X	
O14 - T14	X			
O24 - R24			X	
O24 - T24	X			

6PPA1  
8PPA1A3



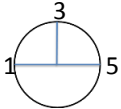
Position =>	Position 1		Position 3	
	Fixed position		Fixed position	
	Intial	Push	Intial	Push
Push stages				
O11 - R11	X		X	
O11 - T11		X		X
O21 - R21	X		X	
O21 - T21		X		X
O12 - R12	X		X	
O12 - T12		X		X
O22 - R22	X		X	
O22 - T22		X		X
Turn stages				
O13 - R13	X			
O13 - T13			X	
O23 - R23	X			
O23 - T23			X	
O14 - R14			X	
O14 - T14	X			
O24 - R24			X	
O24 - T24	X			

6PPA1  
8PPA1A3

Currently used diagrams

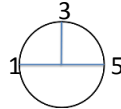
Turn Push Light

- **Function 405 : 3 fixed positions at 90° (1-3-5) : 1 Push stage / 2 Turn stages**



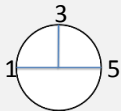
6PB3A1

Position =>	Position 1		Position 3		Position 5	
	Fixed position		Fixed position		Fixed position	
	Initial	Push	Initial	Push	Initial	Push
Push stage						
O11 - R11	X		X		X	
O11 - T11		X		X		X
O21 - R21	X		X		X	
O21 - T21		X		X		X
Turn stages						
O12 - R12			X		X	
O12 - T12	X					
O22 - R22	X		X			
O22 - T22					X	
O13 - R13	X				X	
O13 - T13			X			
O23 - R23	X				X	
O23 - T23			X			



6PB3B3

Position =>	Position 1		Position 3		Position 5	
	Fixed position		Fixed position		Fixed position	
	Initial	Push	Initial	Push	Initial	Push
Push stage						
O11 - R11	X		X		X	
O11 - T11		X		X		X
O21 - R21	X		X		X	
O21 - T21		X		X		X
Turn stages						
O12 - R12			X		X	
O12 - T12	X					
O22 - R22	X		X			
O22 - T22					X	
O13 - R13			X		X	
O13 - T13	X					
O23 - R23	X		X			
O23 - T23						X



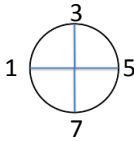
6PD1D7

Position =>	Position 1		Position 3		Position 5	
	Fixed position		Fixed position		Fixed position	
	Initial	Push	Initial	Push	Initial	Push
Push stage						
O11 - R11	X		X		X	
O11 - T11		X		X		X
O21 - R21	X		X		X	
O21 - T21		X		X		X
Turn stages						
O12 - R12	X					
O12 - T12			X		X	
O22 - R22			X		X	
O22 - T22	X					
O13 - R13	X		X			
O13 - T13					X	
O23 - R23					X	
O23 - T23	X		X			

## Currently used diagrams

## Turn Push Light

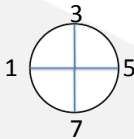
- **Function 407** : 4 fixed positions at 90° (1-3-5-7) : 1 Push stage / 2 to 3 Turn stages



Position =>	Position 1		Position 3		Position 5		Position 7	
	Fixed position		Fixed position		Fixed position		Fixed position	
	Intial	Push	Intial	Push	Intial	Push	Intial	Push
Push stage								
O11 - R11	X		X		X		X	
O11 - T11		X		X		X		X
O21 - R21	X		X		X		X	
O21 - T21		X		X		X		X
Turn stages								
O12 - R12	X				X			
O12 - T12			X				X	
O22 - R22	X				X			
O22 - T22			X				X	
O13 - R13	X		X		X			
O13 - T13							X	
O23 - R23	X				X		X	
O23 - T23			X					
O14 - R14	X		X				X	
O14 - T14					X			
O24 - R24			X		X		X	
O24 - T24	X							

6PA1B5

8PA1B5B7



Position =>	Position 1		Position 3		Position 5		Position 7	
	Fixed position		Fixed position		Fixed position		Fixed position	
	Intial	Push	Intial	Push	Intial	Push	Intial	Push
Push stage								
O11 - R11	X		X		X		X	
O11 - T11		X		X		X		X
O21 - R21	X		X		X		X	
O21 - T21		X		X		X		X
Turn stages								
O12 - R12			X				X	
O12 - T12	X				X			
O22 - R22			X				X	
O22 - T22	X				X			
O13 - R13	X		X		X			
O13 - T13							X	
O23 - R23	X				X		X	
O23 - T23			X					
O14 - R14	X		X				X	
O14 - T14					X			
O24 - R24			X		X		X	
O24 - T24	X							

6PA3B5

8PA3B5B7



## Currently used diagrams

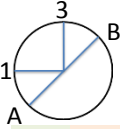
### Turn Push Light

- **Function 432 : 2 fixed positions at 90° (1-3) + 2 fixed position at 45° (A-B) :**

(A and B are 2 neutral positions which allow to extract the handle, change the lamp, and replace the handle without risks to activated the push contacts)

#### 1 Push stage / 1 to 2 Turn stages

432 : Selected push contacts



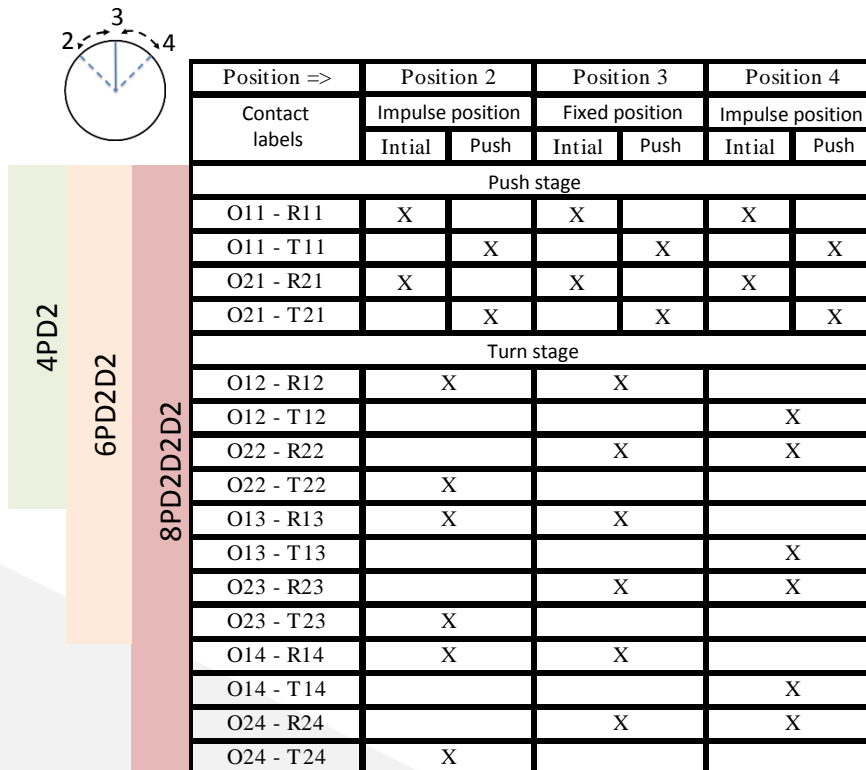
Position =>	Position 1		Position A		Position 3		Position B	
	Fixed position		Fixed position		Fixed position		Fixed position	
	Intial	Push	Intial	Push	Intial	Push	Intial	Push
Push stage								
O11 - R11	X		X		X	X	X	
O11 - T11		X						
O21 - R21	X	X	X		X		X	
O21 - T21						X		
Turn stage								
O12 - R12					X		X	
O12 - T12	X		X					
O22 - R22	X		X					
O22 - T22					X		X	
O13 - R13					X		X	
O13 - T13	X		X					
O23 - R23	X		X					
O23 - T23					X		X	

4PD5  
6PD5D5

## Currently used diagrams

## Turn Push Light

- **Function 445** : 1 fixed position (3) + 2 impulse positions at 45° (2-4) : 1 Push stage / 1 to 3 Turn stages

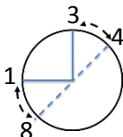


## Currently used diagrams

### Turn Push Turn Light

- **Function 651** : 2 fixed positions (1-3) + 2 impulse positions at 45° (8-4) : 2 to 4 Turn stages

*You must Push to Turn to go from 1 to 8 or 3 to 4.*

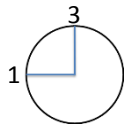


Position =>	Position 1	Position 8	Position 3	Position 4
Contact labels	Fixed position	Impulse position	Fixed position	Impulse position
O11 - R11			X	X
O11 - T11	X	X		
O21 - R21	X	X		
O21 - T21			X	X
O12 - R12	X	X	X	
O12 - T12				X
O22 - R22	X		X	X
O22 - T22		X		
O13 - R13	X	X	X	
O13 - T13				X
O23 - R23	X		X	X
O23 - T23		X		
O14 - R14	X	X	X	
O14 - T14				X
O24 - R24	X		X	X
O24 - T24		X		

## Currently used diagrams

### Push Turn Light












- **Function 650 : 2 fixed positions (1-3) : 2 Turn stages**  
*You must Push to Turn to go from 1 to 3 or 3 to 1.*



4A1A3













Position =>	Position 1	Position 3
Contact labels	Fixed position	Fixed position
O11 - R11	X	
O11 - T11		X
O21 - R21	X	
O21 - T21		X
O12 - R12		X
O12 - T12	X	
O22 - R22		X
O22 - T22	X	

## Functions summary table standard products





With fixed positions						
	Positions at 45°			Positions at 90°		
	Fixed positions	Turn code	Turn Push code	Fixed positions	Turn code	Turn Push code
2 posit.	 <u>1</u> -2	101	401 418 <sup>3</sup>	 <u>1</u> -3	102	402 <sup>1</sup> 403 414 <sup>1 3</sup> 419 <sup>3</sup>
3 posit.	 <u>1</u> -2-3  2-3-4	103	404 420 <sup>3</sup>	 <u>1</u> -3-5	104	405 415 <sup>1 3</sup> 421 <sup>3</sup>
4 posit.	 <u>1</u> à 4	105	406 422 <sup>3</sup>	 <u>1</u> -3-5-7  7-1-3-5	406 107 <sup>2</sup> 106U <sup>4</sup>	407 408 <sup>2</sup> 416 <sup>1</sup> 417 <sup>1 2 3</sup> 423 <sup>3</sup> 424 <sup>3 2</sup>
5 posit.	 <u>1</u> à 5	108	409 425 <sup>3</sup>			
6 posit.	 <u>1</u> à 6	109	410 426 <sup>3</sup>			
7 posit.	 <u>1</u> à 7	110	411 427 <sup>3</sup>			
8 posit.	 <u>1</u> à 8	111 112 <sup>2</sup> 111U <sup>4</sup>	412 413 <sup>2</sup> 428 <sup>3</sup> 429 <sup>3 2</sup>			

- 1 : unit with selected push contacts  
2 : unit with stop, complete rotation not possible  
3 : unit with 2 push stages  
4 : units with one direction of rotation  
1 : The underlined figure of the fixed positions corresponds to that of the handle reference position




*Other realizations possible on request.*



With fixed positions and impulse positions					
Positions at 45°			Positions at 90°		
Fixed positions	Impulse positions	code	Fixed position	Impulse positions	code
 <u>3</u>	4	607	 <u>3</u>	5	606
 <u>3</u>	2	609	 <u>3</u>	1	608
 <u>3</u>	2-4	611	 <u>3</u>	1-5	610
 2- <u>3</u>	4	624	 <u>3</u> -5	6	612
 <u>3</u> -4	2	622	 <u>3</u> -1	8	613
			 <u>3</u> -5	2-6	614
			 <u>1</u> -3-5	6	620




## Functions summary table standard products

Turn-Push					
3 posit.		Fixed positions	Impulse position		code
		<u>3</u>	2-4	Possibility to push on 3	437 438 <sup>3</sup>
		<u>3</u>	2-4	Possibility to push on 2-3-4	445
		<u>1-3-5</u>		Push selected on 1 et 5	436 <sup>1</sup>
		<u>1-3</u>	4	Possibility of push on 3 only	441
				On 1 and 3	442
	<u>1-2-3</u>		Push selected on 1 et 3	443 <sup>1</sup>	

4 posit.		Fixed positions	Impulse position		code
		<u>1 à 7</u>		Push selected on 2 positions stop between 1 and 7	430 <sup>1 2</sup> 431
		<u>1-3-A-B</u>		Special model A and B positions of lamp extraction	432 <sup>1</sup> 433 <sup>1 3</sup> 439 440 <sup>3</sup>
		<u>1-3</u>	4-8	Push selected on 1 and 3	444

Push-Turn					
		Fixed positions	Impulse position		code
2 posit.		<u>1-3</u>		To pass from 1 to 3 and vice-versa push then turn	650
8 posit.		<u>1 à 8</u>		Push selected on 1 and 5	649

Turn-Push-Turn					
		Fixed positions	Impulse position		code
3 posit.		<u>1-3</u>	4		652
4 posit.		<u>1-3</u>	4-8		651
5 posit.		<u>1-2-3</u>	4-8		653

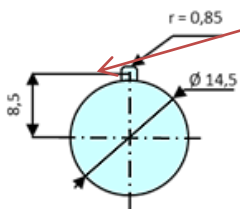
- <sup>1</sup> : unit with selected push contacts  
<sup>2</sup> : unit with stop, complete rotation not possible  
<sup>3</sup> : unit with 2 push stages  
<sup>4</sup> : units with one direction of rotation  
1 : The underlined figure of the fixed positions corresponds to that of the handle reference position

*Other realizations possible on request.*

# Dimensions

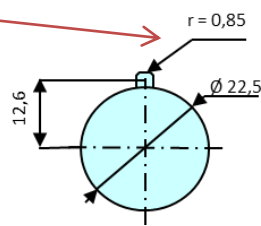
## Drillings

E or E-EDM switches



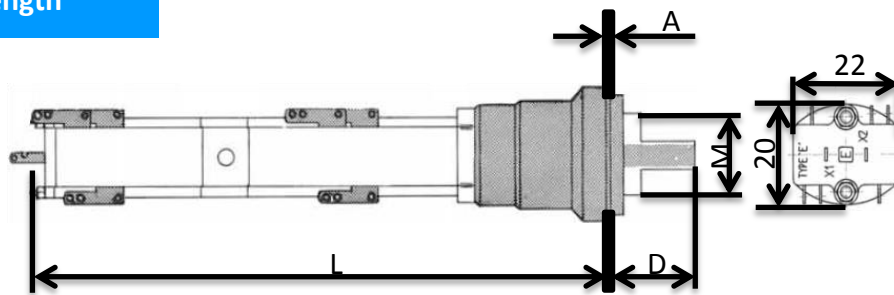
to realize if option ERG

EDM switches



**i** Refer to installation guide for type E switches for installation and maintenance.

## Rear length



Function	Presentation	Positions	L				D	M	A	ST	SR
			1 stage	2 stages	3 stages	4 stages					
Turn	E	Fixed	75	106	137	168	20	∅ 20	2-4	+24	+28
		Impulse	86	117	148	179					
		Fixed + impulse	96	127	158	189					
	E-EDM Ou EDM	Fixed	87	118	149	180		∅ 18	1,5-3		
		Impulse	98	129	160	191					
		Fixed + impulse	108	139	170	201					
Turn-Push	E	Fixed		121	152	183	∅ 20	2-4			
		Impulse		131	162	193					
	E-EDM Ou EDM	Fixed		132	163	194		∅ 18	1,5-3		
		Impulse		142	173	204					
Turn-Push-Turn	E	-		138	169	200	∅ 20	2-4			
	E-EDM Ou EDM	-		149	180	211	∅ 18	1,5-3			

## Electrical, mechanical, environmental characteristics

### Electrical characteristics

Rated thermal current (I<sub>th</sub>)

4A

Dielectric strength

2000V-50Hz-1min

Rated alternate current (I<sub>e</sub>) (AC)

Standard silver contacts	110 V contacts				220 V contacts			
Rated working voltages (V)	<= 60		110 127		<= 60		110 127	
AC-11 (A)	4		3		4		3	
AC-21 (A)	4		4		4		4	
AC-22 (A)	4		4		4		4	
AC-23 (A)	4		4		4		4	
Rated direct current (I <sub>e</sub> ) (DC)								
Standard silver contacts	110 V contacts				220 V contacts			
Rated working voltages (V)	24	48	60	110 127	24	48	60	110 127
DC-11 (A)	2,5	0,8	0,6	0,2	3,2	1,2	0,8	0,2
DC-21 (A)	4	2,5	1,8	0,5	4	4	2,5	0,65
DC-22 (A)	3	1	0,7	0,2	4	1,5	1	0,25
DC-23 (A)	2	0,75	0,5	0,15	3	1	0,75	0,2

Minimum utilization characteristics

Standard silver contacts

5V-50mA

Special Gold/Silver contacts

1V-10mA

Maximum connection (Cu only)

Rigid or flexible cable

By soldering

Fast-On Clips : 2,8 X0,3

2x1 mm<sup>2</sup> max

1 mm<sup>2</sup>



## Electrical, mechanical, environmental characteristics

### Mechanical and environmental characteristics

Mechanical strength

500 000 cycles of semi-intensive operation

Fitting

By central nut on panel thick :  
E : 1,5 to 3mm  
EDM : 2 to 4mm  
The device does not have to support the weight of the cables

Terminals protection level

IP00 (without cover) – IP2X (with cover)