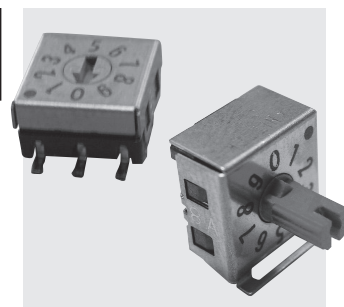


# SMR・SMRR 7000C 8000C

洗淨可能  
Washable

極超小形ディップロータリースイッチ(角 7.5)  
Hyper-Miniature Dip Rotary Switches(7.5mm sq.)  
〔表面実装用/Surface Mount〕



RoHS 指令対応 RoHS Compliant

## ■ 特長

1. 極超小形 (7.5ミリ角)  
弊社比1/2の実装面積・高密度実装用を実現。
2. 丸洗い洗淨が可能
3. 接触部に金メッキ  
微小電流領域で高信頼性を実現。
4. 視認性の向上

## ■ Features

1. Hyper-miniature Size(7.5mm sq.)  
Designed for high density mounting.
2. Process Sealed
3. Gold Plated Contacts
4. Clearly Visible Legends and Position Indicator

## ■ 仕様

|           |      |                      |            |
|-----------|------|----------------------|------------|
| 定格        | 開閉定格 | 最 大                  | DC15V 30mA |
|           |      | 最 小                  | DC20mV 1μA |
|           | 通電定格 | DC50V 100mA          |            |
| 接 触 抵 抗   |      | 100mΩ以下              |            |
| 耐 電 圧     |      | AC250V 1分間           |            |
| 絶 縁 抵 抗   |      | 1,000MΩ以上 (DC 100V)  |            |
| 耐 久 性     |      | 20,000 ステップ          | DC15V 30mA |
| 回 転 ト ル ク |      | 49mN・m [500gf・cm] 以下 |            |
| 使用温度範囲    |      | -25～+85℃             |            |
| 保存温度範囲    |      | -40～+85℃             |            |

## ■ Specifications

|                             |               |                           |            |
|-----------------------------|---------------|---------------------------|------------|
| Rating                      | Switching     | Max.                      | 30mA 15VDC |
|                             |               | Min.                      | 1μA 20mVDC |
|                             | Non-switching | 100mA 50VDC               |            |
| Contact resistance          |               | 100mΩ maximum             |            |
| Dielectric strength         |               | 250VAC, 60s               |            |
| Insulation resistance       |               | 1,000MΩ minimum(100VDC)   |            |
| Load life                   |               | 20,000 steps 30mA 15VDC   |            |
| Operating torque            |               | 49mN・m [500gf・cm] maximum |            |
| Operating temperature range |               | -25～+85℃                  |            |
| Storage temperature range   |               | -40～+85℃                  |            |

## ■ 形名の説明 /Part Numbering

SMR

R

7

0

10

C

—

1 E

シリーズ記号.  
Series code

端子形状.  
Terminals

ツマミ形状.  
Actuators

回路コード.  
Circuits

ステップ数.  
Number of positions

構造  
Structure

梱包仕様  
Packaging spec

|            |                         |   |                             |   |                            |    |                        |    |                       |
|------------|-------------------------|---|-----------------------------|---|----------------------------|----|------------------------|----|-----------------------|
| なし<br>None | ガル・ウィング<br>Gull Wing    | 7 | 標準形<br>Screwdriver Actuator | 0 | 表コード<br>Real code          | 10 | 10ステップ<br>10 positions | 1  | スティック仕様<br>Stick-Tube |
| R          | ライトアングル形<br>Right angle | 8 | シャフト形<br>Shaft Actuator     | 1 | 裏コード<br>Complementary code | 16 | 16ステップ<br>16 positions | 1E | エンボステープ仕様<br>Taping   |

## ■ 品種一覧表 /Table of Part Numbers

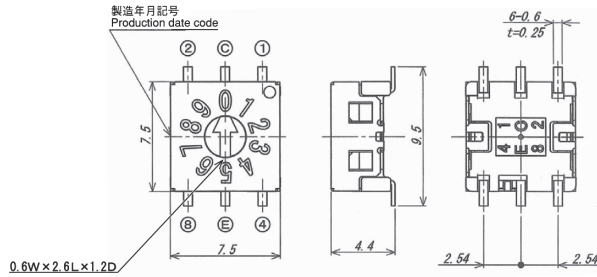
| ツマミ形状 Actuators            |                   | 標準形/Screwdriver Actuator  |                             | シャフト形/Shaft Actuator |                                 |
|----------------------------|-------------------|---------------------------|-----------------------------|----------------------|---------------------------------|
| 回路特性<br>Circuit function   | 端子形状<br>Terminals | ガル・ウィング<br>Gull Wing      | ライトアングル<br>Right Angle      | ガル・ウィング<br>Gull Wing | ライトアングル<br>Right Angle          |
| 表コード<br>Real code          | 10                | SMR7010C-1<br>SMR7010C-1E | SMRR7010C-1<br>SMRR7010C-1E | ★ SMR8010C-1         | ★ SMRR8010C-1<br>★ SMRR8010C-1E |
|                            | 16                | SMR7016C-1<br>SMR7016C-1E | SMRR7016C-1<br>SMRR7016C-1E | SMR8016C-1           | ★ SMRR8016C-1<br>★ SMRR8016C-1E |
| 裏コード<br>Complementary code | 10                | SMR7110C-1<br>SMR7110C-1E | SMRR7110C-1<br>SMRR7110C-1E | SMR8110C-1           | ★ SMRR8110C-1<br>★ SMRR8110C-1E |
|                            | 16                | SMR7116C-1<br>SMR7116C-1E | SMRR7116C-1<br>SMRR7116C-1E | ★ SMR8116C-1         | ★ SMRR8116C-1<br>★ SMRR8116C-1E |

★ (黒星) は、受注生産品です。  
★ : Made-to-order products.

**SMR7010C-1(E)**  
**SMR7110C-1(E)**



(ガル・ウィング)  
Gull Wing

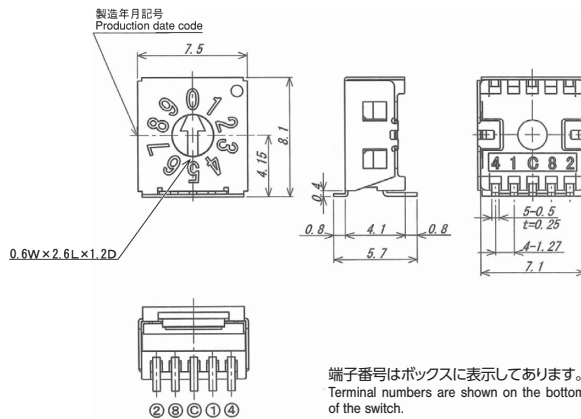


端子番号はボックスに表示してあります。  
Terminal numbers are shown on the bottom of the switch.

**SMRR7010C-1(E)**  
**SMRR7110C-1(E)**



(ライトアングル)  
Right Angle

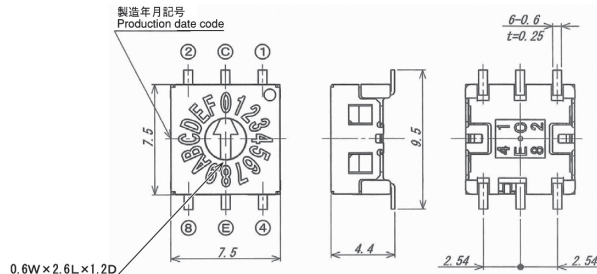


端子番号はボックスに表示してあります。  
Terminal numbers are shown on the bottom of the switch.

**SMR7016C-1(E)**  
**SMR7116C-1(E)**



(ガル・ウィング)  
Gull Wing

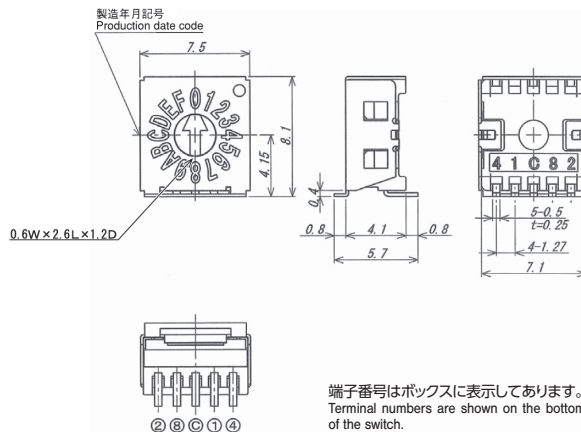


端子番号はボックスに表示してあります。  
Terminal numbers are shown on the bottom of the switch.

**SMRR7016C-1(E)**  
**SMRR7116C-1(E)**



(ライトアングル)  
Right Angle



端子番号はボックスに表示してあります。  
Terminal numbers are shown on the bottom of the switch.

●表コード Real code 軸色 : 黄色 Actuator color : Yellow

| Part No.                        | Position | Terminal # |   |   |   |
|---------------------------------|----------|------------|---|---|---|
|                                 |          | 1          | 2 | 4 | 8 |
| SMR7010C-1(E)<br>SMRR7010C-1(E) | 0        |            |   |   |   |
|                                 | 1        | ●          |   |   |   |
|                                 | 2        |            | ● |   |   |
|                                 | 3        | ●          | ● |   |   |
|                                 | 4        |            |   | ● |   |
|                                 | 5        | ●          |   | ● |   |
|                                 | 6        |            | ● | ● |   |
|                                 | 7        | ●          | ● | ● |   |
|                                 | 8        |            |   |   | ● |
|                                 | 9        | ●          |   |   | ● |

●裏コード Complementary code 軸色 : 赤色 Actuator color : Red

| Part No.                        | Position | Terminal # |   |   |   |
|---------------------------------|----------|------------|---|---|---|
|                                 |          | 1          | 2 | 4 | 8 |
| SMR7110C-1(E)<br>SMRR7110C-1(E) | 0        | ●          | ● | ● | ● |
|                                 | 1        |            | ● | ● | ● |
|                                 | 2        | ●          |   | ● | ● |
|                                 | 3        |            |   | ● | ● |
|                                 | 4        | ●          | ● |   | ● |
|                                 | 5        |            | ● |   | ● |
|                                 | 6        | ●          |   |   | ● |
|                                 | 7        |            |   |   | ● |
|                                 | 8        | ●          | ● | ● |   |
|                                 | 9        |            | ● | ● |   |

●表コード Real code 軸色 : 黄色 Actuator color : Yellow

| Part No.                        | Position | Terminal # |   |   |   |
|---------------------------------|----------|------------|---|---|---|
|                                 |          | 1          | 2 | 4 | 8 |
| SMR7016C-1(E)<br>SMRR7016C-1(E) | 0        |            |   |   |   |
|                                 | 1        | ●          |   |   |   |
|                                 | 2        |            | ● |   |   |
|                                 | 3        | ●          | ● |   |   |
|                                 | 4        |            |   | ● |   |
|                                 | 5        | ●          |   | ● |   |
|                                 | 6        |            | ● | ● |   |
|                                 | 7        | ●          | ● | ● |   |
|                                 | 8        |            |   |   | ● |
|                                 | 9        | ●          |   |   | ● |
|                                 | A        |            | ● |   | ● |
|                                 | B        | ●          | ● |   | ● |
|                                 | C        |            |   | ● | ● |
|                                 | D        | ●          |   | ● | ● |
|                                 | E        |            | ● | ● | ● |
|                                 | F        | ●          | ● | ● | ● |

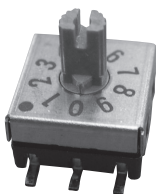
●裏コード Complementary code 軸色 : 赤色 Actuator color : Red

| Part No.                        | Position | Terminal # |   |   |   |
|---------------------------------|----------|------------|---|---|---|
|                                 |          | 1          | 2 | 4 | 8 |
| SMR7116C-1(E)<br>SMRR7116C-1(E) | 0        | ●          | ● | ● | ● |
|                                 | 1        |            | ● | ● | ● |
|                                 | 2        | ●          |   | ● | ● |
|                                 | 3        |            |   | ● | ● |
|                                 | 4        | ●          | ● |   | ● |
|                                 | 5        |            | ● |   | ● |
|                                 | 6        | ●          |   |   | ● |
|                                 | 7        |            |   |   | ● |
|                                 | 8        | ●          | ● | ● |   |
|                                 | 9        |            | ● | ● |   |
|                                 | A        | ●          |   | ● |   |
|                                 | B        |            |   | ● |   |
|                                 | C        | ●          | ● |   |   |
|                                 | D        |            | ● |   |   |
|                                 | E        | ●          |   |   |   |
|                                 | F        |            |   |   |   |

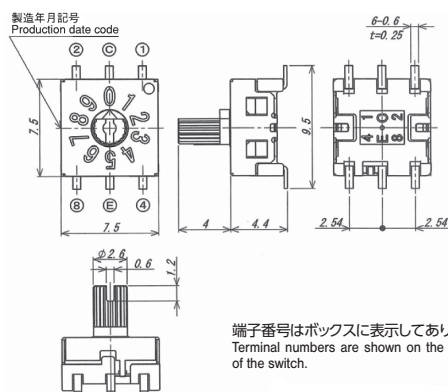
ⓔ : アース端子  
Terminal E is ground terminal

●印は、コモン(C)との接続を示します。  
●...Connection to common (C).

**SMR8010C-1**  
**SMR8110C-1**



(ガル・ウィング)  
Gull Wing



●表コード  
Real code

軸色 : 黄色  
Actuator color : Yellow

| Part No.                     | Position | Terminal # |   |   |   |
|------------------------------|----------|------------|---|---|---|
|                              |          | 1          | 2 | 4 | 8 |
| SMR8010C-1<br>SMRR8010C-1(E) | 0        |            |   |   |   |
|                              | 1        | ●          |   |   |   |
|                              | 2        |            | ● |   |   |
|                              | 3        | ●          | ● |   |   |
|                              | 4        |            |   | ● |   |
|                              | 5        | ●          |   | ● |   |
|                              | 6        |            | ● | ● |   |
|                              | 7        | ●          | ● | ● |   |
|                              | 8        |            |   |   | ● |
|                              | 9        | ●          |   |   | ● |

●裏コード  
Complementary code

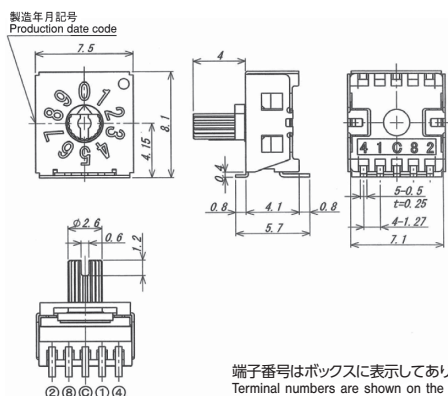
軸色 : 赤色  
Actuator color : Red

| Part No.                     | Position | Terminal # |   |   |   |
|------------------------------|----------|------------|---|---|---|
|                              |          | 1          | 2 | 4 | 8 |
| SMR8110C-1<br>SMRR8110C-1(E) | 0        | ●          | ● | ● | ● |
|                              | 1        |            | ● | ● | ● |
|                              | 2        | ●          |   | ● | ● |
|                              | 3        |            |   | ● | ● |
|                              | 4        | ●          | ● |   | ● |
|                              | 5        |            | ● |   | ● |
|                              | 6        | ●          |   |   | ● |
|                              | 7        |            |   |   | ● |
|                              | 8        | ●          | ● | ● |   |
|                              | 9        |            | ● | ● |   |

**SMRR8010C-1(E)**  
**SMRR8110C-1(E)**



(ライトアングル)  
Right Angle

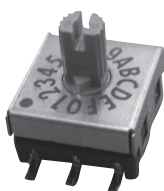


●表コード  
Real code

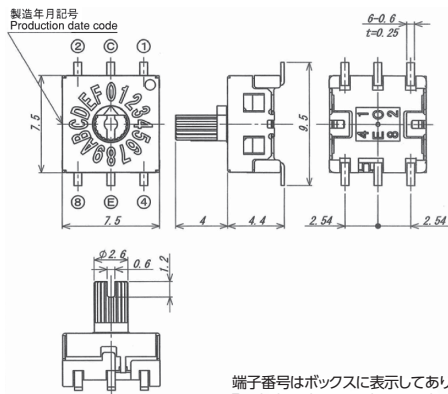
軸色 : 黄色  
Actuator color : Yellow

| Part No.                     | Position | Terminal # |   |   |   |
|------------------------------|----------|------------|---|---|---|
|                              |          | 1          | 2 | 4 | 8 |
| SMR8016C-1<br>SMRR8016C-1(E) | 0        |            |   |   |   |
|                              | 1        | ●          |   |   |   |
|                              | 2        |            | ● |   |   |
|                              | 3        | ●          | ● |   |   |
|                              | 4        |            |   | ● |   |
|                              | 5        | ●          |   | ● |   |
|                              | 6        |            | ● | ● |   |
|                              | 7        | ●          | ● | ● |   |
|                              | 8        |            |   |   | ● |
|                              | 9        | ●          |   |   | ● |
|                              | A        |            | ● |   | ● |
|                              | B        | ●          | ● |   | ● |
|                              | C        |            |   | ● | ● |
|                              | D        | ●          |   | ● | ● |
|                              | E        |            | ● | ● | ● |
|                              | F        | ●          | ● | ● | ● |

**SMR8016C-1**  
**SMR8116C-1**



(ガル・ウィング)  
Gull Wing



●裏コード  
Complementary code

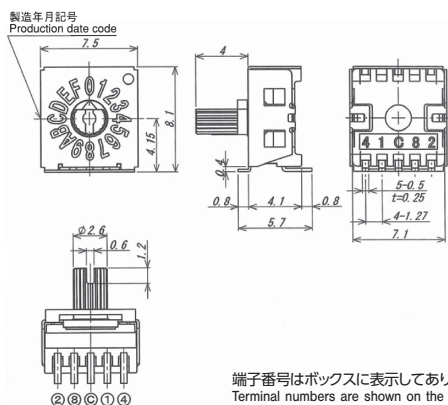
軸色 : 赤色  
Actuator color : Red

| Part No.                     | Position | Terminal # |   |   |   |
|------------------------------|----------|------------|---|---|---|
|                              |          | 1          | 2 | 4 | 8 |
| SMR8116C-1<br>SMRR8116C-1(E) | 0        | ●          | ● | ● | ● |
|                              | 1        |            | ● | ● | ● |
|                              | 2        | ●          |   | ● | ● |
|                              | 3        |            |   | ● | ● |
|                              | 4        | ●          | ● |   | ● |
|                              | 5        |            | ● |   | ● |
|                              | 6        | ●          |   |   | ● |
|                              | 7        |            |   |   | ● |
|                              | 8        | ●          | ● | ● |   |
|                              | 9        |            | ● | ● |   |
|                              | A        | ●          |   | ● |   |
|                              | B        |            |   | ● |   |
|                              | C        | ●          | ● |   |   |
|                              | D        |            | ● |   |   |
|                              | E        | ●          |   |   |   |
|                              | F        |            |   |   |   |

**SMRR8016C-1(E)**  
**SMRR8116C-1(E)**



(ライトアングル)  
Right Angle



Ⓔ : アース端子  
Terminal E is ground terminal

●印は、コモン(C)との接続を示します。  
●...Connection to common (C).

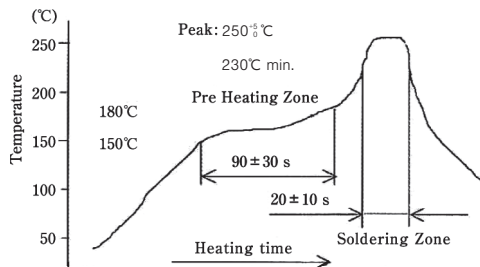
## ■ プリント基板寸法/PCB Footprints

(Top view)

| 端子形状<br>Terminal style         | ガル・ウィング<br>Gull Wing | ライトアングル<br>Right Angle |
|--------------------------------|----------------------|------------------------|
| パターン寸法<br>Footprint dimensions |                      |                        |

## ■ はんだ付け仕様/Soldering Specifications

- 手はんだ/Manual Soldering  
350°C, 3 sec. Max.
- リフロー/Reflow  
ピーク温度255°C (詳細は下記プロファイル参照)  
Peak temperature 255°C (Please refer to the profile below.)



リフローは2回までです。  
Reflow soldering: 2 times max.

## ■ 洗浄仕様/Flux Cleaning

はんだ付け後、部品が室温30°C以下まで十分に冷えてから洗浄してください。熱いまま洗浄液へ浸けると内部の空気が収縮し、吸い込み現象により洗浄液が内部へ侵入する事があります。

After soldering, wait until the switches cool down to room temperature (30°C or below) before washing. If the switches are cleaned while still above 30°C, a vacuum will occur which will cause the cleaning solution to be sucked into the switches.

## ■ 梱包仕様/Packaging Specifications

| シリーズ名 /Series         | SMR7000C-1E        | SMRR7000C-1E/8000C-1E |
|-----------------------|--------------------|-----------------------|
| エンボステープ仕様<br>Taping   | 1,000 pcs/reel<br> | 500 pcs/reel<br>      |
| シリーズ名 /Series         | SMR7000C-1/8000C-1 |                       |
| スティック仕様<br>Stick-Tube | 50 pcs/stick<br>   |                       |

- エンボステープ品はSMRタイプ：1,000個/リール、SMRRタイプ：500個/リールで出荷いたします。リール箱詰めは、1リール(1,000/500個)をリール箱に梱包致します。  
Taping quantity: SMR series 1,000pcs / reel, SMRR series 500pcs/reel.  
Each reel is packed in a cardboard box.
- 最小梱包単位(リール= 上記、スティック=50個) でのご注文を承ります。  
Minimum packaging quantity: Stick-Tube 50pcs, Taping 500pcs or 1,000pcs (refer to Packaging Specifications)