

FNR series

Sealed rocker switches



DISTINCTIVE FEATURES

Ideal for front / neutral / reverse selection

Easy to install

Excellent front panel sealing

Backlit logos



ENVIRONMENTAL SPECIFICATIONS

- Operating temperature : -40 °C to +85 °C (-40 °F to +185 °F)
- Panel sealing; IP69K according to DIN 40050-9



ELECTRICAL SPECIFICATIONS

- Maximum voltage rating with resistive load: 24 VDC
- Current rating with resistive load: 0.03 to 1 A
- Initial contact resistance: <100 mohms
- Insulation resistance: >10 Gohms at 500 VDC
- Dielectric strength: 1000 Vrms 50 Hz min.
- Electrical life: 1.000.000 cycles at 100 mA
100.000 cycles at 1 A

LED COMPONENT SPECIFICATIONS

LED color	Forward current	Typ. forward voltage	Max. forward voltage
Blue	20 mA	3.3 V	4 V
Green	20 mA	2.1 V	2.5 V
Red	20 mA	1.9 V	2.5 V
Yellow	20 mA	2 V	2.5 V
White	20 mA	3.3 V	4 V
Red/green	20 mA	Red: 1.9 V / green: 2.1 V	2.5 V

A resistor must be series-connected by the user.

Resistor value = $\frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$

LED forward current

The company reserves the right to change specifications without notice.



FNR series

Sealed rocker switches



GENERAL SPECIFICATIONS

- Total travel: $\pm 15^\circ$.
- Typical operating force at center: $5\text{ N} \pm 1$
- Mechanical life: 1.000.000 cycles
- B10d : 1.000.000

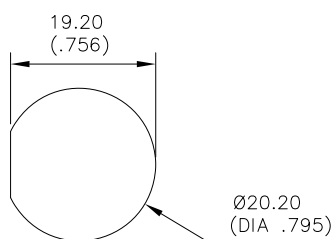


MATERIALS

- Contacts : Gold alloy
 - Case : PBT
 - Actuator : PA6-6
 - Overmoulding: Polyamide
 - Output wires (flying leads terminals): AWG24, section 0.23 mm^2
- APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

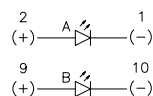
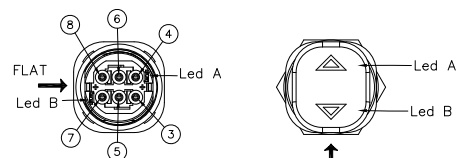


PANEL CUT-OUT

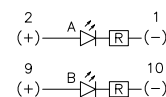


WIRING DIAGRAM

WIRING DIAGRAM



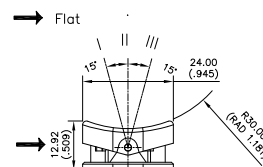
Without resistor



With resistor

Wire colors (F & C output)	
10	Brown
9	Orange
8	White
7	Black
6	Blue
5	Yellow
4	Red
3	Green
2	Purple
1	Grey

POSITION



CONNECTOR FOR C OUTPUT

- Illuminated : Molex 510651000
- Non-illuminated : Molex 510650600

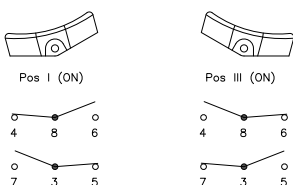


ELECTRICAL FUNCTIONS AND CONNECTIONS

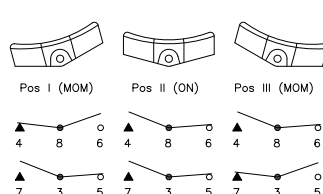
In the tables below, terminal connections as viewed from bottom of switch. Only the contact area is represented.

x = w/o terminal
o = with terminal
▲ = momentary

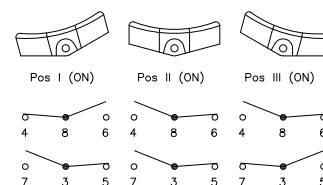
2 POSITIONS



3 POSITIONS MOM-ON-MOM



3 POSITIONS ON-ON-ON



FNR series

Sealed rocker switches



BUILD YOUR PART NUMBER

BASIC PART NUMBER				
FNR				
SERIES	ACTUATOR SHAPE	ELECTRICAL FUNCTIONS	CONTACT MATERIALS	TERMINALS
	C Curved	6 ON - ON M MOM ON MOM F ON ON ON	4 Gold plated Silver	C Flying leads + Connector F Flying leads S Solder lug

OPTIONS				
Side A	Side B			
LEDs		ACTUATOR COLOR	MARKING ORIENTATION	MARKING STYLE/COLOR
X None A LED 6 V red B LED 6 V green C LED 6 V yellow M LED 6 V blue R LED 6 V white D LED 12 V red E LED 12 V green etc.	F LED 12 V yellow N LED 12 V blue S LED 12 V white J LED 24 V red K LED 24 V green L LED 24 V yellow P LED 24 V blue T LED 24 V white etc.	2 Black	X No marking N North S South E East W West	X No marking 1 White hot stamping 2 Laser
		SYMBOLS		
		<p>See end of the series.</p>		



ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

Notice: please note that not all combinations of above numbers are available. Refer to the following pages for further information.

Mounting accessories: Standard hardware supplied : 1 hex nut and 1 O-Ring

FNR series

Sealed rocker switches

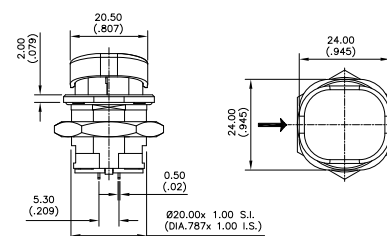
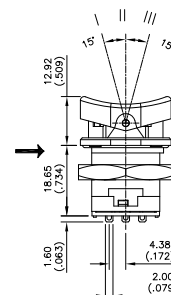
SOLDER LUG TERMINALS



CURVED ACTUATOR

FNRC64S	ON	ON	
FNRCM4S	MOM	ON	MOM
FNRCF4S	ON	ON	ON

→ Flat



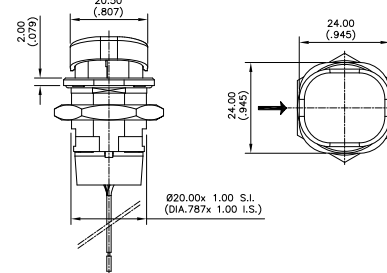
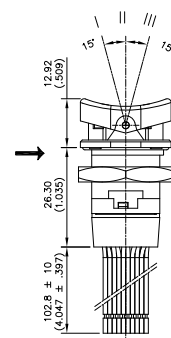
FLYING LEADS TERMINALS



CURVED ACTUATOR

FNRC64F	ON	ON	
FNRCM4F	MOM	ON	MOM
FNRCF4F	ON	ON	ON

→ Flat



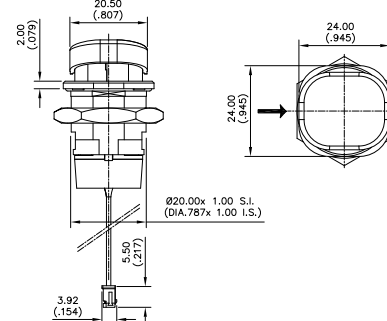
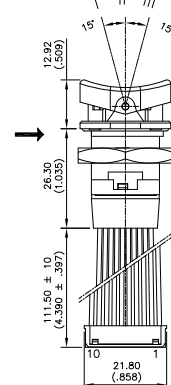
FLYING LEADS + CONNECTOR TERMINALS



CURVED ACTUATOR

FNRC64C	ON	ON	
FNRCM4C	MOM	ON	MOM
FNRCF4C	ON	ON	ON

→ Flat



FNR series

Sealed rocker switches

LEDS

BASIC P/N

Side A

Side B

Complete each enlarged box with one of the codes listed below.

X Without LED

	Red	Green	Yellow	Blue	White	Red/green
No resistor	U	V	W	Y	Z	-
12 VDC	D	E	F	N	S	2
24 VDC	J	K	L	P	T	3

12 VDC is calibrated for 15 VDC max
24 VDC is calibrated for 30 VDC max

ACTUATOR COLOR

BASIC P/N

2 Black

MARKING ORIENTATION

BASIC P/N

X No marking
N North
S South
E East
W West

MARKING STYLE /COLOR

BASIC P/N

X No marking
1 White hot stamping
2 Laser

SYMBOLS

BASIC P/N

Area A

Area M

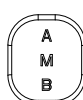
Area B

XXX No marking

Available symbols : Complete each enlarged box with the one of the codes listed below

X09 Up motion
X10 Down motion
XPL D
XWR F
X53 N
XPM R

MARKING AREA



SYMBOL						
CODE	X09	X10	XPL	XWR	X53	XPM