Stop manipulation – EN ISO 14119 correctly implemented

PILZ
THE SPIRIT OF SAFETY

START

Implementation of basic measures

Is there an incentive to defeat? **1**

Yes

Is it possible to eliminate or minimise the incentive to defeat the interlocking devices?

Yes

2 Elimination or minimisation of the incentive to defeat by applying design measures or by implementing alternative operating modes

No

No

3 Application of measures to prevent reasonably foreseeable defeat

END

1

1. Evaluation of motivation to defeat interlocking devices

Task	Mode 1 [1]	Mode 2 [1]	Mode 3 [1]	Mode 4 [1]	Mode 5 [1]	Task permissible in these modes of operation?	Task possible without defeating?	Easier/ more convenient [2]	Faster, increased productivity	Flexibility, e.g. for larger workpieces [2]	Higher precision [2]	Better visibility [2]	Better audibility [2]	Less physical effort [2]	Reduced travel [2]	Greater freedom of movement [2]	Improved flow of movement [2]	Avoidance of interruption [2]	...
Initial operation																			
Program test/ Test run																			
Setup/adjustment conversion/tooling																			
Machining																			
Manual intervention for swarf removel																			
Manual change of workpiece																			
Manual intervention for trouble shooting																			
Checking/ random sampling																			
Manual intervention for measuring/fine tuning																			

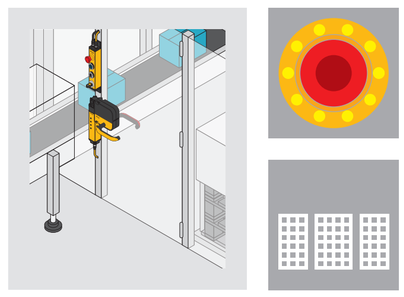
[1] Modes of operation include automatic mode and manual mode
Op. mode 1: Automatic mode
Op. mode 2: Setup
Op. mode 3: Test run
Op. mode 4: Process monitoring
Op. mode 5: Service

[2] Benefits without protective device:
0 = none; + = Minor; ++ = Substantial

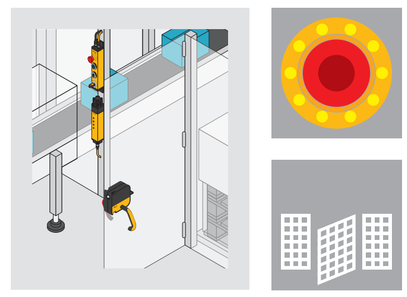
Table based on EN ISO 14119

2

Automatic mode

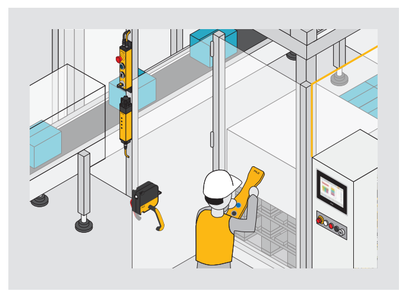


Set-up mode

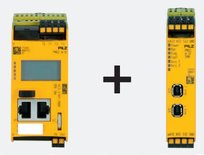
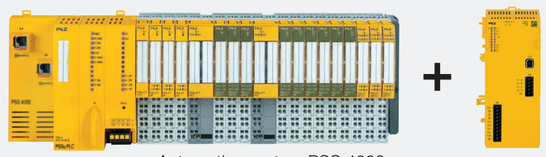


+

Alternative measures



Alternative operating modes (set up):

Operating modes	Control system	Enabling switch
 Operating mode selection and access permission system PITmode	 Configurable, safe small controllers PNOZmulti 2  Automation system PSS 4000	 Drive technology PMC
Webcode: web150439	Webcode: web225263, web188188, web150507	 Enabling switch PITenable  Manually operated control devices PITjog
		Webcode: web150440, web150437

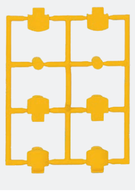
3

Additional measures:

Coding level	Safety switches			Safety gate systems				Measure to prevent defeating of interlocking device
	PSENmech	PSENmag	PSENcode	PSENmech with guard locking	PSENslock	PSENmlock	PSENsgate	
								
Low/ medium							Coded	No measure required.
	X	X	Coded	X	Coded	Coded		Permanent attachment required. In addition, the device must be attached beyond reach or in a concealed position, or the actuator ID must be monitored with the SDD.
High							Unique fully coded	No measure required.
			Fully coded, unique fully coded		Fully coded, unique fully coded	Fully coded, unique fully coded		Permanent attachment required.

Webcode: web150521 Webcode: web150524

Permanent attachment methods:

Welding	Bonding	Bolting	Capping	
				

Training
Pilz Academy

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