Discrepancy switches

Gewe

low voltage electrical manufacturer

Company

Gave Electro is an international manufacturer of electrical control products and solutions with an extensive professional record since it was founded in 1944. It has developed technical capabilites on the low voltage breaking, control and protection fields acquiring strong reputation on its control equipment solutions.

Innovation

Innovative thinking is our philosophy. We create better more effective products and processes applying new ideas that benefit from our longstanding experience. A dedicated engineering team boosting your competitiveness.

Quality & Service Commitment

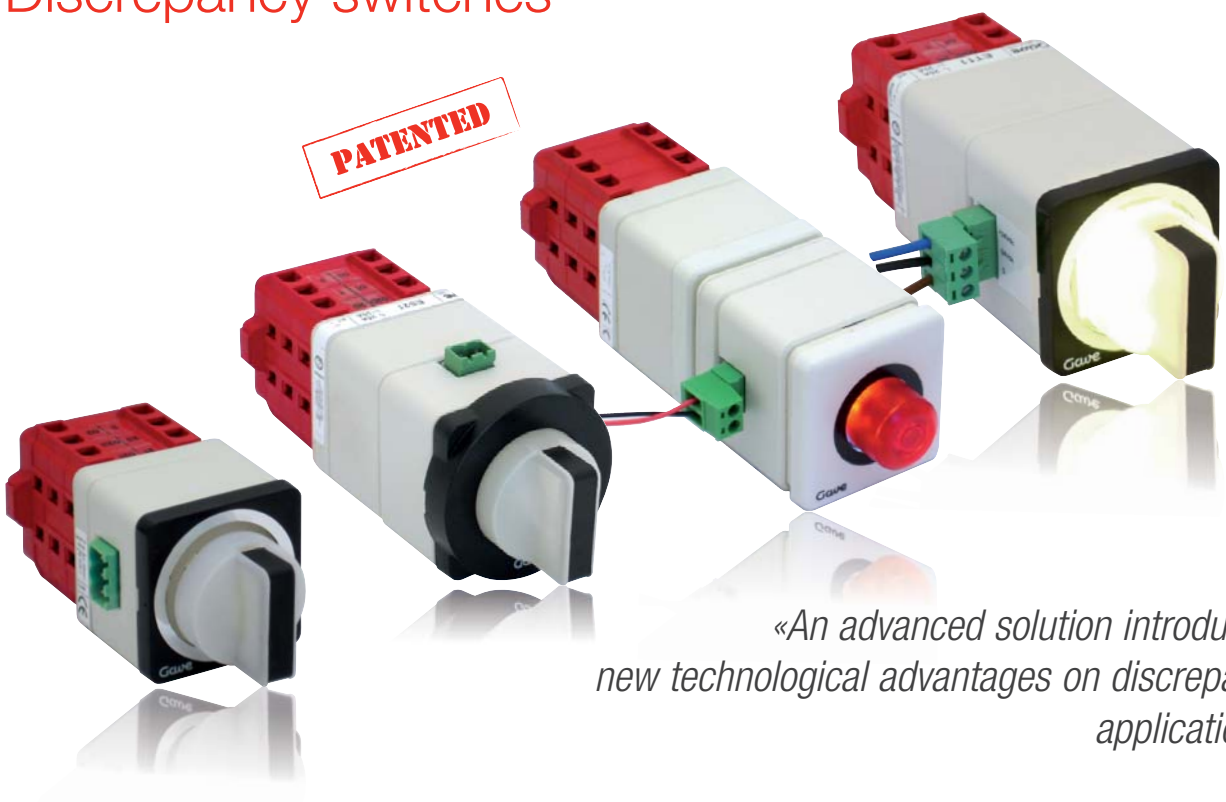
Gave Electro follows a total quality management (TQM) system as an integrative philosophy of management for continuously improving the quality of products and processes. This system functions on the premise that the quality of products and processes is the responsibility of everyone who is involved with the creation or consumption of the products and involves management, workforce, suppliers, and even customers, in order to meet or exceed customer expectations.

Constant rigorous product testing is undertaken during all production process in order to guarantee product reliability and repeatability. Testing capabilities include:

- Electrical and mechanical endurance
- Ingress protection (IP) testing
- EMC reinforced testing
- Optical and thermal parts analysis
- Dielectric testing
- Flammability and ignitability (glow wire test)

We commit to service our customer by providing support in planning, installation, training, trouble shooting, maintenance, upgrading, and disposal of a product.

Discrepancy switches



«An advanced solution introducing new technological advantages on discrepancy applications»

Discrepancy switches are used to control, monitor position of disconnector switches and circuit breakers, and signal any discrepancy on their operation.

They are also used to send short impulses to remote controlled solenoids, meters,..

Gave discrepancy switches use latest developments on Led technology increasing signal reliability and remarkable for being maintenance free.

Specific electronics permit multivoltage connection limiting the number of references required and simplifying panel designs and product logistics.

According to standards

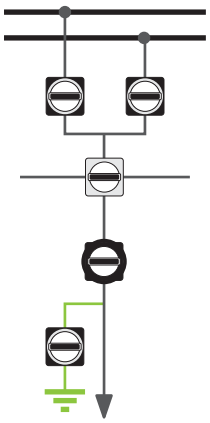
- IEC 60947-3
- EN 60947-3
- IEC 61000

Applications

- Rail transport industry
- Medium voltage energy distribution

Mimic diagram

The association between discrepancy switch and disconnector/circuit breaker is directly identified on the mimic diagram by the front plate shape.



Control discrepancy mimic diagram example

Special diagrams

Control discrepancy switches are mainly used to control and signal discrepancies on circuit breakers and disconnectors. Often it is also requested on applications where the switch will control auxiliary circuits giving signal to external relays, acoustic circuits,..

This product constructional flexibility offers optimal adaption to specific needs of circuit breaker/disconnector circuits and other applications such as starter synchronising, on load controller, contactor control,..



Product overview

Monocolor types

See page 8

Conventional PCM panel designs use white color light to indicate switchgear status on the mimic panels.

MS
Control & signalling

ES
Push & turn with spring return

EV
Turn to push

EP
Pushbutton control

EL
Light pushbutton control

Bicolor types

See page 12

Using two color switches provides quick readout on the PCM panel.

MB
Control & signalling bicolor

EB
Push & turn with spring return bicolor

GB
Turn to push bicolor

Tricolor types

See page 14

Quick mimic readout and immediate fault detection are the key advantages of 3 color switches.

MT
Control & signalling tricolor

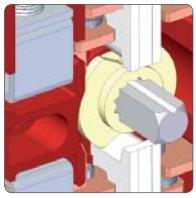
ET
Push & turn with spring return tricolor

GT
Turn to push tricolor

General characteristics

Combining electronic and electromechanic technology on this product has achieved a solution that is distinguished by its well achieved integration and its simple installation and operation.

- High luminosity low consumption multiled technology (100.000 hours life expectancy)
- Encapsulated electronics. Maximum protection and safety.
- Simple mounting. Insert bolts on frontal breaking mechanism
- Easy "push & click" front plate mounting.
- Vibration proof



Precision mechanics

Electrical endurance (3 times above standard requirements)

Clamp-yoke connection

Contact surfaces grooved for optimal grip and conductivity

Electronic robustness

Circuit protected against vibration, shocks and electromagnetic interference

Protection degree IP20

Terminals protected against solid objects up to 12,5mm according to IEC 60529

Insert bolts

Bolts inserted on the breaking mechanism making simple switch mounting, saving time and avoiding loose components

Simple "click" front plate fixing

Front plate designed for easy fixing by simple push-in on the mounting plate

Brightness

Long life and high luminosity Leds

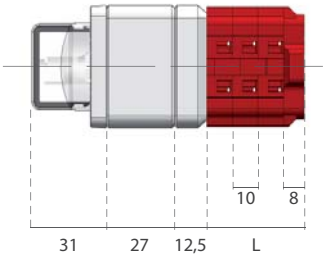
Control panels retrofitting

When maintaining and updating control panels we often face product supply problems to localise and purchase original goods that frequently are yet out of production manufacturing. In Gave we can provide the product cross-reference that you need and benefit from an expert technical service manufacturing product countertypes from your original unit

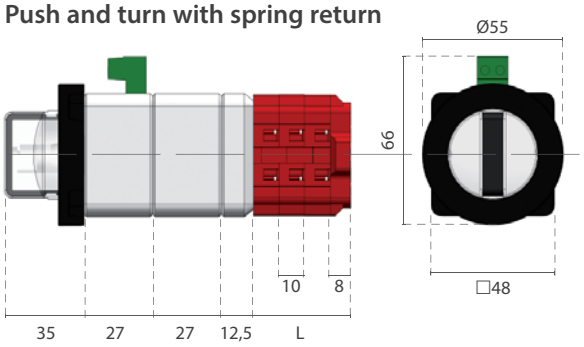
retrofit

Dimensions

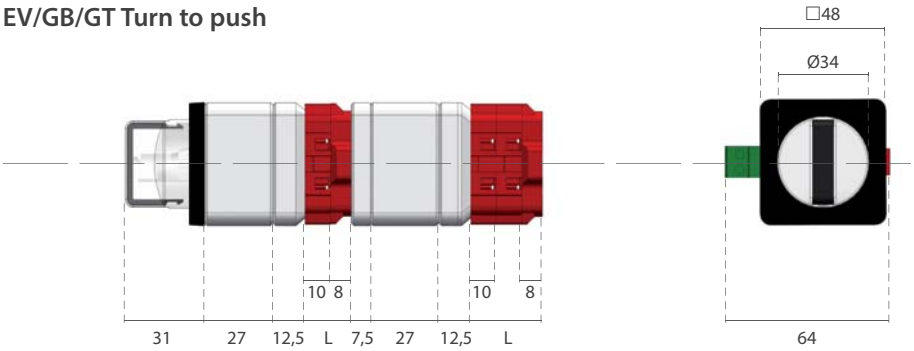
MS
Control and/or signalling



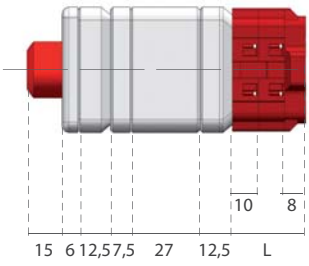
ES
Push and turn with spring return



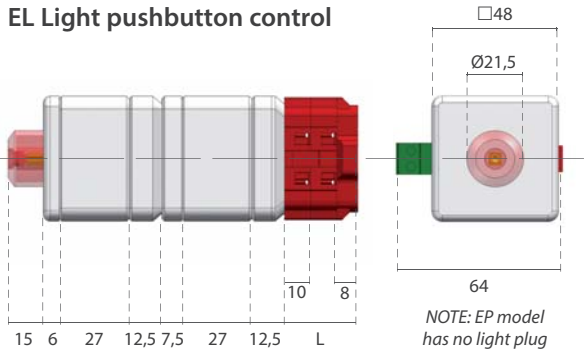
EV/GB/GT Turn to push



EP Pushbutton control

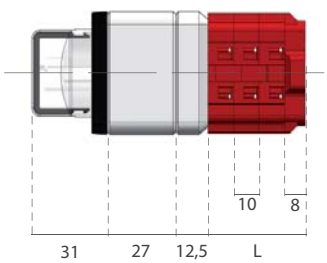


EL Light pushbutton control

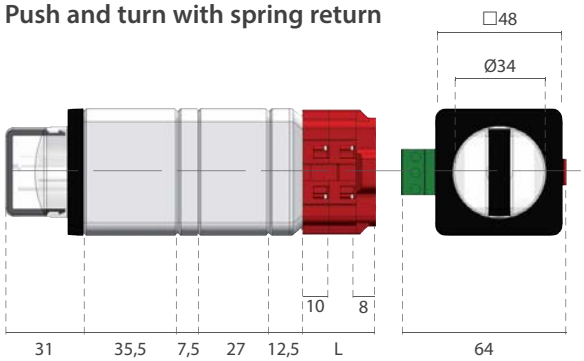


NOTE: EP model has no light plug

MB/MT
Control and/or signalling

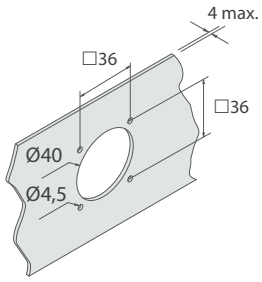


EB/ET
Push and turn with spring return

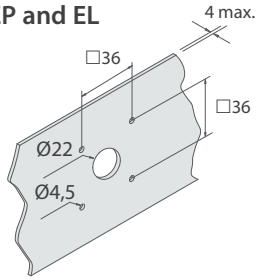


Fixing dimensions

MS, MB, MT, ES, EB, ET , EV, GB and GT



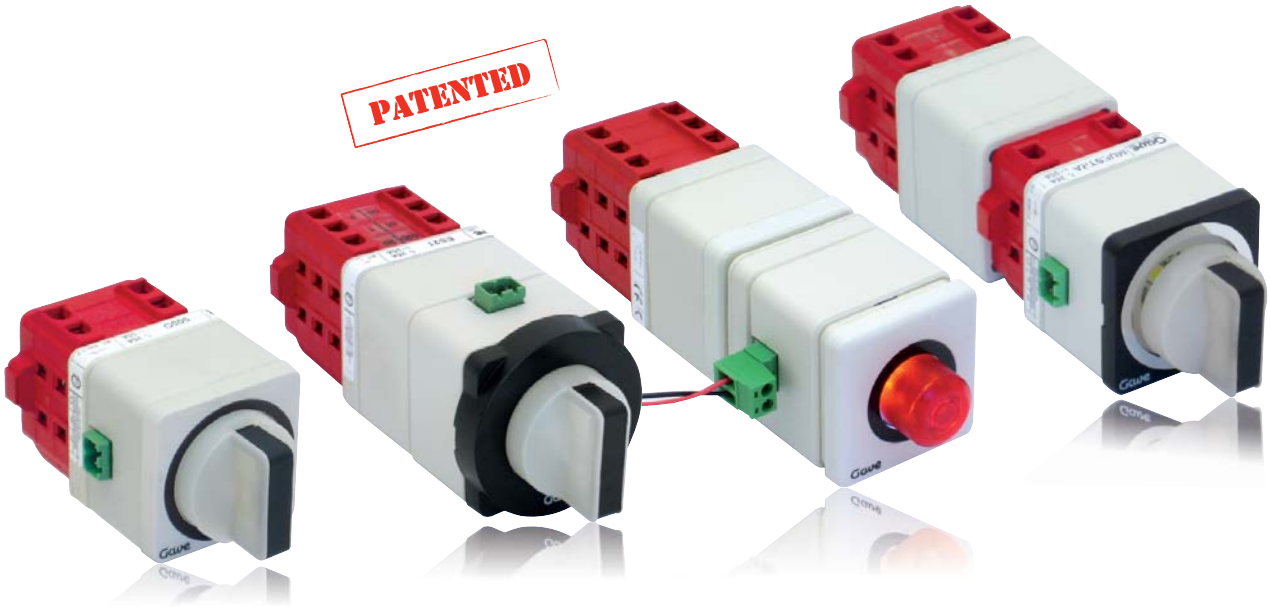
EP and EL



values in mm

cells	1	2	3	4
L	18	28	38	48

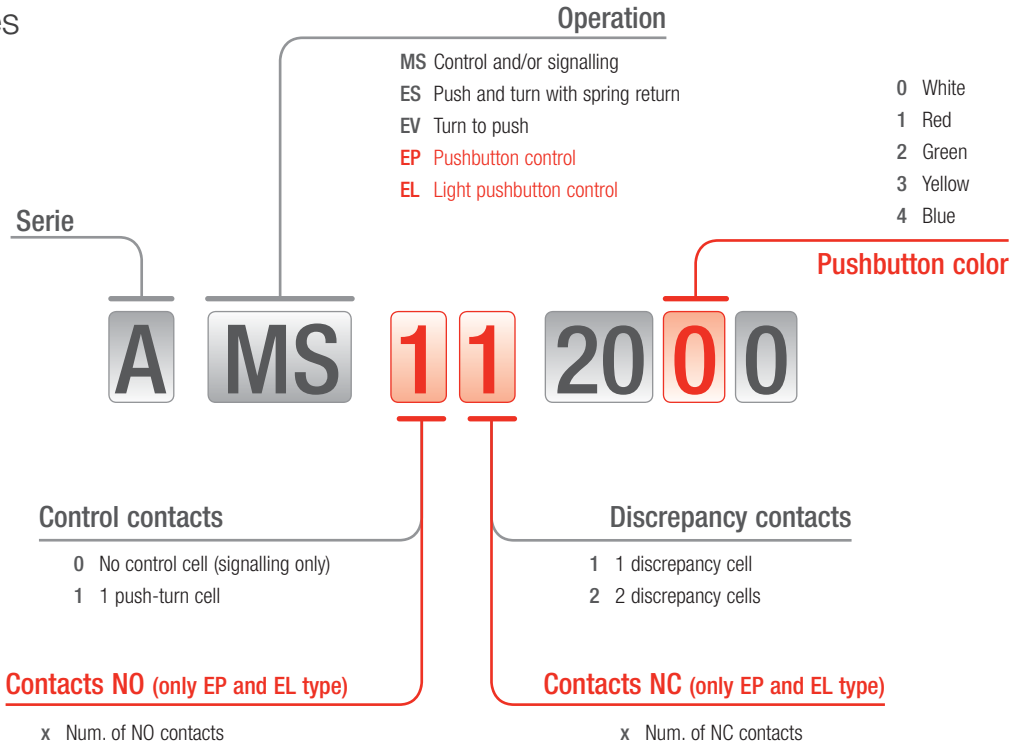
Monocolor discrepancy switches



«Multivoltage technology, luminosity stability and voltage flexibility in your panel designs»

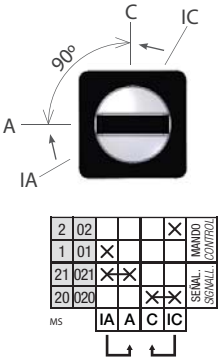
Auxiliary circuits on substation designs present a large variety of voltage supplies, product availability on particular voltages might become an unexpected problem for panel makers. The multivoltage technology developed on monocolor discrepancy switches overcomes the issue while avoiding the faults related to low voltage variation tolerance on conventional products (24-240 VAC / 24-150 VDC). Furthermore wiring connection is polarity free thus preventing potential misconnection damages. This technology also ensures that switch luminosity will remain stable throughout product life time regardless of supply quality.

References



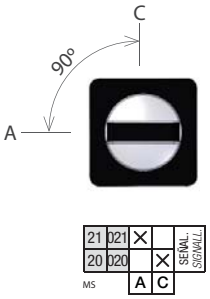
Operation

MS Control and signalling

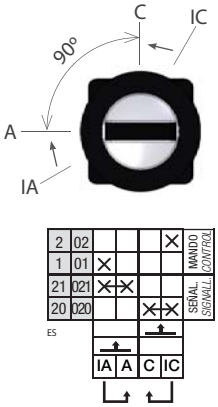


Discrepancy control switches have two fixed positions for pre-selection contacts at 90º and two additional impulse positions with 30º spring return.

MS Only signalling

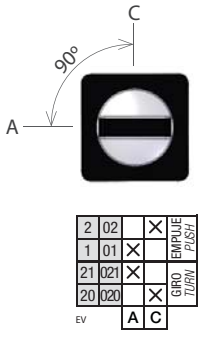


ES Push and turn with spring return



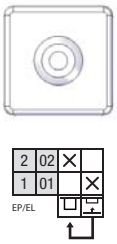
ES push-turn discrepancy control switches have two fixed positions for pre-selection contacts at 90º and two additional push-turn impulse positions with 30º spring return.

EV Turn to push



EV switches have two fixed positions at 90º with turn contacts and discrepancy contacts, and two vertical push positions for maintained contacts

EP Pushbutton control
EL Light pushbutton control



EP and EL pushbuttons have two control positions, a projected position and a push maintained position.

Monocolor standard types*

Control and/or signalling

References	Num. of cells			Voltage	In
	Control	Signal	Total		
AMS112000	1	1	2	24-240VAC / 24-150VDC	25 A
AMS122000	1	2	3	24-240VAC / 24-150VDC	25 A
AMS012000	0	1	1	24-240VAC / 24-150VDC	25 A
AMS022000	0	2	2	24-240VAC / 24-150VDC	25 A

See accessories to add front plate reference

Push and turn with spring return

References	Num. of cells			Voltage	In
	Control	Signal	Total		
AES112000	1	1	2	24-240VAC / 24-150VDC	25 A
AES122000	1	2	3	24-240VAC / 24-150VDC	25 A

See accessories to add front plate reference

Turn to push

References	Num. of cells			Voltage	In
	Control	Signal	Total		
AEV112000	1	1	2	24-240VAC / 24-150VDC	25 A
AEV212000	2	1	3	24-240VAC / 24-150VDC	25 A

See accessories to add front plate reference

Pushbutton control

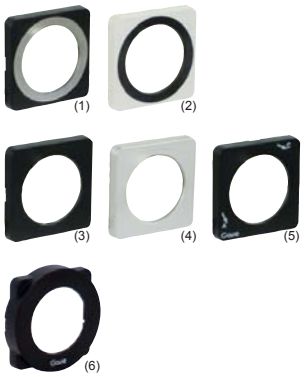
References	Contacts		Cells	Colour	Voltage	In
	N. O.	N. C.				
AEP112010	1	1	1	Red	--	25 A
AEP222010	2	2	2	Red	--	25 A

Light pushbutton control

References	Contacts		Cells	Colour	Voltage	In
	N. O.	N. C.				
AEL112010	1	1	1	Red	24-240VAC / 24-150VDC	25 A
AEL222010	2	2	2	Red	24-240VAC / 24-150VDC	25 A

*220VDC versions also available on demand

Accessories



Front plates

References	Description
AP326904-	Black front plate with silver circle (picture 1)
AP327906-	Grey front plate with black circle (picture 2)
AP325904-	Square black front plate (picture 3)
AP325906-	Square front plate silver (picture 4)
AP3289040	Black front plate with inscription (picture 5)
AP341904-	Square round front plate (picture 6)

Handles

References	Description
AK1020050	White signalling handle size 0
AK1020020	Red signalling handle size 0
AK1030050	Transparent white pushbutton
AK1030020	Transparent red pushbutton
AK1030030	Transparent blue pushbutton
AK1030060	Transparent green pushbutton
AK1030070	Transparent yellow pushbutton
AK1040040	Dark black pushbutton

Bicolor discrepancy switches

Special color combination

Electronic circuits have been designed using RGB LED technology that provides maximum flexibility and offers a large spectrum of colours. Leds use water clear lens and the chip stands 6kV ESD. Using position sensors we can define different colors based on the knob location. Position can be established on 45º steps. Other customised options such as flashing leds are also available.

«Multicolor RGB LEDs open a new field on switch control and signalling applications»

RGB (red, green, blue) Leds are able to mix and therefore offer a complete spectrum of colours. A large scope of control and signalling applications can take advantage of this new product range that will be able to observe color coding as per IEC 60204-1 (Table 2) indications

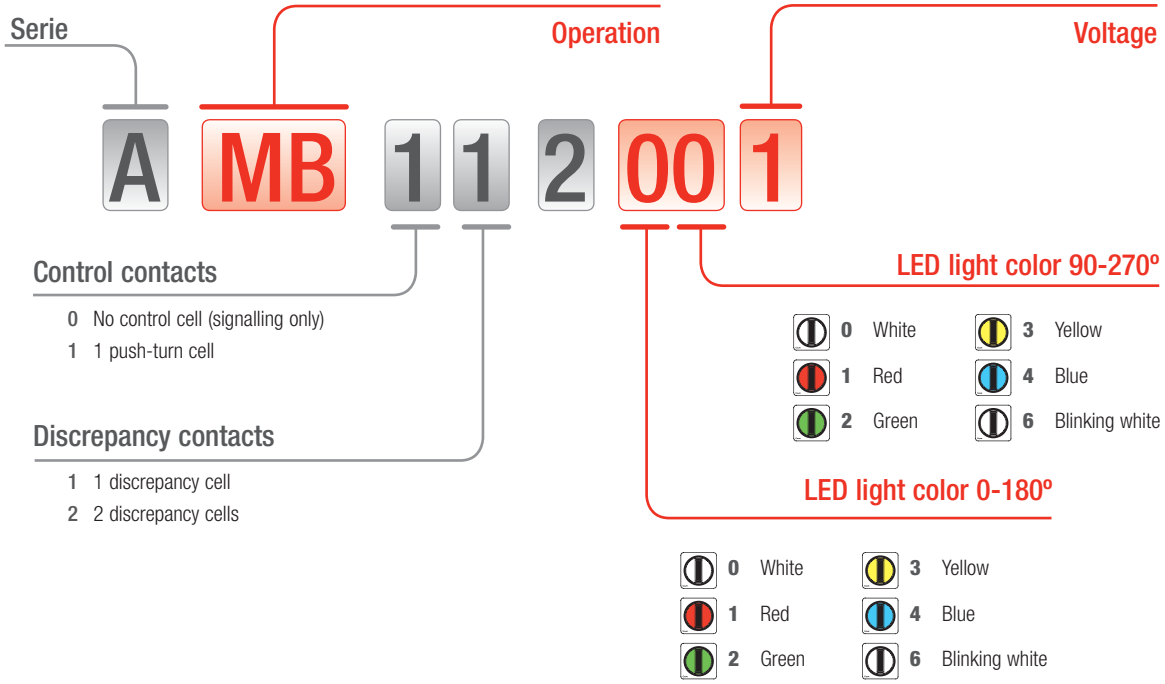
Standard range operates using a position logic. Embedded position sensors on the electronic boards are used to provide information about the knob location and light on Leds with the appropriate color corresponding to that position.

Special production series using signal logic are also available on demand. On these application led color does change based on the opening/closing of switch signalling contacts and alert when there is a discrepancy between the control and signalling contacts.

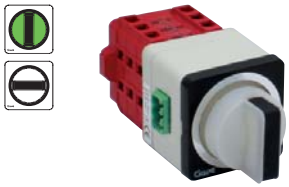
References

MB Control and/or signalling **bicolor**
EB Push and turn with spring return **bicolor**
GB Turn to push **bicolor**

1 110 VDC
2 220 VDC
3 24 VDC
4 48 VDC
5 125 VDC



Bicolor standard types



Bicolor control and/or signalling

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AMB112201	1	1	2	Green/white	110VDC	25 A
AMB122201	1	2	3	Green/white	110VDC	25 A
AMB012201	0	1	1	Green/white	110VDC	25 A
AMB022201	0	2	2	Green/white	110VDC	25 A

See accessories (page 11) to add front plate reference

Bicolor push and turn with spring return

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AEB112211	1	1	2	Green/red	110VDC	25 A
AEB122211	1	2	3	Green/red	110VDC	25 A

See accessories (page 11) to add front plate reference

Turn to push bicolor

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AGB112211	1	1	2	Green/red	110VDC	25 A
AGB122211	1	2	3	Green/red	110VDC	25 A

See accessories (page 11) to add front plate reference

Tricolor discrepancy switches

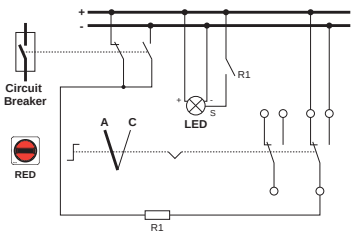
See how it works!

Control and signalling tricolor switches are characterised by using a combined position/signal logic. The PCB incorporates three connection terminals of which two are dedicated to power supply and one is the input signal that will operate in the event of discrepancy.

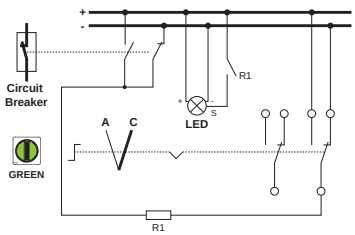
When discrepancy signal is present the switch will pass from the position color to a different distinctive color indicating discrepancy status. Tricolor switches power supply is single voltage and therefore we must indicate it in the ordering reference.

«The integration of three signal colors in a single unit becomes a revolution on new projects design possibilities»

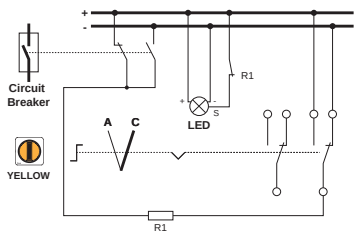
Discrepancy example diagram



Signal OK
Circuit breaker and control/signal contacts are open. The knob color is red.

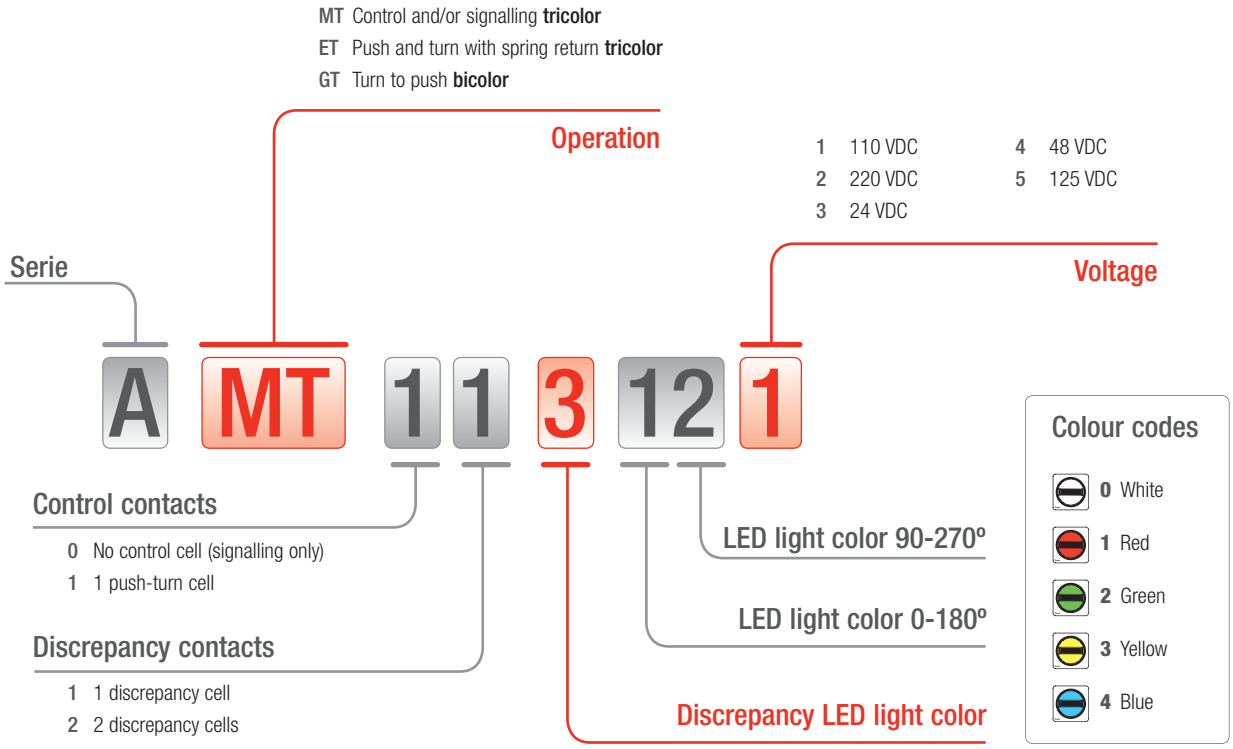


Signal OK
Circuit breaker and control/signal contacts are closed. The knob color is green.



Discrepancy signal
Circuit breaker is open and contact/signal contacts are closed. The knob color is yellow indicating discrepancy.

References



Tricolor standard types

Control and/or signalling tricolor

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AMT113211	1	1	2	Yellow/green/red	110VDC	25 A
AMT123211	1	2	3	Yellow/green/red	110VDC	25 A

See accessories (page 11) to add front plate reference

Push and turn with spring return tricolor

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AET113211	1	1	2	Yellow/green/red	110VDC	25 A
AET123211	1	2	3	Yellow/green/red	110VDC	25 A

See accessories (page 11) to add front plate reference

Turn to push tricolor

References	Num. of cells			Colors	Voltage	In
	Control	Signal	Total			
AGT113211	1	1	2	Yellow/green/red	110VDC	25 A
AGT123211	1	2	3	Yellow/green/red	110VDC	25 A

See accessories (page 11) to add front plate reference

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