

# 3TK28 Safety Relays

## With relay enabling circuits

### Selection and ordering data

| Type                                                          | 3TK28 21<br>Basic units | 3TK28 22<br>Basic units | 3TK28 23<br>Basic units | 3TK28 24<br>Basic units | 3TK28 25<br>Basic units | 3TK28 26<br>Basic units<br>24 V DC | Basic units<br>Wide voltage<br>range |
|---------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------------------|--------------------------------------|
| <b>Sensors</b>                                                |                         |                         |                         |                         |                         |                                    |                                      |
| • Input                                                       | 1                       | 1                       | 1                       | 1                       | 1                       | 1                                  | 1                                    |
| • Solid-state                                                 | --                      | --                      | --                      | --                      | --                      | ✓                                  | ✓                                    |
| • With contacts                                               | ✓                       | ✓ <sup>1)</sup>         | ✓                       | ✓                       | ✓                       | ✓                                  | ✓                                    |
| <b>Safety mats</b>                                            | --                      | --                      | --                      | --                      | --                      | ✓                                  | ✓                                    |
| <b>Start</b>                                                  |                         |                         |                         |                         |                         |                                    |                                      |
| • Auto                                                        | ✓                       | ✓                       | --                      | ✓                       | ✓                       | ✓                                  | ✓                                    |
| • Monitored                                                   | --                      | --                      | ✓                       | --                      | ✓                       | ✓                                  | ✓                                    |
| <b>Cascading input<br/>24 V DC</b>                            | --                      | --                      | --                      | --                      | --                      | ✓                                  | ✓                                    |
| <b>Key-operated switches</b>                                  | --                      | --                      | --                      | --                      | --                      | --                                 | --                                   |
| <b>Enabling circuit,<br/>floating</b>                         |                         |                         |                         |                         |                         |                                    |                                      |
| • Stop category 0                                             | 3 NO                    | 2 NO                    | 2 NO                    | 2 NO                    | 3 NO                    | 4 NO                               | 4 NO                                 |
| • Stop category 1                                             | --                      | --                      | --                      | --                      | --                      | --                                 | --                                   |
| <b>Enabling circuit,<br/>solid-state</b>                      |                         |                         |                         |                         |                         |                                    |                                      |
| • Stop category 0                                             | --                      | --                      | --                      | --                      | --                      | --                                 | --                                   |
| • Stop category 1                                             | --                      | --                      | --                      | --                      | --                      | --                                 | --                                   |
| <b>Signaling outputs</b>                                      |                         |                         |                         |                         |                         |                                    |                                      |
| • Floating                                                    | 1 NC                    | --                      | --                      | --                      | 2 NC                    | 1 NC                               | 1 NO + 1 NC                          |
| • Solid-state                                                 | --                      | --                      | --                      | --                      | --                      | 2                                  | --                                   |
| <b>Category according to<br/>EN 954-1 max</b>                 | 3 <sup>2)</sup>         | 4                       | 4                       | 3 <sup>2)</sup>         | 4                       | 4                                  | 4                                    |
| <b>SIL level max.</b>                                         | 2                       | 3                       | 3                       | 2                       | 3                       | 3                                  | 3                                    |
| <b>Performance level PL<br/>according to<br/>EN ISO 13849</b> | --                      | --                      | --                      | --                      | --                      | e                                  | e                                    |
| <b>Rated control supply<br/>voltage</b>                       |                         |                         |                         |                         |                         |                                    |                                      |
| • 24 V DC                                                     | --                      | --                      | --                      | ✓                       | ✓                       | ✓                                  | --                                   |
| • 24 V AC/DC                                                  | ✓                       | ✓                       | ✓                       | ✓                       | --                      | --                                 | --                                   |
| • 24 V AC                                                     | --                      | --                      | --                      | --                      | ✓                       | --                                 | --                                   |
| • 115 V AC                                                    | --                      | --                      | --                      | ✓                       | ✓                       | --                                 | --                                   |
| • 230 V AC                                                    | --                      | --                      | --                      | ✓                       | ✓                       | --                                 | --                                   |
| • 24...240 V AC/DC                                            | --                      | --                      | --                      | --                      | --                      | --                                 | ✓                                    |

✓ = Available

-- = Not available

<sup>1)</sup> The ON button is not monitored.

<sup>2)</sup> Depending on the hazard assessment, additional measures may be necessary in the sensor circuit (e.g. protected laying).

| Type                                                          | 3TK28 27<br>Basic units<br><i>t<sub>v</sub></i> | 3TK28 28<br>Basic units<br><i>t<sub>v</sub></i> | 3TK28 30<br>Expansion units <sup>2)</sup> | 3TK28 34<br>Two-hand control units | 3TK28 35<br>Slowing down test apparatus |
|---------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------|------------------------------------|-----------------------------------------|
| <b>Sensors</b>                                                |                                                 |                                                 |                                           |                                    |                                         |
| • Input                                                       | 1                                               | 1                                               | --                                        | 1                                  | --                                      |
| • Solid-state                                                 | --                                              | --                                              | --                                        | --                                 | --                                      |
| • With contacts                                               | ✓                                               | ✓                                               | --                                        | ✓                                  | --                                      |
| <b>Safety mats</b>                                            | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Start</b>                                                  |                                                 |                                                 |                                           |                                    |                                         |
| • Auto                                                        | --                                              | ✓                                               | --                                        | --                                 | --                                      |
| • Monitored                                                   | ✓                                               | --                                              | --                                        | --                                 | --                                      |
| <b>Cascading input<br/>24 V DC</b>                            | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Key-operated switches</b>                                  | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Enabling circuit,<br/>floating</b>                         |                                                 |                                                 |                                           |                                    |                                         |
| • Stop category 0                                             | 2 NO                                            | 2 NO                                            | 4 NO                                      | 2 NO+2 NC                          | 3 NO+2 NC                               |
| • Stop category 1                                             | 2 NO                                            | 2 NO                                            | --                                        | --                                 | --                                      |
| <b>Enabling circuit,<br/>solid-state</b>                      |                                                 |                                                 |                                           |                                    |                                         |
| • Stop category 0                                             | --                                              | --                                              | --                                        | --                                 | --                                      |
| • Stop category 1                                             | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Signaling outputs</b>                                      |                                                 |                                                 |                                           |                                    |                                         |
| • Floating                                                    | 1 NC                                            | 1 NC                                            | --                                        | 2                                  | --                                      |
| • Solid-state                                                 | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Category according to<br/>EN 954-1 max</b>                 | 4 <sup>1)</sup>                                 | 4 <sup>1)</sup>                                 | As basic unit                             | 4                                  | 4                                       |
| <b>SIL level max.</b>                                         | 3                                               | 3                                               | As basic unit                             | 3                                  | 3                                       |
| <b>Performance level PL<br/>according to<br/>EN ISO 13849</b> | --                                              | --                                              | --                                        | --                                 | --                                      |
| <b>Rated control supply<br/>voltage</b>                       |                                                 |                                                 |                                           |                                    |                                         |
| • 24 V DC                                                     | ✓                                               | ✓                                               | --                                        | ✓                                  | ✓                                       |
| • 24 V AC/DC                                                  | --                                              | --                                              | ✓                                         | --                                 | --                                      |
| • 24 V AC                                                     | ✓                                               | ✓                                               | --                                        | ✓                                  | ✓                                       |
| • 115 V AC                                                    | ✓                                               | ✓                                               | ✓                                         | ✓                                  | ✓                                       |
| • 230 V AC                                                    | ✓                                               | ✓                                               | ✓                                         | ✓                                  | ✓                                       |
| • 24...240 V AC/DC                                            | --                                              | --                                              | --                                        | --                                 | --                                      |

✓ = Available

-- = Not available

<sup>1)</sup> Only possible for instantaneous enabling contacts, otherwise Category 3.

<sup>2)</sup> For expansion of Siemens safety products.