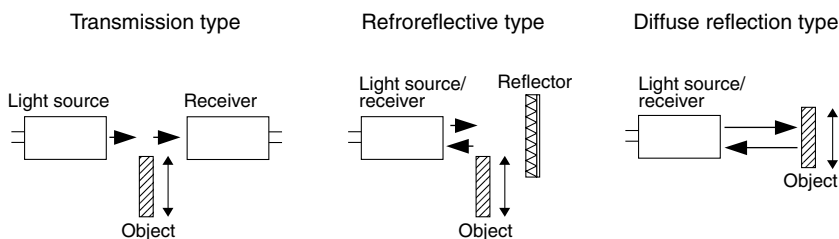


Selection guide

| Basic type | PH21A | PH1C |
|------------------------------|---|--|
| Photo |  AF91-669 |  XX03-013A |
| Description | A slim photoelectric switch with a built-in amplifier. Offers a fine sensitivity adjustment function as a standard feature. Useful for the detection of small objects and objects having insufficient contrast. | Highly compact photoelectric switch with dimensions of 10.8x31x20mm. Energy saving design with long-distance detection and a built-in amplifier. Meets CE Mark requirements. |
| Detecting method | Transmission type Diffuse reflection type | Transmission type Retroreflective type Diffuse reflection type |
| Operation mode | Dark-ON/Light-ON selectable | Dark-ON/Light-ON selectable |
| Special function | Self-diagnosis Fine sensitive adjustment | – |
| Supply voltage | 10 to 30V DC | 12 to 24VDC ± 10% (ripple ± 10% or less) |
| Output configuration | Detecting: NPN transistor, voltage/current output Self-diagnosis: NPN transistor, open collector output | Detecting: NPN transistor, open collector output |
| Output (switching capacity) | 100mA max. (Self-diagnosis output: 50mA max.) | 100mA max. |
| Detectable object (material) | Transparent, opaque, black line against white background | Transparent, opaque |
| Detecting distance | See page 05/134 | 1m, 3m, 4m, 10m |
| Response time | Operation: 1ms Reset: Approx. 40ms | 1ms |
| Ambient temperature | Operation: –25 to +55°C Storage: –40 to +70°C | Operation: –25 to +55°C Storage: –40 to +70°C |
| Degree of protection | IP66 (IEC) | IP67 (IEC) |
| Page | 05/155 | 05/163 |


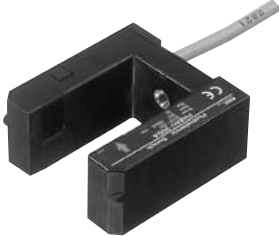
05

■ **Detecting method**

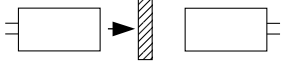
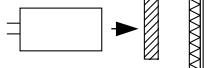

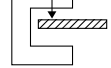

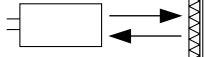
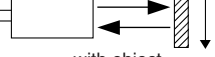
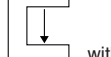


Photoelectric Switches

General information

| | | |
|------------------------------|---|---|
| Basic type | PH4C | PH8AU |
| Photo |  XX03-002A |  KK02-303A |
| Description | AC/DC dual supply voltage. Highly compact with dimensions of 18 x 50 x 50mm. Retroreflective type equipped with mirror surface rejection function | Slot-type photoelectric switches ideal for conveyor applications, such as elevators and multi-level parking lifts. Same mounting method as our slot-type magnetically operated reed switches (type PM1U). |
| Detecting method | Transmission type Retroreflective type Diffuse reflection type | Slot type |
| Operation mode | Dark-ON or Light-ON | Dark-ON or Light-ON |
| Special function | – | – |
| Supply voltage | 24 to 240V AC \pm 10% 12 to 240V DC \pm 10% (ripple \pm 10% or less) | 10 to 30V DC |
| Output configuration | Relay output | NPN transistor, open collector output |
| Output (switching capacity) | 3A max. (250V AC res. load) 10mA max. (5V DC) | – |
| Detectable object (material) | Transparent, opaque | Opaque |
| Detecting distance | 30cm, 2.5m, 3.5m, 4m, 5m | 30mm |
| Response time | 30ms max. | 1ms or less |
| Ambient temperature | Operation: -25 to $+55^{\circ}\text{C}$ Storage: -30 to $+70^{\circ}\text{C}$ | Operation: -25 to $+55^{\circ}\text{C}$ Storage: -30 to $+70^{\circ}\text{C}$ |
| Degree of protection | IP64 (IEC) | IP66 (IEC) |
| Page | 05/168 | 05/172 |

■ Operation mode

| | Transmission type | Retroreflective type | Diffuse reflection type | Slot type |
|---|---|---|--|---|
| Dark-ON (operates when light is interrupted) |  |  |  without object |  |
| Light-ON (operates when light is incident) |  |  |  with object |  without object |