

▶ Stop manipulation – EN ISO 14119 correctly implemented



START

Implementation of basic measures

Is there an incentive to defeat?

1

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

2

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

Application of measures to prevent reasonably foreseeable defeat

3

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 removal																				
Manual change of workpiece																				
Manual intervention for trouble shooting																				
Checking/ random sampling																				
Manual intervention for measuring/fine tuning																				

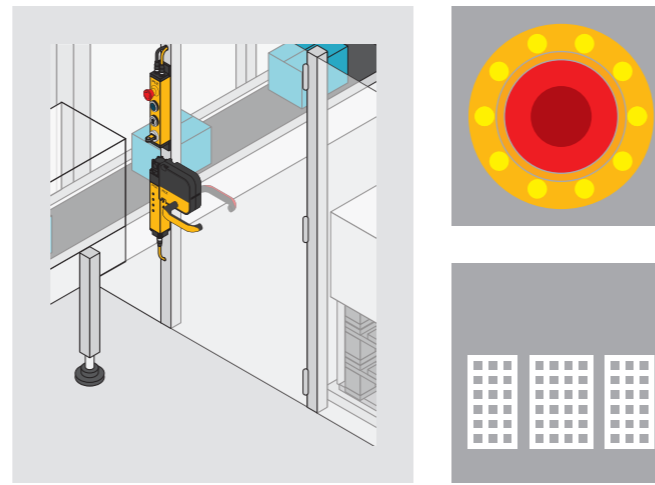
¹⁾ Modes of operation include automatic mode and manual mode
Op. mode 1: Automatic mode
Op. mode 2: Setup
Op. mode 3: Test run
Op. mode 4: Process monitoring
Op. mode 5: Service

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

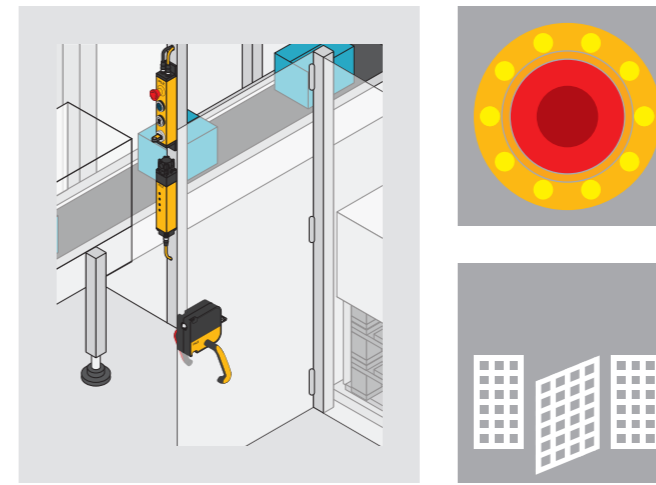
Table based on EN ISO 14119

2

Automatic mode




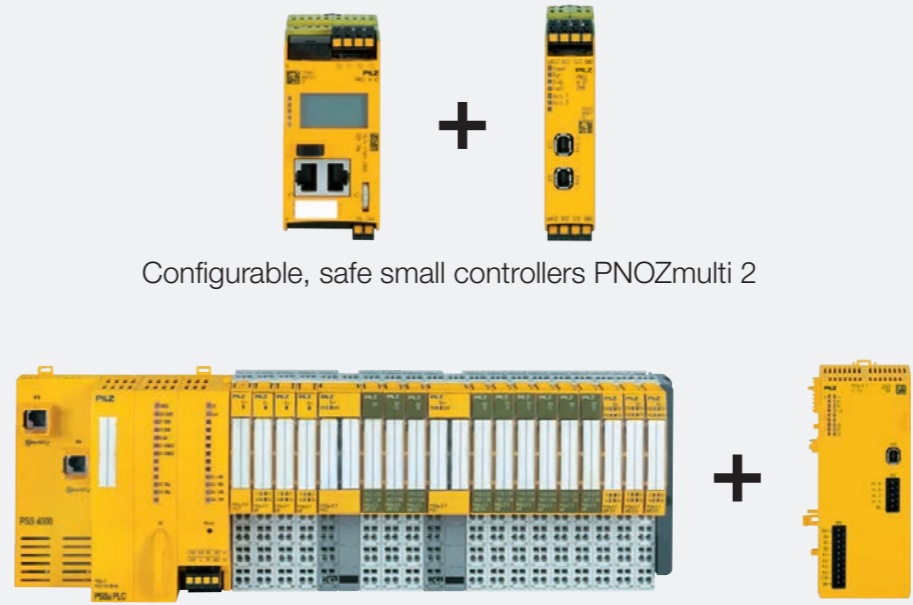

Set-up mode



Alternative measures



Alternative operating modes (set up):

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

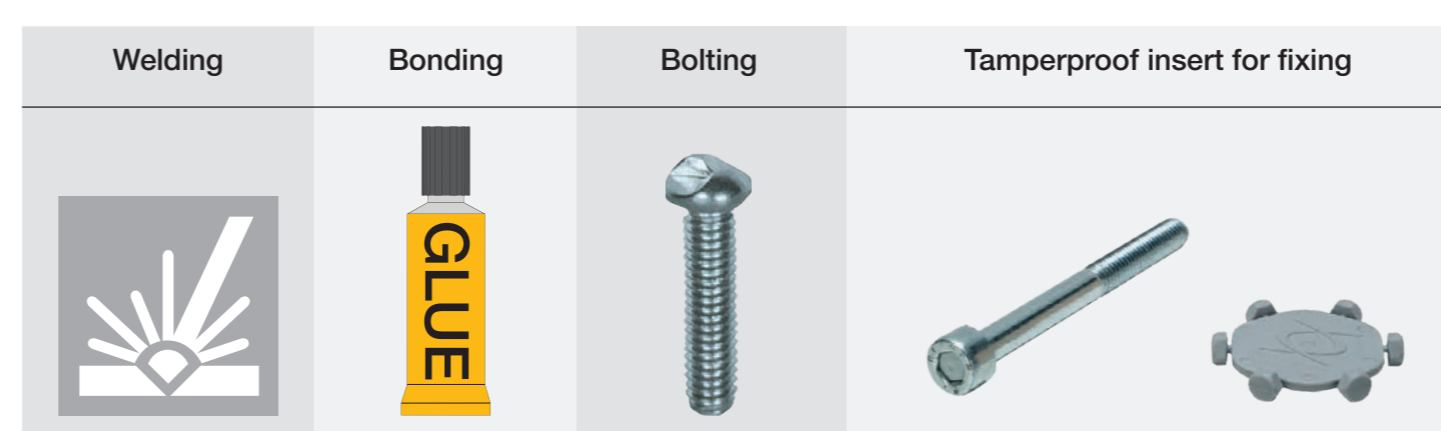
3

Additional measures:

Coding level	Safety switches		Safety gate systems				Measure to prevent defeating of interlocking device	
	PSENmag	PSENcode	PSENmech with guard locking	PSENSlock 2	PSENmlock	PSENmlock mini		PSENmgate
Low/medium	X	Coded	X	Coded	Coded	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		Fully coded, unique fully coded		Fully coded, unique fully coded	Fully coded, unique fully coded	Fully coded, unique fully coded	Fully coded	

Webcode: web150523 Webcode: web239479

Permanent attachment methods:



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