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Conformance Report

of the

Safety Application
Packaging Machine Application

Applicant

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Report No.: PO97921C

Version 1.2 of 2026-02-02

Testing Laboratory for Safety Components

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Modification History

Rev.	Status	Date	Author	Modification / Description
1.0	replaced	2021-12-13	Peter Weiß	-
1.1	replaced	2023-09-25	Peter Weiß	New sensor type added; see chapter 1.0 and 2.2
1.2	active	2026-02-02	Peter Weiß	New sensor type added; see chapter 1.0 and 2.2 Address of testing laboratory changed Adapted to new template version 33

Table 1: Modification history

1 Target of Evaluation (ToE)

In April 2021 Pilz GmbH & Co. KG requested TÜV SÜD Rail GmbH to test the Packaging Machine Application according to the standard listed in clause 4 of this report. The project number related to this Conformance Report is 717523062.

The ToE is a product used in safety related applications. The Packaging Machine Application is a generic application and should be approved for

- SIL 2 according to IEC 62061
- Cat 3 / PL d according to ISO 13849-1

In May 2023 the company Pilz GmbH & Co. KG requested TÜV SÜD Rail GmbH to test the modification of the Packaging Machine Application according to the standard listed in clause 4 of this report. The related project number is 717527204.

Pilz GmbH & Co. KG requested TÜV SÜD Rail GmbH in March 2025 to test the modification of the Packaging Machine Application according to the standard listed in clause 4 of this report. The related project number is 717531880.

2 Scope of Testing

2.1 Test Specimen

The Packaging Machine Application is running on an already certified safety system realizing following safety function:

- Detection of low number of cardboards boxes in feeder

The aim of the project is to develop a system consisting of two sensors (Baumer company) and an already certified safety related programmable system (Pilz company) preventing access to the dangerous zone of the machine.

When feeding cardboard boxes into a machine, there is a risk that if the number of cardboard boxes is too low, the operator has access to parts of the running machine and maybe seriously injured. To prevent this, it must be monitored whether there is always a sufficient number of cardboards in the feeder.

Regarding the above-described safety function the cardboard box feeder can be regarded as a protective device.

The cardboard boxes are to be recognized using two diffuse sensors with background suppression from company Baumer. In order to avoid detection errors, the sensors must be attached mechanically according to the operating instructions.

For the application, only the sensor type from company Baumer named in the document shall be used.

The evaluation of the sensors should be done by PNOZmulti 2 or myPNOZ controls of the company Pilz, see chapter 2.2.

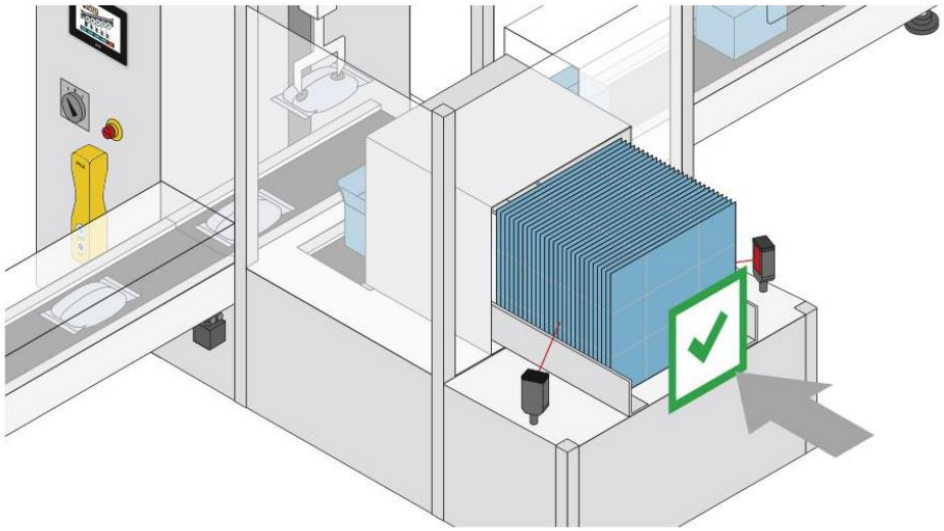


Figure 1: Overview of Packaging Machine Application

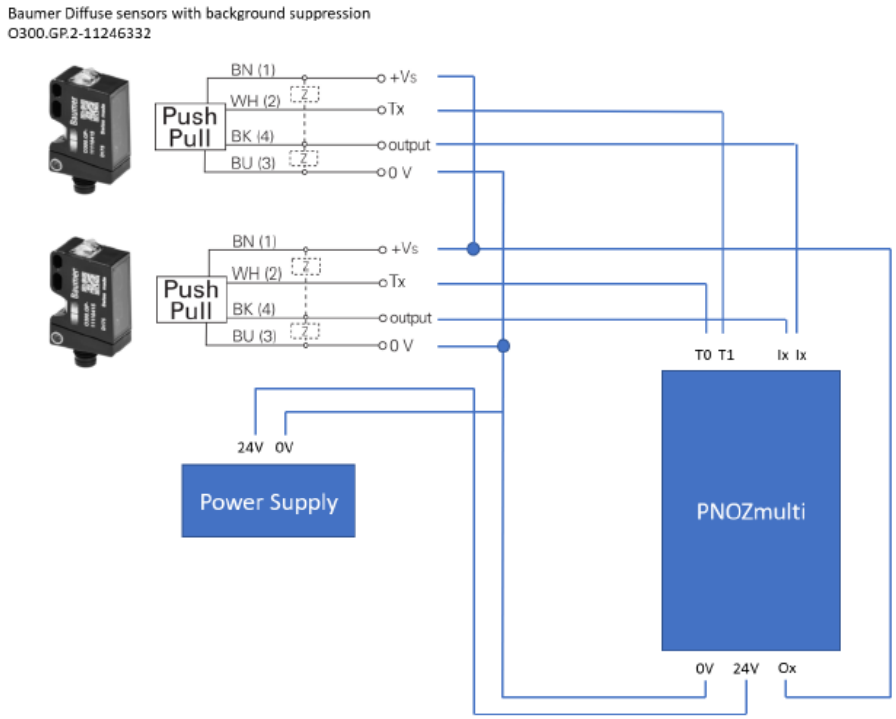
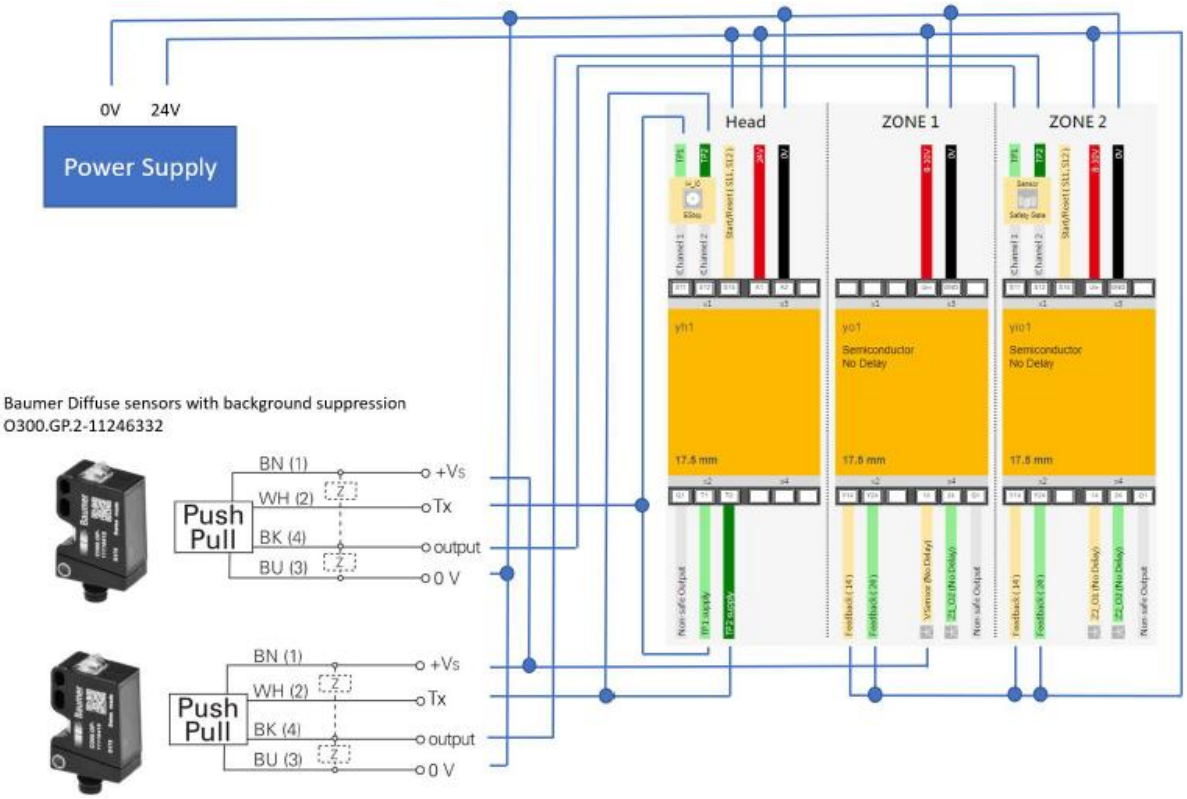


Figure 2: Overview of Packaging Machine Application with PNOZmulti



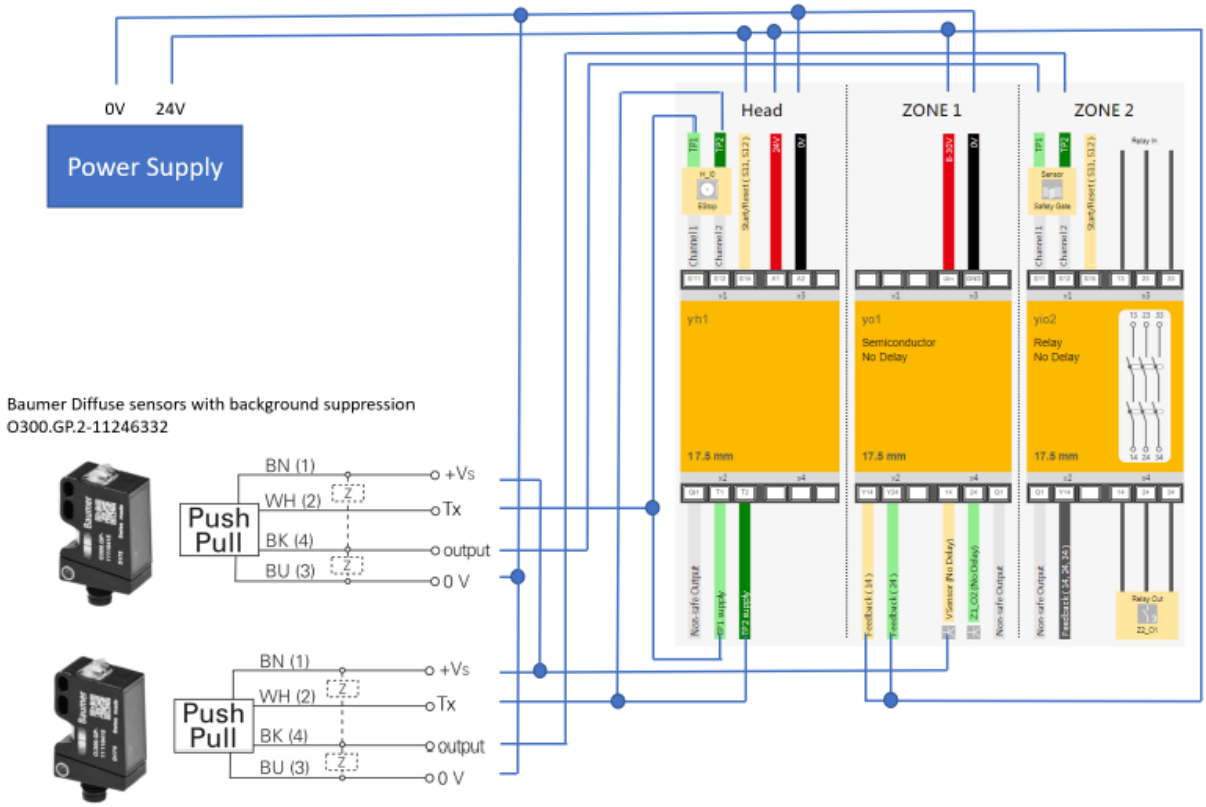


Figure 3: Overview of Packaging Machine Application with myPNOZ

2.2 Nomenclature and Identification of Packaging Machine Application

The Packaging Machine Application tested is identified by hardware version as follows:

Name	Date	HW (requested sensor version for safety applications)	Remarks
Baumer Sensor O300.GP.2-11246332 O300W.GP2-11723089	Lxxy.zz.X	A (Electronic 11703768)	L = year xx = week y = day of the week zz = production Facility X = revision number (includes HW and SW)
Baumer Sensor O200.GP-11729705		A (Electronic 11729322)	
Baumer Sensor O500.GR.2-11729706		A (Electronic 11729316)	
myPNOZ	-	-	See related certification documentation
PNOZmulti 2	-	-	See related certification documentation

Table 2: HW identification of Packaging Machine Application

The Packaging Machine Application tested is identified by software version as follows:

Name	Date	SW	Remarks
Baumer Sensor O300.GP.2-11246332	-	FW_O200GP0F_S_PILZ_01-00-01	Software version is included in sensor revision number
Baumer Sensor O300W.GP.2-11723089	2023-09-20	FW_O200GP0F_S_PILZ_01-00-01	Washdown Version
Baumer Sensor O200.GP-11729705	2025-10-27	FW_O200GP0F_S_PILZ_01-00-01	-
Baumer Sensor O500.GR.2-11729706	2025-10-27	FW_O200GP0F_S_PILZ_01-00-01	-
myPNOZ	-	-	See related certification documentation
Configuration myPNOZ[1]	-	myPNOZ.91.CKA360AB000XB700	-
PNOZmulti 2	-	-	See related certification documentation
Check sum PNOZmulti[1]	-	D780	-

Table 3: SW Identification of Packaging Machine Application

[1] The referenced checksum / configuration is just related for this part of the approved application. The packing machine application checksum / configuration will deviate according to the specific adaptions.

3 Approval Requirements

The approval of the Packaging Machine Application will be according to the regulations and standards listed in clause 4 of this document. This will certify the successful completion of the following test segments.

I. Functional Safety including

- Functional safety management (FSM) and safety lifecycle
- Applied safety development process
- Analysis of the product structure / architecture (Block-Diagram-FMEA)
- Verification and validation procedures/activities
- Fault simulations and software tests
- Approval of fault avoidance measures
- Functional tests

II. Safety information in the product documentation (safety manual, user manual, installation and operating instructions).

III. Product-Related Quality Assurance in Manufacture and Product Development

Approval is dependent on successful completion of all above listed test segments.

3.1 Approval Documentation

The detailed technical evaluation is documented in the most recent version of the Technical Report:

Document No.	Description	Project No.
PO97659T	Technical Report	717523062
Safety related requirements, conditions and restrictions can be found in the most recent version of the following user documentation		
m_o300gp2_11246332	O300.GP.2-11246332	717523062
O300.GP.2-11246332	Reflexions-Lichttaster mit Hintergrundausblendung O300.GP.2-11246332	717523062
SD_cardboard feed (Lösungsbeschreibung _V1.0_DEA22039999)	SD_cardboard feed (Lösungsbeschreibung, Lösungen für sichere Verpackungsmaschinen)	717523062

Table 4: Technical Report

Modifications have been evaluated and tested and are documented in the most recent version of the Technical Report (TR):

Document No.	Modification Description	Project No.
Technical Report v1.1		
PO97659T	New sensor type added	717527204
Safety related requirements, conditions and restrictions can be found in the following user documentation		
O300W.GP.2-11723089	m_o300wgp2_11723089	717527204
O300W.GP.2-11723089	Reflexions-Lichttaster mit Hintergrundausblendung O300W.GP.2-11723089	717527204
SD_cardboard feed (Lösungsbeschreibung_1006148)	SD_Cardboard Feed (Lösungsbeschreibung, Sichere Überwachung der Kartonagenzufuhr)	717527204
Technical Report v1.3		
PO97659T	New sensor type added	717531880
Safety related requirements, conditions and restrictions can be found in the following user documentation		
20250324_FSP_98001087_Pilz-SGS-O200_G4	O200 Pilz Safeguard System	717531880
20250324_RTPpd_98001087_Pilz-SGS-O200_G4	O200 Pilz Safeguard System	717531880

Document No.	Modification Description	Project No.
20250324_FSP_98001087_Pilz-SGS-O500_G4	O500 Pilz Safeguard System	717531880
20250324_RTPpd_98001087_Pilz-SGS-O500_G4	O500 Pilz Safeguard System	717531880
SD_Cardboard Feed_1006148-DE-05	Sichere Überwachung der Kartonagenzufuhr	717531880

Table 5: Reports on Modifications

Based on the specified purpose of use of the Packaging Machine Application in safety critical process applications, the certification is based on the set of standards listed in clause 4 of this document. The issuance of the certificate states compliance with these references unless specifically noted otherwise.

4 Standards and Guidelines

The regulations and guidelines which form the basis of the type testing are listed below.

4.1 Functional Safety Standards

No.	Reference	Description
/N1/	IEC 62061:2021	Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems
/N2/	ISO 13849-1: 2023	Safety of machinery - Safety-related parts of control systems Part 1: General principles for design

Table 6: Functional safety standards

4.2 Susceptibility to Environmental Errors

Not applicable.

4.3 Safety Information in the Product Documentation (safety manual, operating instructions, labelling)

No.	Reference	Description
/N3/	IEC 62061: 2021	Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems
/N4/	ISO 13849-1: 2023	Safety of machinery - Safety-related parts of control systems Part 1: General principles for design

Table 7: Safety information standards

4.4 Quality Management System

No.	Reference	Description
[M1]	QMS	Quality Management System TÜV SÜD Rail GmbH
	TR_RA_P_04.50	Test Program Functional Safety & Cybersecurity TR_RA_P_04.51 Definition Scope of testing TR_RA_P_04.52 Concept Phase & Safety Lifecycle TR_RA_P_04.53 Detail Phase Hardware TR_RA_P_04.54 Detail Phase Software TR_RA_P_04.55 Safety Manual TR_RA_P_04.56 Result of Testing
[M2]	D-PL-11190-08-00	DAkkS accreditation according to DIN EN ISO 17025:2018 / EN ISO/IEC 17025:2017

Table 8: Quality Management System

5 Results

5.1 Functional Safety

The tests performed and quality assurance measures implemented by the Pilz GmbH & Co. KG have shown that the Packaging Machine Application complies with the testing criteria specified in clause 4 subject to the conditions defined in clause 6 and is suitable for safety-related use in applications up to

- SIL 2 according to IEC 62061 and
- Cat 3 / PL d according to ISO 13849-1.

6 Implementation Conditions and Restrictions

The use of the Packaging Machine Application shall comply with the current version of the safety parts of the user manual, and the following implementation and installation requirements have to be followed, if the Packaging Machine Application is used in safety-related installations.

- The guidelines and requirements specified in the user documentation shall be followed. Only modules certified for safety-related operation shall be used for safety-critical functions.
- Timing aspects like reaction times, test intervals or test execution times have to be considered by the implementation of the final Safety function.
- The operating conditions like lifetime or operating temperature as specified in the user documentation shall be met.
- The procedures of modification of safety related data and components described in the user manual have to be followed.
- The maintenance and repair instructions described in the instruction manual of the Packaging Machine Application have to be followed.

Munich, 2026-02-02

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