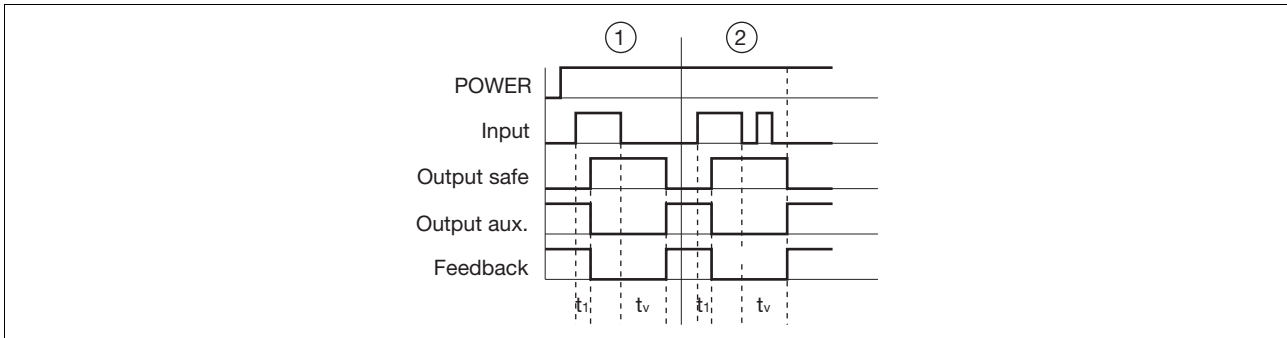


up to PL e of EN ISO 13849-1 PNOZ s9

Timing diagrams

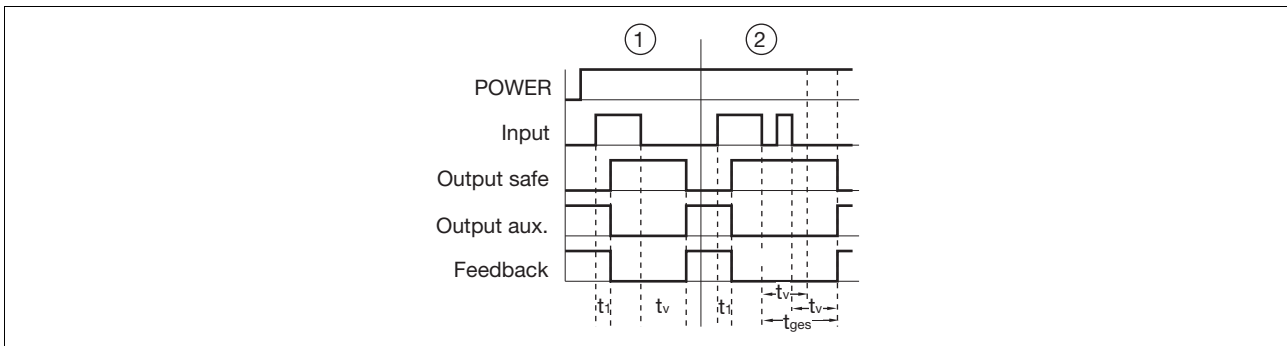
Delay-on de-energisation, not retriggerable



Key

- ▶ Power: Supply voltage
- ▶ Input: Input circuit S32
- ▶ Output safe: Safety contacts 17-18, 27-28, 37-38
- ▶ Output aux.: Auxiliary contact 45-46
- ▶ Feedback: Feedback loop S34
- ▶ t_1 : Switch-on delay
- ▶ t_v : Delay time
- ▶ ①: Delay-on de-energisation with the time t_v
- ▶ ②: No retriggering in the time t_v

Delay-on de-energisation, retriggerable

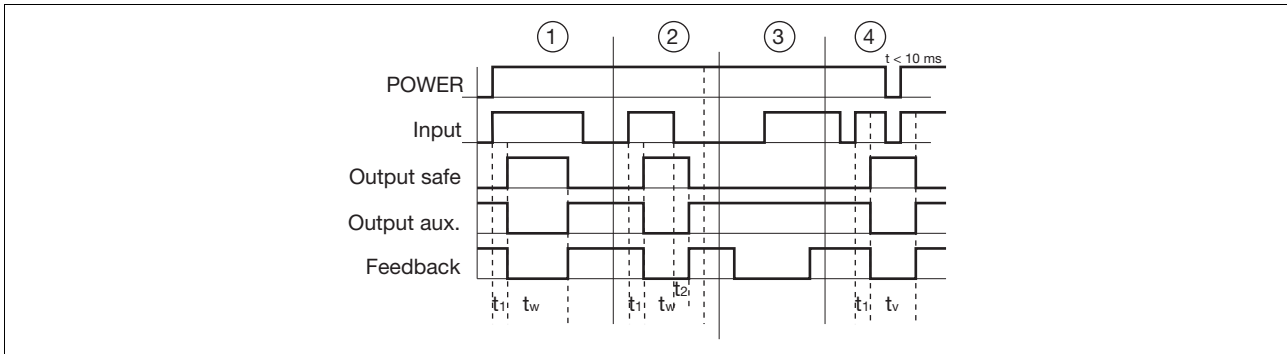


Key

- ▶ Power: Supply voltage
- ▶ Input: Input circuit S32
- ▶ Output safe: Safety contacts 17-18, 27-28, 37-38
- ▶ Output aux.: Auxiliary contact 45-46
- ▶ Feedback: Feedback loop S34
- ▶ t_1 : Switch-on delay
- ▶ t_v : Delay-on de-energisation
- ▶ t_{ges} : Overall delay time
- ▶ ①: Delay-on de-energisation with the time t_v
- ▶ ②: Retriggering in the time t_v for overall delay-on de-energisation t_{ges}

up to PL e of EN ISO 13849-1 PNOZ s9

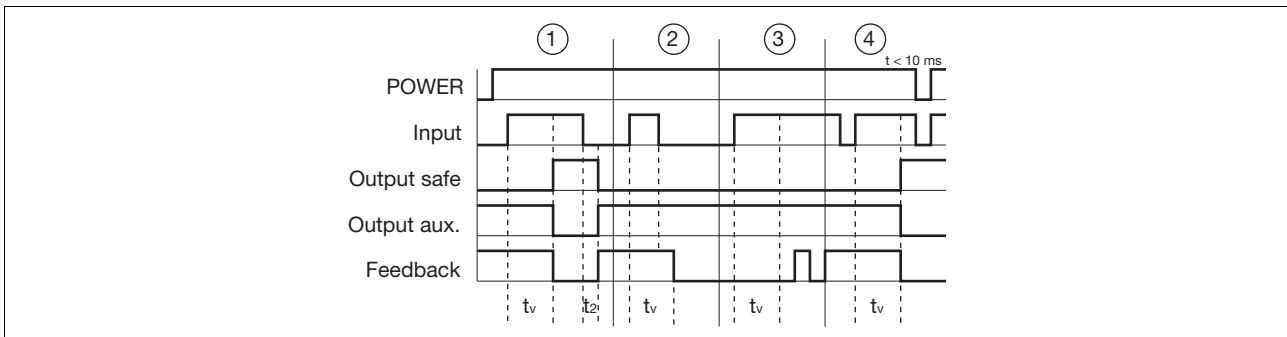
Pulse on switching on



Key

- ▶ Power: Supply voltage
- ▶ Input: Input circuit S32
- ▶ Output safe: Safety contacts 17-18, 27-28, 37-38
- ▶ Output aux.: Auxiliary contact 45-46
- ▶ Feedback: Feedback loop S34
- ▶ t_1 : Switch-on delay
- ▶ t_2 : Delay-on de-energisation
- ▶ t_w : Pulse time
- ▶ ①: Normal operating cycle
- ▶ ②: Fault: Input circuit opened too early
- ▶ ③: Fault: Feedback loop closed too late
- ▶ ④: Normal operating cycle with supply interruption < 10 ms

Delay-on energisation



Key

- ▶ Power: Supply voltage
- ▶ Input: Input circuit S32
- ▶ Output safe: Safety contacts 17-18, 27-28, 37-38
- ▶ Output aux.: Auxiliary contact 45-46
- ▶ Feedback: Feedback loop S34
- ▶ t_2 : Delay-on de-energisation
- ▶ t_v : Delay time
- ▶ ①: Normal operating cycle
- ▶ ②: Fault: Input circuit opened too early
- ▶ ③: Fault: Feedback loop closed too late after t_2 elapsed
- ▶ ④: Normal operating cycle with supply interruption < 10 ms

Wiring

Please note:

- ▶ Information given in the “Technical details” must be followed.
- ▶ Outputs 17-18, 27-28, 37-38 are safety contacts, output 45-46 is an auxiliary contact (e.g. for display).
- ▶ To prevent contact welding, a fuse should be connected before the output contacts (see technical details).
- ▶ Calculation of the max. cable runs I_{max} in the input circuit:

$$I_{max} = \frac{R_{lmax}}{R_l / km}$$

$$R_{lmax} = \text{max. overall cable resistance (see technical details)}$$

$$R_l / km = \text{cable resistance/km}$$
- ▶ Use copper wire that can withstand 60/75 °C.
- ▶ Sufficient fuse protection must be provided on all output contacts with capacitive and inductive loads.