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2010年11月9日开始发售

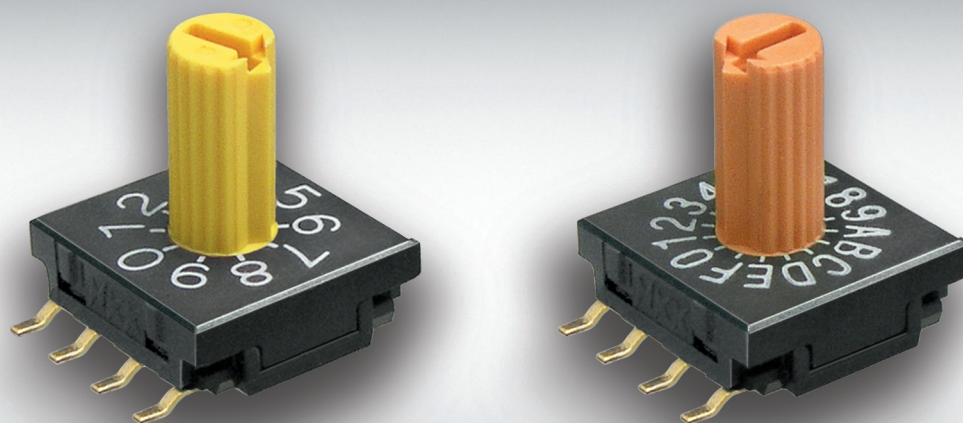
编号 179

(CONTACT No. 179)

DIP旋转开关

FR02 10mm 超小巧 SMT

新转动轴操作部产品



系列FRO2 10mm超小巧SMT/DIP旋转开关

通用规格

电气容量 (电阻性负载)

开关额定值: 100mA 在 5V DC
非开关额定值: 100mA 在 50V DC

其他额定参数

触点电阻: 电路最大100毫欧; 触点最大30毫欧
绝缘电阻: 1,000兆欧以上在250V DC
绝缘强度: 最低250V AC至少1分钟
机械寿命: 10,000次制动操作以上
电气寿命: 10,000次制动操作以上

注: 制动操作是一次操作部位置操作或步进。
一次循环是一次360° 旋转。10,000次制动操作等于
十六进制设备的625圈或十进制设备的1,000圈。

标称操作扭矩: 0.008Nm用于十进制设备; 0.01Nm用于十六进制设备
接触时间点: 非短路

材质和涂覆

操作部: 螺丝刀和塑料转动轴 - 玻璃纤维增强聚酰胺 (UL94V-0)
外壳和基座: 玻璃纤维增强聚酰胺 (UL94V-0)
片簧: 不锈钢
活动触点: 铜合金镀金
固定触点: 磷青铜镀金
端子: 磷青铜镀金

环境数据

工作温度范围: -25°C到+85°C (-13°F到+185°F)
湿度: 240小时内40°C (104°F)时, 湿度90~95%
振动: 用1.5mm峰-峰振幅遍历10~55Hz频率范围、并在5分钟内返回; 3个直角方向2小时
冲击: 50G (490m/s²) 加速度 (在6个直角方向上测试, 每个方向上5次冲击)

处理

焊接: 请参见最后一页
清洗: 请参见最后一页

标准和认证

易燃性标准: 符合UL94V-0额定参数的操作部, 外壳和基座
FRO2系列旋转开关未经过UL认证或CSA认证的测试。
这些开关为在低电压, 低电流电路下使用而设计。
当按原意图使用时, 结果不会产生危险的能量。

主要特点

.150" (3.8mm)的细长体形达到行业最低，因而印刷电路板可以紧紧地堆放在一起。

高可见度图例、可选带箭头位置显示的螺丝刀或转动轴操作部提供简单的编号设置。

制动机构为准确的开关设置提供快捷的，可靠的动作。

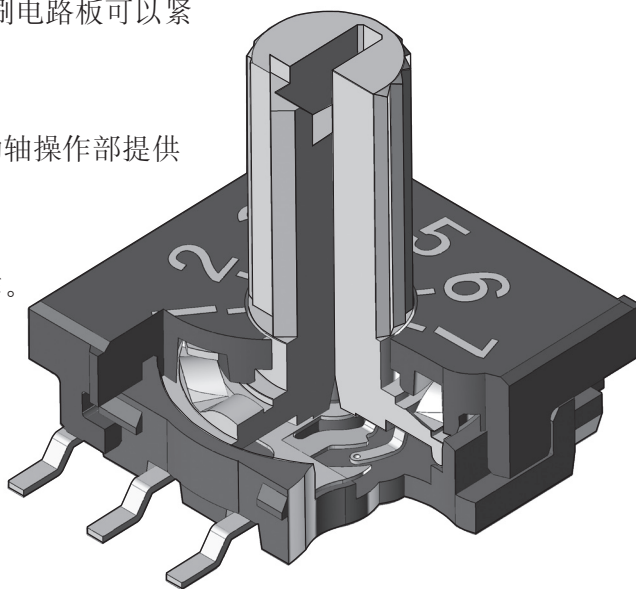
由于使用了隔热树脂因而可采用红外线回流焊接。

鸥翼形端子确保焊接时结构稳定以及简化焊缝检查。

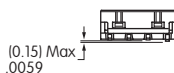
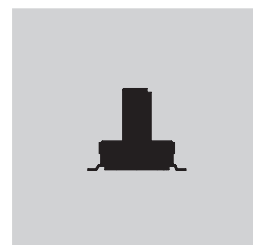
凸轮触发的活动触点和金触点确保接触可靠、连续。

磁带盘包装符合EIA-481-2标准。

共面性：所有经考虑的表面必须放置在最大间距为.0059" (0.15mm)的两个平行平面之间。



实际尺寸



真值表（电路和位置）

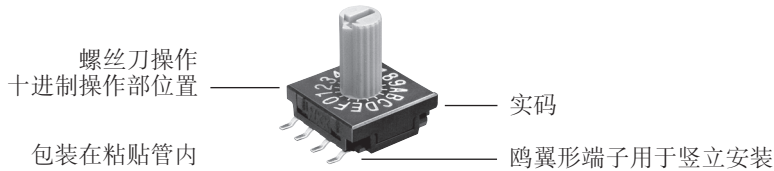
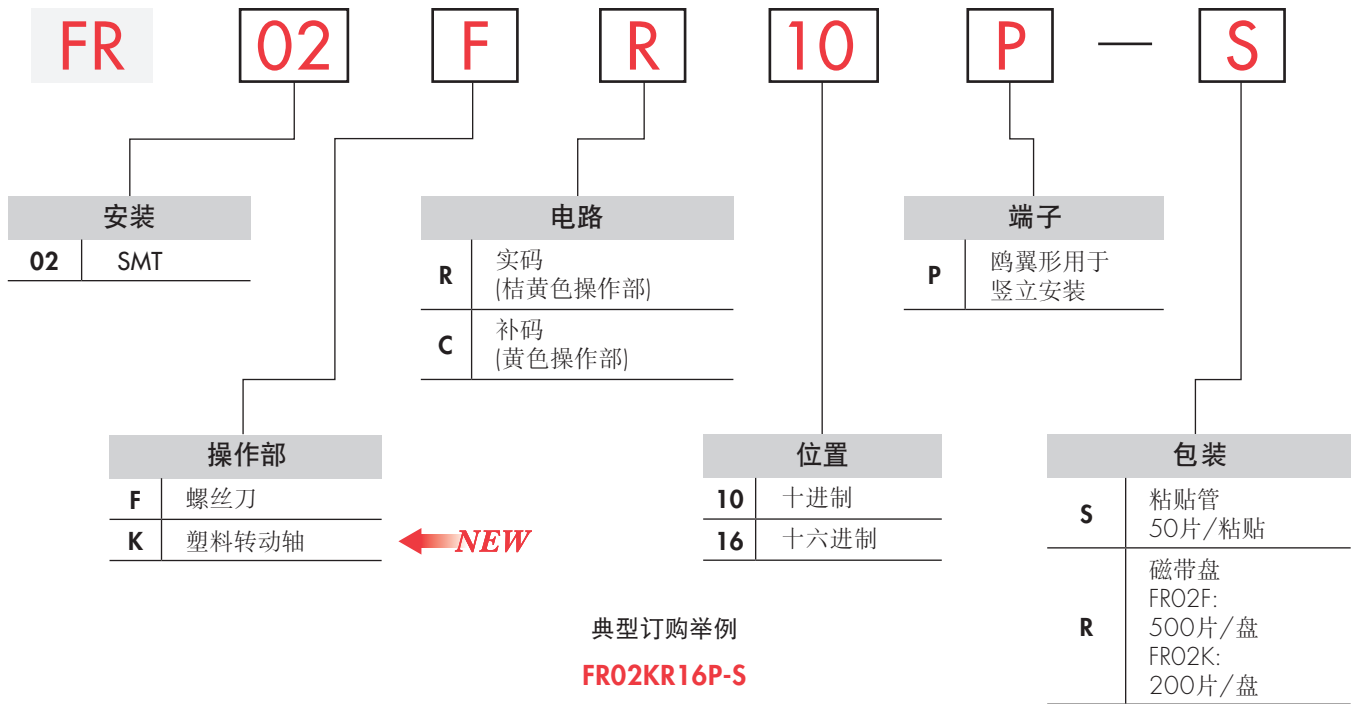
端子编号 (输出)		操作部位置		10 十进制										16 十六进制															
		● = ON		0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
R 实码 型号: FRO2FR FRO2KR	1		●		●		●		●		●		●		●		●		●		●		●		●		●		●
	2			●	●					●	●					●	●					●	●					●	●
	4					●	●	●	●							●	●	●	●						●	●	●	●	
	8										●	●								●	●	●	●					●	●
C 补码 型号: FRO2FC FRO2KC	1	●		●		●		●		●		●		●		●		●		●		●		●		●		●	
	2	●	●			●	●			●	●	●	●			●	●			●	●			●	●				
	4	●	●	●	●					●	●	●	●							●	●	●	●						
	8	●	●	●	●	●	●	●	●							●	●	●	●										

端子编号实际印制在开关上。

系列FRO2

10-62008 911北京0755-83656701深圳0510-81157903 江苏省小巧SMT DIP旋转开关

典型开关订购举例



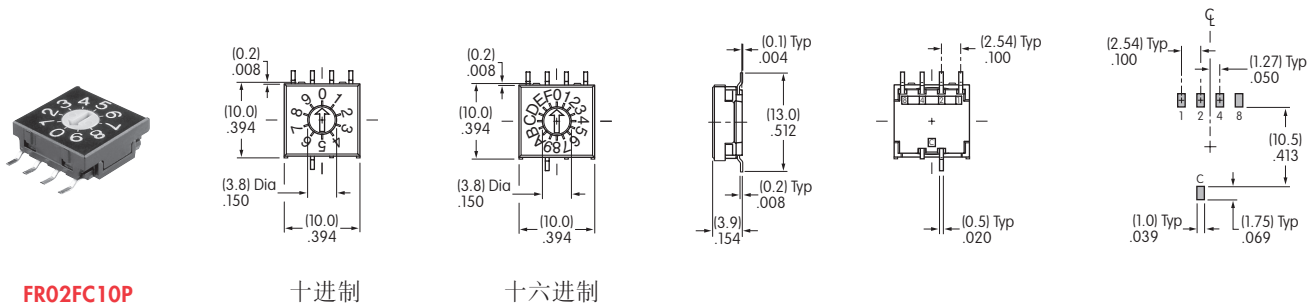
ACTUATION



操作部顺时针和逆时针方向都可以充分旋转。
操作部颜色：实码的设备为桔黄色；补码设备为黄色。

典型开关尺寸

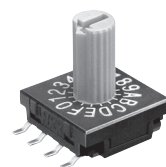
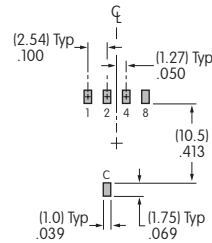
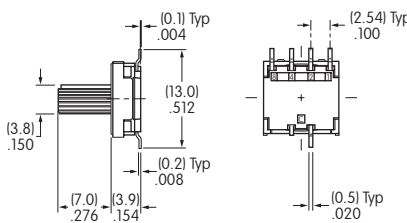
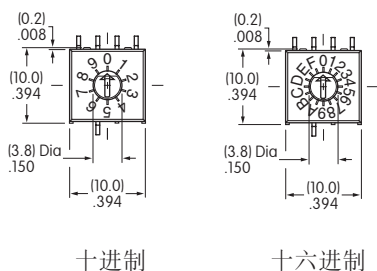
P 竖立·螺丝刀



典型开关尺寸

竖立 · 塑料转动轴

P



FR02KC16P

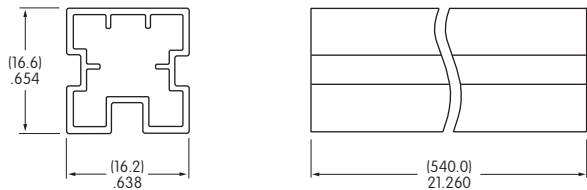
包装

S

粘贴管

FR02F & FR02K

每个粘贴管包含50个开关。
开关订购时，必须以50片为单位递增。



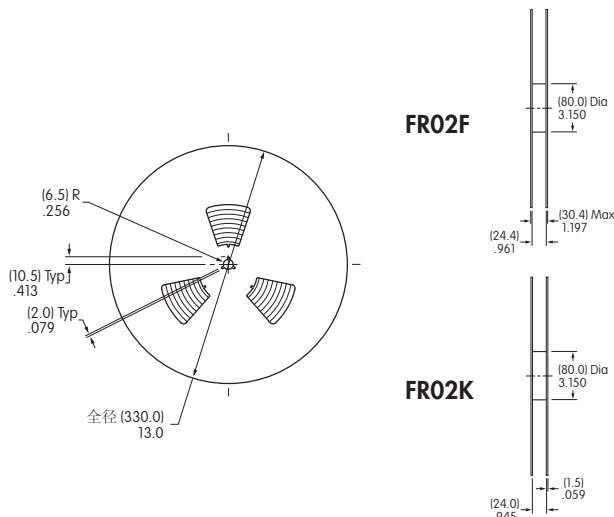
R

磁带盘

FR02F

开关订购时，必须以500片为单位递增。
该封装符合EIA-481-2标准。

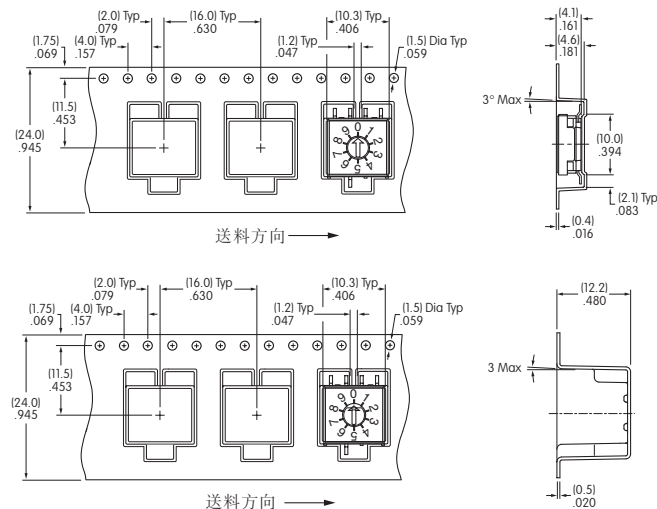
每个磁带盘可放置550袋共计500个开关。
最小导杆长度：15.748" (400mm)
最小尾部长度：6.299" (160mm)



FR02K

开关订购时，必须以200片为单位递增。
该封装符合EIA-481-2标准。

每个磁带盘可放置250袋共计200个开关。
最小导杆长度：15.748" (400mm)
最小尾部长度：6.299" (160mm)



系列FR02

010-68008 911北京0755-83656701深圳0510-81157933 江苏省 无锡 现货

10mm超小巧SMT DIP旋转开关

处理

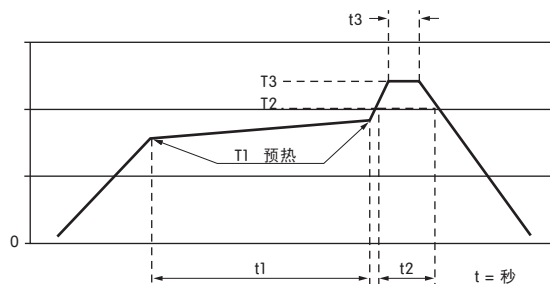
FR02F & FR02K

焊接:

手工焊接: 焊铁端温度390°C; 端子处持续4秒; 循环2次建议用回流焊接。

请参考下面图解和表格。

注意: 在回流焊接处理时, 请将开关设置在如下位置: FR02FR10P, FR02FR16P, FR02KR10P, FR02KR16P: 0 位置; FR02FC10P, FR02KC10P: 7 位置; FR02FC16P, FR02KC16P: F 位置



回流焊接概略图	符号	概略图A高温
预热温度	T1	180°C ~ 200°C
预热时间	t1	120 秒
加热温度	T2	230°C
加热时间	t2	60 秒
最高温度 (表面)	T3	250°C
高峰时间	t3	未标明
印刷电路板厚度		1.6mm
循环		2
注释		印刷电路板不带导线

注意: 上述回流焊接概略图说明的是印刷电路板的表面温度。由于开关高度以及印刷电路板材料和厚度的不同, 印刷电路板的表面温度和开关表面温度会发生变化, 请确保开关表面温度不会超过250°C。如果您的工况比以上说明中的条件更加苛刻, 请与厂家联系。

清洗:

这些装置未经密封处理。用酒精溶剂就地手工清洗印刷电路板表面上残留的焊剂。

操作:

安装时, 请勿对端子区域施加机械应力。

FR系列产品

FR01 插入式				FR02 SMT	
螺丝刀	塑料转动轴	刻度盘	金属转动轴	螺丝刀	塑料转动轴
					 New Option

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Coded switch 10位编码开关 16位拨码开关, 16位旋转编码开关 DIP开关
NKK日本Nikkai正码档位开关NKK档位开关JAPAN进口档位开关 PDF选型资料
NKK开关说明书 NKK开关Nikkai现货stock, NKK开关推荐型号:

360度旋转编码开关 数字编码开关

NKK旋转开关 NKK波段开关 NKK选型资料PDF 贴片开关 SMT开关

DRAR10P,DR-AR10,DR-AR10PN,DR-AC10,

DRAR16P,DR-AR16,DR-AR16PN,DR-AC16,

DRFC16P,DR-FC16,DR-FC16P,DR-FC10,

DRFR16H,DR-FR16,DR-FR16H,

DRFR16P,DR-FR10,DR-FR16P,

FR02AC10HB,FR02AC10HB-RO;FR02-AC10HB,

FR02AR10HB,FR02AR10HB-RO;FR02-AC10,FR02-AR10,

FR02AR10HB-S,FR02AR10HB-S-RO;FR02-AR10HB-ST,

FR02AR16PN,FR02AR16PN-RO;FR02-AR16PN,FR02-AR16,FR02-AC16,

FR02FC16H,FR02FC16H-RO;FR02-FC16H,

FR02FC16P,FR02FC16P-RO;FR02-FC16,FR02-FC10,

FR02FC16P-S,FR02FC16P-S-RO;FR02-FC16P-ST,

FR02FR10P,FR02FR10P-RO;FR02-FR10,

FR02FR10P-S,FR02FR10P-S-RO;FR02-FR10P-ST,

FR02FR16H,FR02FR16H-RO;FR02-FR16,

FR02FR16H-S,FR02FR16H-S-RO;FR02-FR16H-S,

FR02FR16P,FR02FR16P-RO;

FR02FR16P-S,FR02FR16P-S-RO;FR02-FR16P-S,

FR02KR10H,FR02KR10H-RO;FR02-KR10,FR02-KR16,

FR02KR10H-S,FR02KR10H-S-RO;FR02-KR10H-ST,

FR02KR10P,FR02KR10P-RO;

FR02KR10P-S,FR02KR10P-S-RO;FR02-KR10P-ST,

FR02KR16P,FR02KR16P-RO; FR02SC16P;

FR02KR16P-S,FR02KR16P-S-RO;FR02-KR16P-ST,

FR02FC10H-S; FR02FC10P-S; FR02FC16H-S; FR02FC16P-S;

FR02FR10H-S; FR02FR10P-S; FR02FR16H-S; FR02FR16P-S;

FR02KC10H-S; FR02KC10P-S; FR02KC16H-S; FR02KC16P-S;

FR02KR10H-S; FR02KR10P-S; FR02KR16H-S; FR02KR16P-S;

FR02AC10PB; FR02AC10PB-S; FR02AC10PB-W;

FR02AC10PB-W-S; FR02AC16HB-S; FR02AC16PB-S;

FR02AR10HB; FR02AR10HB-S;

FR02AR10PB; FR02AR10PB-S; FR02AR10PB-W-S;

FR02AR16HB-06XL; FR02AR16HB-06XL-S;

FR02AR16HB-06XL-W-S; FR02AR16HB;

FR02AR16HB-S; FR02AR16PB; FR02AR16PB-S;

FR02AR16PB-W-S; FR02FC10H-06XL; FR02FC10H-06XL-S;

FR02FC10P-W-S; FR02FC16H-06XL; FR02FC16H-06XL-S;

FR02FC16P-W; FR02FC16P-W-S; FR02FR10H-06XL;

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FR02FR10H-06XL-S; FR02FR10P-W-S; FR02FR16H-06XL;
FR02FR16H-06XL-S; FR02FR16P-W-S; FR02KC10H-06XL;

FR02KC10H-06XL-S; FR02KC10P-W-S; FR02KC16H-06XL;
FR02KC16H-06XL-S; FR02KC16P-W-S; FR02KR10H-06XL;
FR02KR10H-06XL-S; FR02KR10P-W-S; FR02KR16H-06XL;
FR02KR16H-06XL-S; FR02KR16H; FR02KR16P-W-S;
FR02SC10P-S; FR02SC10P-W-S; FR02SC16P;
FR02SC16P-S; FR02SR10P; FR02SR10P-S;
FR02SR10P-W-S;

FR02AC10HB-S	FR02-AC10HB-ST	FR02-AC10
FR02AR10HB-S	FR02-AR10HB-ST	FR02-AR10
FR02AR16PN	FR02-AR16PN	FR02-AR16
FR02-FC10H	FR02-FC10H	FR02-FC10
FR02FC16H	FR02-FC16H	FR02-FC16
FR02FC16P-S	FR02-FC16P-ST	FR02-FC16P
FR02FR10P-S	FR02-FR10P-ST	FR02-FR10
FR02FR16H-S	FR02-FR16H-S	FR02-FR16
FR02FR16P-S	FR02-FR16P-S	FR02-FR16P
FR02KR10H-S	FR02-KR10H-ST	FR02-KR10
FR02KR10P-S	FR02-KR10P-ST	FR02-KR10P
FR02KR16P-S	FR02-KR16P-ST	FR02-KR16

FR02AC10HB,FR02-AC10HB,FR02AC10H,FR02-AC10HN,
FR02AC10PB,FR02-AC10PB,FR02AC10P,FR02-AC10PN,
FR02AC16HB,FR02-AC16HB,FR02AC16H,FR02-AC16HN,
FR02AC16PB,FR02-AC16PB,FR02AC16P,FR02-AC16PN,
FR02AR10HB,FR02-AR10HB,FR02AG10HB,FR02-AR10HB-M7B,
FR02AR10H,FR02-AR10HN,FR02AR10PB,FR02-AR10PB,
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FR02AR16H,FR02-AR16HN,FR02AR16PB,FR02-AR16PB,
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FR02FR16H,FR02-FR16H,FR02FC16H,FR02-FC16H,
FR02KR10P,FR02-KR10P,FR02KC10P,FR02-KC10P,
FR02KR16P,FR02-KR16P,FR02KC16P,FR02-KC16P,
FR02KR10H,FR02-KR10H,FR02KC10H,FR02-KC10H,
FR02KR16H,FR02-KR16H,FR02KC16H,FR02-KC16H,

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FR02AC10HB-R, FR02AC10HB-S, FR02-AC10HB,FR02AC10H,FR02-AC10HN,
FR02AC10PB,FR02-AC10PB,FR02AC10P,FR02-AC10PN,
FR02AC16HB,FR02-AC16HB,FR02AC16H,FR02-AC16HN,
FR02AC16PB,FR02-AC16PB,FR02AC16P,FR02-AC16PN,
FR02AR10HB,FR02-AR10HB,FR02AG10HB,FR02-AR10HB-M7B,
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FR02AR16P,FR02-AR16PN,FR02AG16P,FR02-AR16PN-M7B,
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FR02FR16P■FR02-FR16P,FR02FC16P,FR02-FC16P,
FR02FR10H,FR02-FR10H,FR02FC10H,FR02-FC10H,
FR02FR16H,FR02-FR16H,FR02FC16H,FR02-FC16H,
FR02KR10P,FR02-KR10P,FR02KC10P,FR02-KC10P,
FR02KR16P,FR02-KR16P,FR02KC16P,FR02-KC16P,
FR02KR10H,FR02-KR10H,FR02KC10H,FR02-KC10H,
FR02KR16H,FR02-KR16H,FR02KC16H,FR02-KC16H,

进口Nikkai日本DRAR16P日开BCD编码器DR-AR16P旋转编码开关

FR01AR16PN■日本开闭器DRAR16P日开开关coded rotary switch

BCD编码开关DR（无RoHS认证,2006年停产obsolete，由FR01系列替代）

DRAC10HB,DR-AC10HB,DRAC10H,DR-AC10HN,
DRAC10PB,DR-AC10PB,DRAC10P,DR-AC10PN,
DRAC16HB,DR-AC16HB,DRAC16H,DR-AC16HN,
DRAC16PB,DR-AC16PB,DRAC16P,DR-AC16PN,
DRAR10HB,DR-AR10HB,DRAG10HB,DR-AR10HB-M7B,
DRAR10H,DR-AR10HN,DRAR10PB,DR-AR10PB,
DRAR10P,DR-AR10PN,DRAR16HB,DR-AR16HB,
DRAR16H,DR-AR16HN,DRAR16PB,DR-AR16PB,
DRAR16P,DR-AR16PN,DRAG16P,DR-AR16PN-M7B,
DRF2C10H,DR-F2C10H,DRF2C10P,DR-F2C10P,
DRF2C16H,DR-F2C16H,DRF2C16P,DR-F2C16P,
DRF2R10H,DR-F2R10H,DRF2R10P,DR-F2R10P,
DRF2R16H,DR-F2R16H,DRF2R16P,DR-F2R16P,
DRFC10H,DR-FC10H,DRFC10P,DR-FC10P,
DRFC16H,DR-FC16H,DRFC16P,DR-FC16P

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DRFR10H,DR-FR10H,DRFR10P,DR-FR10P
DRFR16H,DR-FR16H,DRFR16P,DR-FR16P
DRKC10H,DR-KC10H,DRKC10P,DR-KC10P
DRKC16H,DR-KC16H,DRKC16P,DR-KC16P
DRKR10H,DR-KR10H,DRKR10P,DR-KR10P
DRKR16H,DR-KR16H,DRKR16P,DR-KR16P
DRSC10P,DR-SC10P,DRSC16P,DR-SC16P
DRSR10P,DR-SR10P,DRSR16P,DR-SR16P

DR-AC10,DR-AC10H, DR-AC10P, DR-AC16,DR-AC16H, DR-AC16P,
DR-AR10,DR-AR10H, DR-AR10P, DR-AR16B, DR-AR16H,DR-AR16P,
DR-F2C10,DR-F2C16, DR-F2R10, DR-F2R16, DR-FC10, DR-FC16,
DR-FR10, DR-FR16, DR-KC10, DR-KC16, DR-KR10, DR-KR16,
DR-SC10, DR-SC16, DR-SR10,DR-SR16

DR-ACIO,DR-ACIOH, DR-ACIOP, DR-ACI6,DR-ACI6H, DR-ACI6P,
DR-ARIO,DR-ARIOH, DR-ARIOP, DR-ARI6B, DR-ARI6H,DR-ARI6P,
DR-F2CIO,DR-F2CI6, DR-F2RIO, DR-F2RI6, DR-FCIO, DR-FCI6,
DR-FRIO, DR-FRI6, DR-KCIO, DR-KCI6, DR-KRIO, DR-KRI6,
DR-SCIO, DR-SCI6, DR-SRIO,DR-SRI6

DR-ACIO,DR-ACIOH, DR-ACIOP, DR-ARIO,DR-ARIOH, DR-ARIOP, DR-F2CIO,
DR-F2RIO, DR-FCIO, DR-FRIO, DR-KCIO, DR-KRIO, DR-SCIO, DR-SRIO,Coded switch

Coded switch 10位编码开关 16位拨码开关; NKK日本Nikkai正码档位开关
NKK档位开关JAPAN进口档位开关 PDF选型资料 NKK开关说明书

FR02-SR10P, FR02-SR16P, FR02-SC10P, FR02-SC16P,
FRO2-SR10P, FRO2-SR16P, FRO2-SC10P, FRO2-SC16P,
FR02-SR10, FR02-SR16, FR02-SC10, FR02-SC16,

FRO2-SR10, FRO2-SR16, FRO2-SC10, FRO2-SC16,
FRO2-SRIO, FRO2-SRI6, FRO2-SCIO, FRO2-SCI6,
FRO2-SRIO, FRO2-SCIO, FRO2-SRIO, FRO2-SCIO,
FR02-AC10,FRO2-AC10,FRO2-AC10,FRO2-ACIO, FRO2-ACIO,
FR02-AC16,FRO2-AC16, FR02-ACI6,FRO2-ACI6,
FR02-AR10,FRO2-AR10, FRO2-ARIO, FRO2-ARIO,
FR02-AR16,FRO2-AR16, FR02-ARI6,FRO2-ARI6,
FR02-FC10,FRO2-FC10, FRO2-FCIO, FRO2-FCIO,
FR02-FC16,FRO2-FC16, FR02-FCI6,FRO2-FCI6,
FR02-FR10,FRO2-FR10, FRO2-FRIO, FRO2-FRIO,
FR02-FR16,FRO2-FR16, FR02-FRI6,FRO2-FRI6,
FR02-KR10,FRO2-FK10,FRO2-KR10,FRO2-KRIO, FRO2-KRIO,
FR02-KR16,FRO2-KR16, FR02-KRI6,FRO2-KRI6,