

# Product Information

## PEL 3000 - Overview

### Permanent Event Logger

Complete system for logging, digital preservation and analysis of

- Faults
- Messages
- Data

from Siemens S7 PLC or compatible (Yaskawa, etc.). Storing the captured data in a SQL database over an adjustable period.

**SCADA** system for recognition and evaluation of systematic errors, malfunctions, operator intervention, use and availability of the system and also online access to operating data acquisition.

**No programming necessary!** Specification of the data to be recorded without programming or configuration of an OPC server only by defining the signals in Excel tables and reading the configuration data using a USB stick.

Output of captured faults, messages and data as a CSV file on a USB stick (or network drive).

Course with USB stick:

- connect USB Stick
- trigger data export via bit in the PLC
- wait for feedback 'Export finished'
- take out USB stick

Optionally connect a touch screen monitor to issue:

- Fault-, message- und data history
- Fault rate
- Down times
- Availability
- Graphical representation of selected signals
- Monitoring of events

Timeline selectable for list and graphic representation:

- Actual, last or shift before last shift
- Select time interval by days

**OEE** (Overall Equipment Effectiveness) to display the productivity of the machine (optional).

Determined from:

- Availability
- Effectiveness
- Quality

Limit monitoring (optional):

- immediate messages or
- moving average
- alarm signal to PLC
- eMail/SMS notification

Recipe management (optional)

1	A	B	C	D	E	F	G	H	
2	<b>Faults</b>								
3	module	address	name	type	logging	description_DE	description_EN	optional columns	
4	60	0.0	Failure_1	Bool	3	I1.1 Not Halt betätigt	I1.1 emergency stop triggered		
5	60	0.1	Failure_2	Bool	3	I3.5 Not Halt SGM betätigt	I3.5 emergency stop Mould triggered		
6	60	0.2	Failure_3	Bool	3	I8.0 Not Halt Multivac betätigt	I8.0 emergency stop Multivac triggered		
7	60	0.3	Failure_4	Bool	3	Störung_4	Fault_4		
8	60	1.0	filler	Byte	0	Füller	filler		
9	60	2.0	ExampleA(3)	structExp	3	Beispiel A	example A		
10	60	20.0	ExampleB	Byte	0	Beispiel B	example B		
11	<b>Messages</b>								
12	module	address	name	type	logging	description_DE	description_EN	optional columns	
13	61	0.0	Message_00	Bool	3	Produktivsystem	production system		
14	61	0.1	Message_01	Bool	3	Steuerspannung einschalten	Switch on control voltage		
15	61	0.2	Message_02	Bool	3	Schrittbetrieb angewählt	Step mode selected		
16	61	0.3	Message_03	Bool	3	Einrichtbetrieb angewählt	Setup mode selected		
17	61	0.4	Message_04	Bool	3	Bitte warten - Achsen Gruppe 1 nicht betriebsbereit	Please wait - axes group 1 not ready		
18	61	0.5	Message_05	Bool	3	Bitte warten - Achsen Gruppe 2 nicht betriebsbereit	Please wait - axes group 2 not ready		
19	61	0.6	Message_06	Bool	3	Schrittkettenstörung Gruppe 1 siehe Diagnosebilder	Sequencer fault group 1 look diagnosis picture		
20	61	0.7	Message_07	Bool	3	Schrittkettenstörung Gruppe 2 siehe Diagnosebilder	Sequencer fault group 2 look diagnosis picture		
21	61	1.0	Message_08	Bool	3	Fahren ohne Teile aktiviert !!!	Drive without parts active !!!		
22	61	1.1	Message_09	Bool	3	Anlage Gruppe 1 in Grundstellung fahren	Please homing group 1		
23	61	1.2	Message_10	Bool	3	Anlage Gruppe 2 in Grundstellung fahren	Please homing group 2		
24	<b>Data</b>								
25	module	address	name	type	logging	graphic	description_DE	description_EN	optional columns
26	250	0.0	Counter_01	DINT	3		Betriebsstundenzähler [Stunde]	hour meter automatic mode	System
27	250	4.0	CycleCounter	DINT	3		Zykluszähler	cycle counter	System
28	250	8.0	Counter_03	DINT	3		Zykluszähler gesamt	cycle counter total	
29	250	12.0	Counter_04	DINT					
30	250	16.0	Counter_05	DINT					
31	250	20.0	Counter_06	DINT	3		Gesamteile [Stück]	Total parts Produced [parts]	
32	250	24.0	Counter_07	DINT	3		Gesamteile IO [Stück]	Total parts OK [parts]	
33	250	28.0	Counter_08	DINT					

**Audit trail (optional)**

System settings and production specifications can only be changed by authorized employees.

One and two way authorization as well as 2 and 4 eyes principle in any combination.

Groups and users are managed directly on the system and are automatically synchronized across all machines.

All inputs and movements in the system are recorded user-specifically, saved long-term and can be evaluated directly according to different criteria.

The dialog language can be selected between German, English or Spanish, or other languages on request.

The **PEL Service** is running as a service under Windows in the background. The time display can be done either in the AM / PM or 24 hour format.

Several PEL can be monitored from a central control center PC.



# Details

## Features Standard System

- maintenance free, fanless embedded PC
- Logger runs in background as Windows service
- Connection of PLC Siemens S7 or compatible (e.g. Yaskawa)
- Communication via TCP/IP with CPx43 interface
- Detection of alarms, messages and data
- Configuration via Excel spreadsheets
- Import and export of data via USB stick
- Auto export at adjustable times to network drive
- Online Host access to production data (SCADA)
- Data export:
  - Alarms, messages and data in chronological order
  - Fault rate
  - Down times
  - Availability consideration of shift times
- Online representation of data (Monitoring)
- Notification system via eMail or SMS
- Language free selectable (texts, labels, dialogs, export files)
- ... and much more

## Extensions, optional

- Production analysis OEE
- Quality assurance QA
- Limit Monitoring
- Audit Trail with user and group management
- Recipe management
- Configurable as HMI solution
- Control of large displays via DISP 3000 system
- Control of display cubes (in connection with the PLC)
- Connection of camera systems
- Custom specific extensions (please contact us) ...

## Computer system

- Fanless embedded PC with TouchPanel 15", IP65 Frontpanel, CPU Intel Atom® to Xeon®, ≥ 4GB RAM
- Industrial SSD drive 250GB or more
- Connections: Mouse, keyboard, 2\* Gigabit LAN, USB 2.0/3.0, VGA, serial RS232/422/485
- Power supply DC 12-30V, operating temperature 0 .. 55° C
- Operating system Windows 10 IoT, LTSC 2019, 64 Bit,
- Database Microsoft SQL Server Express Advanced Edition
- or: nearly every modern custom specific PC (please contact us) ...

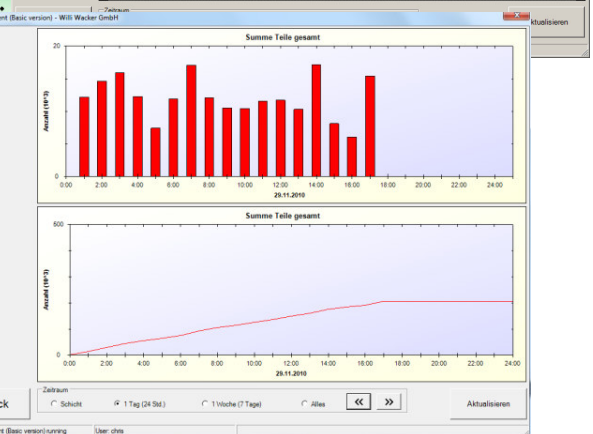
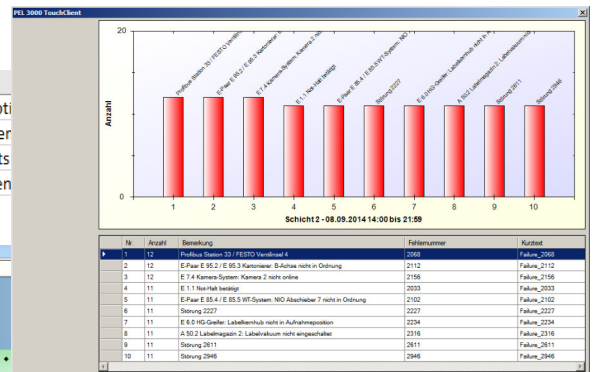


## Analysys: history

Type	PLC	Number	Come	Gone	Name	Description
F	0	PLC00010001002	11.01.2019 08:11:59		Emergency_off_002	emergen
D	0	PLC00020008045	11.01.2019 08:09:03	11.01.2019 08:09:03	OK_parts	OK parts
M	0	PLC00000003877	11.01.2019 08:09:07	11.01.2019 08:09:07	X_Value_0042	X axis en

## Analysys: fault rate

Count	Number	Name	Description
72	PLC0000001015	MS_01	motor overhe
2	PLC0000001017	SI01	security #2
1	PLC0000001018	SI02	security #1



# CMLog

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Examples of graphic representation