

## Product Standards

|        |                             |            |                           |            |
|--------|-----------------------------|------------|---------------------------|------------|
| Rating | Operating temperature range | -25°C~70°C | Storage temperature range | -25°C~85°C |
|--------|-----------------------------|------------|---------------------------|------------|

| Item                      |                                                      |           | Test Method (JIS C 5961)                                                                                 | Standard                                                                                                 |
|---------------------------|------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Optical Performance       | Reflection attenuation                               | (SM)      | 1,300nm wavelength                                                                                       | 22 dB or greater (PC), 40 dB (AdPC), 60 dB (Angled PC)                                                   |
|                           |                                                      | (GI)      |                                                                                                          | 22 dB or greater (PC)                                                                                    |
|                           | Attenuation                                          | (S grade) |                                                                                                          | Nominal value $\pm 1.0$ dB                                                                               |
|                           |                                                      | (A grade) |                                                                                                          | Nominal value $\pm 1.5$ dB                                                                               |
| Mechanical Performance    | Coupling force and separation force (SC type)        |           | Measure when connectors are coupled and separated in the direction of the axis.                          | Coupling force 19.6 N or less<br>Separation force 19.6 N or less                                         |
|                           | Split sleeve holding force of the adapter            |           | $\phi 2.499 \pm 0.0005$ -mm zirconia gauge                                                               | Phosphor bronze 2 to 5.9 N<br>Zirconia 2 to 3.9 N                                                        |
|                           | Repetitive operation                                 |           | 500 times                                                                                                | 1) The standard for attenuation after test must be satisfied.<br>2) No damage, cracks, or part looseness |
|                           | Vibration resistance                                 |           | Vibration range of 10 to 55 Hz, in 3 directions, 3 hours each                                            |                                                                                                          |
|                           | Shock resistance                                     |           | Acceleration of 981 m/s <sup>2</sup> , in both directions along 3 axes, 3 times each (Total of 18 times) |                                                                                                          |
| Environmental performance | Humidity resistance (Temperature and humidity cycle) |           | Temperature -10°C to 65°C, humidity 90 to 96% 10 cycles                                                  | No conspicuous corrosion                                                                                 |
|                           | Temperature cycle                                    |           | Temperature -25°C to 70°C 100 cycles                                                                     |                                                                                                          |
|                           | Heat resistance                                      |           | Leave for 500 hours at a temperature of 85°C                                                             |                                                                                                          |
|                           | Cold resistance                                      |           | Leave for 500 hours at a temperature of -25°C                                                            |                                                                                                          |
|                           | Salt fog                                             |           | Left in a 5% concentration of salt fog for 48 hours                                                      |                                                                                                          |

## Materials

### HRFC Plug Type

| Part Name    | Material               | Notes                     |
|--------------|------------------------|---------------------------|
| Coupling     | Copper alloy           | NTT FC corresponding item |
| Housing      | Stainless steel        |                           |
| Ferrule      | Zirconia               |                           |
| Split sleeve | Zirconia, copper alloy |                           |

### HSC Plug Type

| Part Name    | Material                   | Notes                     |
|--------------|----------------------------|---------------------------|
| Housing      | Polybutylene terephthalate | NTT SC corresponding item |
| Ferrule      | Zirconia                   |                           |
| Split sleeve | Zirconia, copper alloy     |                           |

## Structure of the Product Number

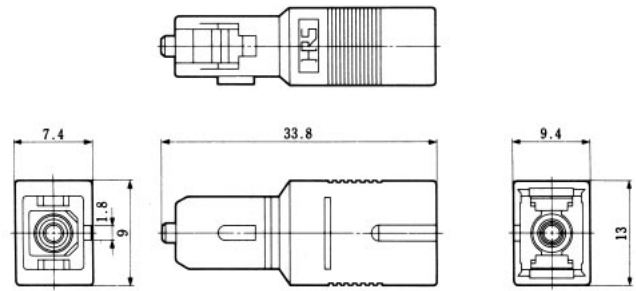
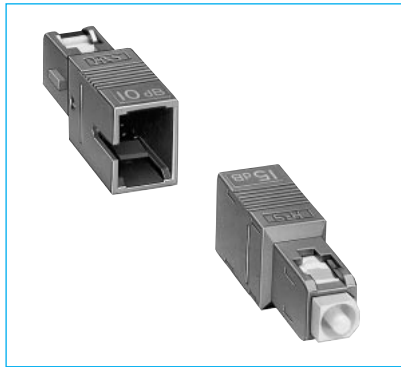
**HSC - AT 1 S - A 03 S**

① ② ③ ④ ⑤ ⑥ ⑦

|                                                                                                      |                                                                                                                                        |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| ① Series name:<br>H S C...Applicable to JIS C 5973 (F04)<br>H R F C...Applicable to JIS C 5970 (F01) | ⑥ Attenuation : 02 ...2dB<br>03 ...3dB<br>05 ...5dB<br>07 ...7dB<br>10 ...10dB<br>15 ...15dB<br>20 ...20dB<br>25 ...25dB<br>30 ...30dB |
| ② Indicates an attenuator.                                                                           |                                                                                                                                        |
| ③ Specification : 1...Split sleeve made of copper alloy<br>4...Split sleeve made of zirconia         |                                                                                                                                        |
| ④ Polishing : S...PC polishing ( $\geq 22$ dB)<br>K...AdPC polishing ( $\geq 40$ dB)                 |                                                                                                                                        |
| ⑤ Optical fiber : A...SM-9.5/125<br>B...GI-50/125<br>DF...Doped fiber                                | ⑦ Attenuation tolerance : S..... $\pm 1$ dB<br>A..... $\pm 1.5$ dB                                                                     |

## ■Product Specifications List

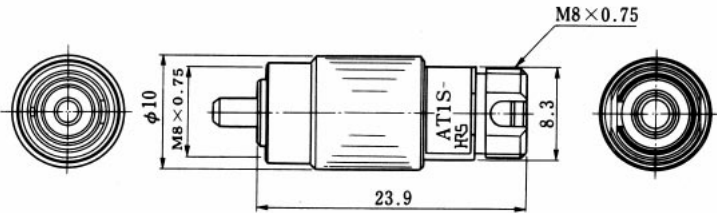
### ●SC-type Attenuators



| HRS No.         | Product Number    | Attenuation | Split Sleeve Specification | Reflection Attenuation | Notes      |
|-----------------|-------------------|-------------|----------------------------|------------------------|------------|
| CL820-0075-0-01 | HSC-AT1S-B05A(01) | 5dB         | Copper alloy               | ≥22dB                  | GI-50/125  |
| CL820-0076-2-01 | HSC-AT1S-B10A(01) | 10dB        |                            |                        |            |
| CL820-0077-5-01 | HSC-AT1S-B15A(01) | 15dB        |                            |                        |            |
| CL820-0078-8-01 | HSC-AT1S-B20A(01) | 20dB        |                            |                        |            |
| CL820-0094-4    | HSC-AT4S-B05A     | 5dB         | Zirconia                   |                        |            |
| CL820-0095-7    | HSC-AT4S-B10A     | 10dB        |                            |                        |            |
| CL820-0096-0    | HSC-AT4S-B15A     | 15dB        |                            |                        |            |
| CL820-0097-2    | HSC-AT4S-B20A     | 20dB        |                            |                        |            |
| CL820-0093-1    | HSC-AT1S-A03S     | 3dB         | Copper alloy               | ≥22dB                  | SM-9.5/125 |
| CL820-0071-9-01 | HSC-AT1S-A05A(01) | 5dB         |                            |                        |            |
| CL820-0072-1-01 | HSC-AT1S-A10A(01) | 10dB        |                            |                        |            |
| CL820-0073-4-01 | HSC-AT1S-A15A(01) | 15dB        |                            |                        |            |
| CL820-0074-7-01 | HSC-AT1K-A03S     | 3dB         |                            |                        |            |
| CL820-0092-9    | HSC-AT1S-A20A(01) | 20dB        |                            |                        |            |
| CL820-0079-0    | HSC-AT1K-A05A     | 5dB         |                            |                        |            |
| CL820-0080-0    | HSC-AT1K-A10A     | 10dB        |                            |                        |            |
| CL820-0081-2    | HSC-AT1K-A15A     | 15dB        |                            |                        |            |
| CL820-0082-5    | HSC-AT1K-A20A     | 20dB        |                            |                        |            |
| CL820-0054-0    | HSC-AT4S-A05A     | 5dB         | Zirconia                   | ≥22dB                  |            |
| CL820-0055-2    | HSC-AT4S-A10A     | 10dB        |                            |                        |            |
| CL820-0056-5    | HSC-AT4S-A15A     | 15dB        |                            |                        |            |
| CL820-0057-8    | HSC-AT4S-A20A     | 20dB        |                            |                        |            |
| CL820-0083-8    | HSC-AT4K-A05A     | 5dB         |                            |                        |            |
| CL820-0084-0    | HSC-AT4K-A10A     | 10dB        |                            |                        |            |
| CL820-0085-3    | HSC-AT4K-A15A     | 15dB        |                            |                        |            |
| CL820-0086-6    | HSC-AT4K-A20A     | 20dB        |                            |                        |            |
| CL820-0087-9    | HSC-AT4TS-A02S    | 2dB         |                            |                        |            |
| CL820-0088-1    | HSC-AT4TS-A05S    | 5dB         |                            |                        |            |
| CL820-0089-4    | HSC-AT4TS-A07S    | 7dB         |                            | ≥60dB                  |            |
| CL820-0090-3    | HSC-AT4TS-A10S    | 10dB        |                            |                        |            |

NOTE : Allowable power: 10 mW

●FC-type Attenuators



| HRS No.    | Product Number | Attenuation | Reflection<br>Attenuation (dB) | Allowable<br>Power (mW) | Suitable<br>Fiber |            |
|------------|----------------|-------------|--------------------------------|-------------------------|-------------------|------------|
| 820-0063-0 | HRFC-AT1S-B05A | 5dB         | ≥22dB                          | 10                      | GI-50/125         |            |
| 820-0064-3 | HRFC-AT1S-B10A | 10dB        |                                |                         |                   |            |
| 820-0065-6 | HRFC-AT1S-B15A | 15dB        |                                |                         |                   |            |
| 820-0066-9 | HRFC-AT1S-B20A | 20dB        |                                |                         |                   |            |
| 820-0058-0 | HRFC-AT1S-A05A | 5dB         |                                |                         | ≥40dB             | SM-9.5/125 |
| 820-0060-2 | HRFC-AT1S-A10A | 10dB        |                                |                         |                   |            |
| 820-0061-5 | HRFC-AT1S-A15A | 15dB        |                                |                         |                   |            |
| 820-0062-8 | HRFC-AT1S-A20A | 20dB        |                                |                         |                   |            |
| 820-0067-1 | HRFC-AT1K-A05A | 5dB         |                                |                         |                   |            |
| 820-0068-4 | HRFC-AT1K-A10A | 10dB        |                                |                         |                   |            |
| 820-0069-7 | HRFC-AT1K-A15A | 15dB        |                                |                         |                   |            |
| 820-0070-6 | HEFC-AT1K-A20A | 20dB        |                                |                         |                   |            |