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Annex 1

of the

Report to the Certificate

Z10 084596 0002

M6A 084596 0003

Drive System

PLATINIUM LINE

Manufacturer:

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Petach-Tikva 49516
Israel

Report No.: EP95466C-A1
Revision 1.1 of the annex, dated 2021-11-16

Testing Body:

TÜV SÜD Rail GmbH
Generic Safety Systems
Barthstr. 16
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Certification Body:

TÜV SÜD Product Service GmbH
Ridlerstraße 65
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Revision Log

Revision	Name	Date	Changes/History
1.0	K. Leupold	2020-08-07	Initial
1.1	K. Leupold	2021-11-16	2 nd step Platinum EP97595T

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Safety-Certified Hardware and Software Components

The following PLATINIUM LINE system components are covered by Certificate no. Z10 084596 002, M6A 084596 003 and the report to the certificate, report no. EP95466C.

The following system components are certified 'safety-related'. This allows the components to be used to process safety critical signals and functions.

There are different safety functions available, which are listed in the following table:

Abbreviation	Description of Safety Function
STO	Safe Torque Off
SS1	Safe Stop 1
SS2	Safe Stop 2
SBC	Safe Brake Control
SOS	Safe Operating Stop
SLS	Safe Limited Speed
SLP	Safe Limited Position
SLT	Safe Limited Torque
SBT	Safe Brake Test
SLI	Safely-limited increment
SDI	Safe direction
SSM	Safe speed monitor
SCA	Safe cam
SMS	Safe Maximum Speed
SXT	Safe Maximum Torque
SSR	Safe speed range
SAT	Safe Absolute Torque



1 Platinum Drive Single Axis

1.1 Software

item	Safety-Firmware-Version
Safety version	02.00.02.00 B00 02.00.02.02 B03
STO software version	01.00.00.00 B21 01.00.01.01 B00
Primary CPLD Version	X19.2, x22.01
Secondary CPLD Version	X19.2, x22.01
Voltage Monitor Version	01.00.01.00 B02 01.00.01.01 B05

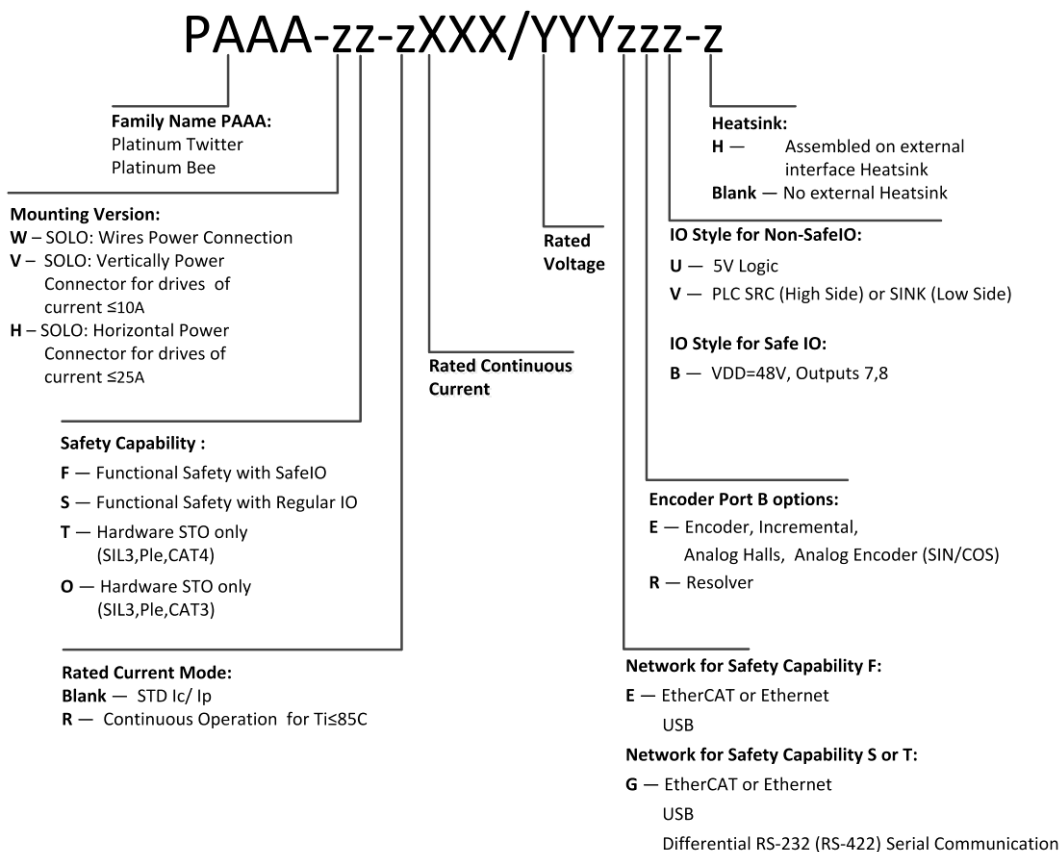
1.2 Hardware

1.2.1 Products up to 200V

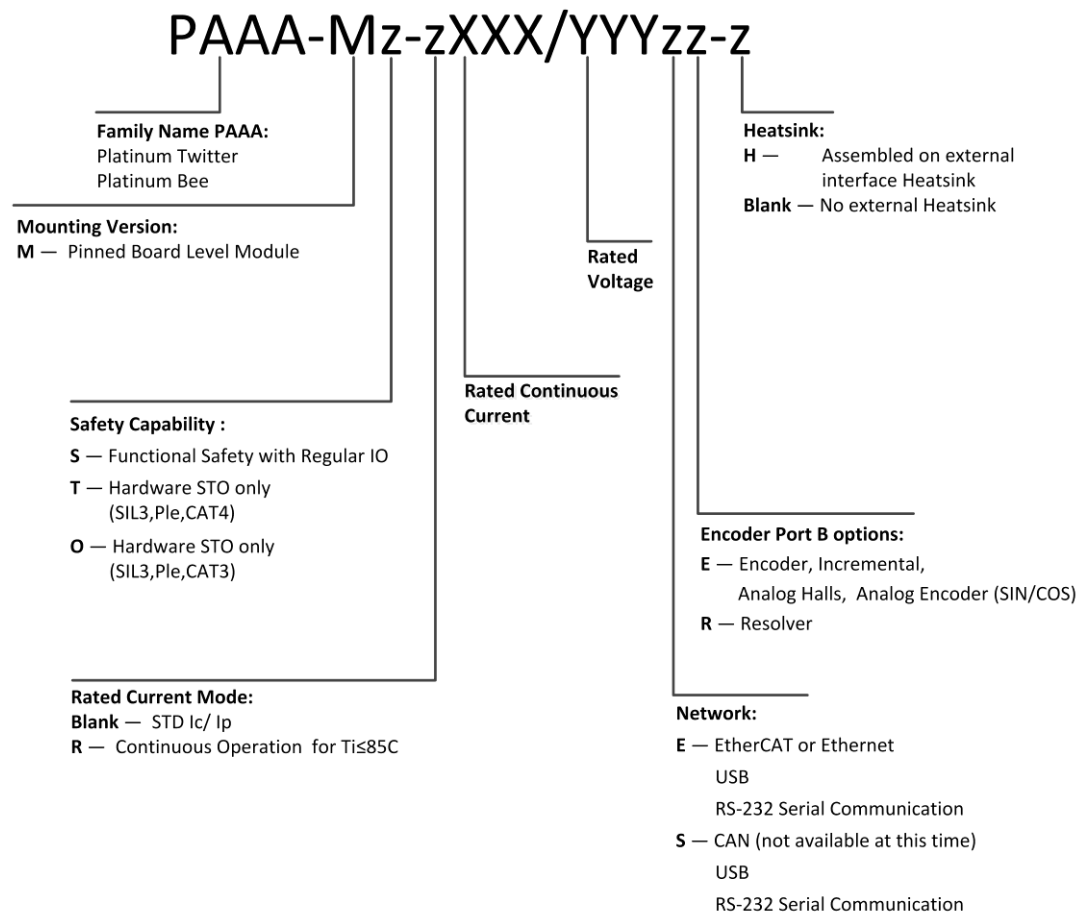
1.2.1.1 Platinum TWI Family

Hardware	Version
CON-PTWI	PCD-DELM084d
LGC-PTWI	PCD-DELM088d-X1
DRV_PTWI	PCD-PELM072b
SIB-PTWI-SAFEIO	PCD-PELM097c

1.2.1.1.1 Platinum Solo TWI/BEE Generic Part Number



1.2.1.1.2 Platinum Module TWI/BEE Generic Part Number



1.2.1.1.3 Current/Voltage Modules

XXX/YYY	30/60	1/100	3/100	6/100	10/100	15/100	25/100
	3/200	6/200	10/200	50/100	R50/60	R80/80	R50/100
	R70/100	R45/150	R15/200	R35/150			



Model Name	Model Part Number
Platinum Twitter	PTWI-MO-zXX/YYYYzzz PTWI-MT-zXX/YYYYzzz PTWI-MS-zXX/YYYYzzz The integration board must be designed and approved according to the safety standards IEC61800-5-2
Platinum Bee	PBEE-MO-zXX/YYYYzzz PBEE-MT-zXX/YYYYzzz PBEE-MS-zXX/YYYYzzz The integration board must be designed and approved according to the safety standards IEC61800-5-2
Platinum SOL Twitter	PTWI-%O-zXX/YYYYzzz PTWI-%T-zXX/YYYYzzz PTWI-%S-zXX/YYYYzzz PTWI-%F-zXX/YYYYzzz %= V, W or H
Platinum SOL Bee	PBEE-%O-zXX/YYYYzzz PBEE-%T-zXX/YYYYzzz PBEE-%S-zXX/YYYYzzz PBEE-%F-zXX/YYYYzzz %= V, W or H

1.2.1.2 Platinum WHI/Bell Family

Hardware	Version
PCON-PWHI	PCD-DELM059h or PCD-DELM059i
CFB-PWHI	PCD-DELM006c
CFB-PBEL	PCD-DELM016c
SAFEIO-PWHI	PCD-DELM500d

1.2.1.2.1 Platinum Module WHI/BELL/HOR Generic Part Number

PAAA-Mz-zXXX/YYYzzz

Family Name PAAA:
Platinum Bell (BEL)
Platinum Whistle (WHI)
Platinum Hornet (HOR)

Mounting Version:
M— Module

Safety Capability :
F — Functional Safety with SafeIO
S — Functional Safety with Regular IO
T — Hardware STO only
(SIL3,Ple,CAT4)
O — Hardware STO only
(SIL3,Ple,CAT3)

Rated Voltage

Rated Continuous Current

Rated Current Mode:
Blank — Standard
R — No peak current

IO Style for Module:

Blank

IO Style for Non-SafeIO:

U — 5V Logic

V — PLC SRC(High Side) or SINK (Low Side)

IO Style for SafeIO:

K — VDD=24V, All Outputs

L — VDD=24V, Outputs 1,2,3,4
VDD=48V, Outputs 7,8

N — VDD=48V, Outputs 7,8

Encoder Port B options:

E — Encoder, Incremental,

Analog Halls, Analog Encoder (SIN/COS)

R — Resolver

Network:

E — EtherCAT or Ethernet

USB

RS-232 Serial Communication

S — CAN (not available at this time)

USB

RS-232 Serial Communication



1.2.1.2.2 Platinum Solo WHI/BELL/HOR Generic Part Number

PAAA-Sz-zXXX/YYYzzz

Family Name PAAA:
Platinum Bell (BEL)
Platinum Whistle (WHI)
Platinum Hornet (HOR)

Mounting Version:
S — SOLO

Safety Capability :

F — Functional Safety with SafeIO
S — Functional Safety with Regular IO
T — Hardware STO only
(SIL3,Plc,CAT4)
O — Hardware STO only
(SIL3,Plc,CAT3)

**Rated
Voltage**

**Rated Continuous
Current**

Rated Current Mode:
Blank — Standard
R — No peak current

IO Style for Module:

Blank

IO Style for Non-SafeIO:

U — 5V Logic
V — PLC SRC(High Side) or SINK (Low Side)

IO Style for SafeIO:

K — VDD=24V, All Outputs
L — VDD=24V, Outputs 1,2,3,4
VDD=48V, Outputs 7,8
N — VDD=48V, Outputs 7,8

Encoder Options For Safety Capability F, S, T and O:

E — Port A: Standard

Incremental, Endat2.2 BISS, SSI, Safe Endat2.2, Safe BISS

Port B: Standard

Incremental, SINCOS

Port C: Standard (4-Wire)

Incremental, all regular ABS Encoder, Safe Endat2.2, Safe BISS

R — Standard Port A & C

Port B: Incremental, Resolver

Encoder Options for Safety Capability F Only:

H — Standard Port A & B

Port C: 2-Wire Safe Endat3

1 — Standard Port A & B

Port C: 4-Wire Acuro

2 — Standard Port A & B

Port C: 4-Wire SCS

3 — Standard Port A & B

Port C: 2-Wire SCS

4 — Standard Port A & B

Port C: 2-Wire DSL

Network for Safety Capability F, or S:

F — EtherCAT with Switches or Ethernet
USB

Network for Safety Capability T or O:

F — EtherCAT with Switches or Ethernet
USB

S — CAN (available within the near future)
USB

RS-232

T — CAN + RS-422 Serial Communication (Differential RS-232)
(available within the near future)
USB

RS-422 Serial Communication (Differential RS-232)



1.2.1.2.3 Current/Voltage Modules

XXX/YYY	1/100	2.5/100	5/100	10/100	15/100	20/100	25/100
	3/200	6/200	9/200	10/200			

Model Name	Model Part Number
Platinum Whistle	PWHI-MO-zXX/YYYzzz PWHI-MT-zXX/YYYzzz PWHI-MS-zXX/YYYzzz PWHI-MF-zXX/YYYzzz The integration board must be designed and approved according to the safety standards IEC61800-5-2
Platinum Hornet	PHOR-MO-zXX/YYYzzz PHOR-MT-zXX/YYYzzz PHOR-MS-zXX/YYYzzz PHOR-MF-zXX/YYYzzz The integration board must be designed and approved according to the safety standards IEC61800-5-2
Platinum Bell	PBEL-MO-zXX/YYYzzz PBEL-MT-zXX/YYYzzz PBEL-MS-zXX/YYYzzz PBEL-MF-zXX/YYYzzz The integration board must be designed and approved according to the safety standards IEC61800-5-2
Platinum SOL Whistle	PWHI-SO-zXX/YYYzzz PWHI-ST-zXX/YYYzzz PWHI-SS-zXX/YYYzzz PWHI-SF-zXX/YYYzzz
Platinum SOL BELL	PBEL-SO-zXX/YYYzzz PBEL-ST-zXX/YYYzzz PBEL-SS-zXX/YYYzzz PBEL-SF-zXX/YYYzzz



1.2.1.3 Platinum Harmonica Family

PHAR-Bz-zXXX/YYYzzz Motor type supported Stepper (2Ph) and BLDC (3Ph)

Hardware	Version
P-BELL	
INT-PHAR	PCD-MELM003e

PHAR-Tz-zXXX/YYYzzz Motor type supported BLDC (3Ph)

Hardware	Version
P-TWI	
INT-PHAR	PCD-MELM004c



1.2.1.3.1 Platinum Harmonica Generic Part Number

PHAR-zz-zXXX/YYYzzz

Family Name:

Platinum HARMonica

Motor Type Supported:

B — Stepper (2Ph) & BLDC (3Ph)
T — BLDC (3Ph),
 High Current (HC)

**Rated
Voltage**

IO Style for Regular IO:

U — 5V Logic
V — PLC SRC (High Side) or SINK (Low Side)

IO Style for SafeIO:

K — VDD=24V, All Outputs
L — VDD=24V, Outputs 1,2,3,4
 VDD=48V, Outputs 7,8
N — VDD=48V, Outputs 7,8

Safety Capability :

F — Functional Safety with SafeIO
S — Functional Safety with Regular IO
O — Hardware STO only
 (SIL3,Plc,CAT3)

**Rated Continuous
Current**

Rated Current Mode:

Blank — STD Ic/ Ip
R — Continuous Operation
 for $T_i \leq 85^\circ \text{C}$

Encoder Options For Safety Capability F, S, and O:

E — Port A: Standard

Incremental, Endat2.2 BISS, SSI, Safe Endat2.2, Safe BISS

Port B: Standard

Incremental, SINCOS

Port C: Standard (4-Wire)

Incremental, all regular ABS Encoder, Safe Endat2.2, Safe BISS

R — Standard Port A & C

Port B: Incremental, Resolver

Encoder Options for Safety Capability F Only:

H — Standard Port A & B

Port C: 2-Wire Safe Endat3

1 — Standard Port A & B

Port C: 4-Wire Acuro

2 — Standard Port A & B

Port C: 4-Wire SCS

3 — Standard Port A & B

Port C: 2-Wire SCS

4 — Standard Port A & B

Port C: 2-Wire DSL

Network for Safety Capability F, or S:

F — EtherCAT with Switches or Ethernet
 USB

Network for Safety Capability O:

F — EtherCAT with Switches or Ethernet
 USB

S — CAN (available within the near future)
 USB
 RS-232



1.2.1.3.2 Current/Voltage Modules for Motor Type B

XXX/YYY	1/100	2.5/100	5/100	10/100	15/100	20/100	25/100
	3/200	6/200	9/200	10/200			

1.2.1.3.3 Current/Voltage Modules for Motor Type T

XXX/YYY	30/60	1/100	3/100	6/100	10/100	15/100
	25/100	35/100	50/100	R50/60	R50/100	R45/150
	R15/200	R35/200	3/200	6/200	10/200	

Model Name	Model Part Number
Platinum Harmonica	PHAR-%F-zXX/YYYzzz PHAR-%S-zXX/YYYzzz PHAR-%O-zXX/YYYzzz %= B or T

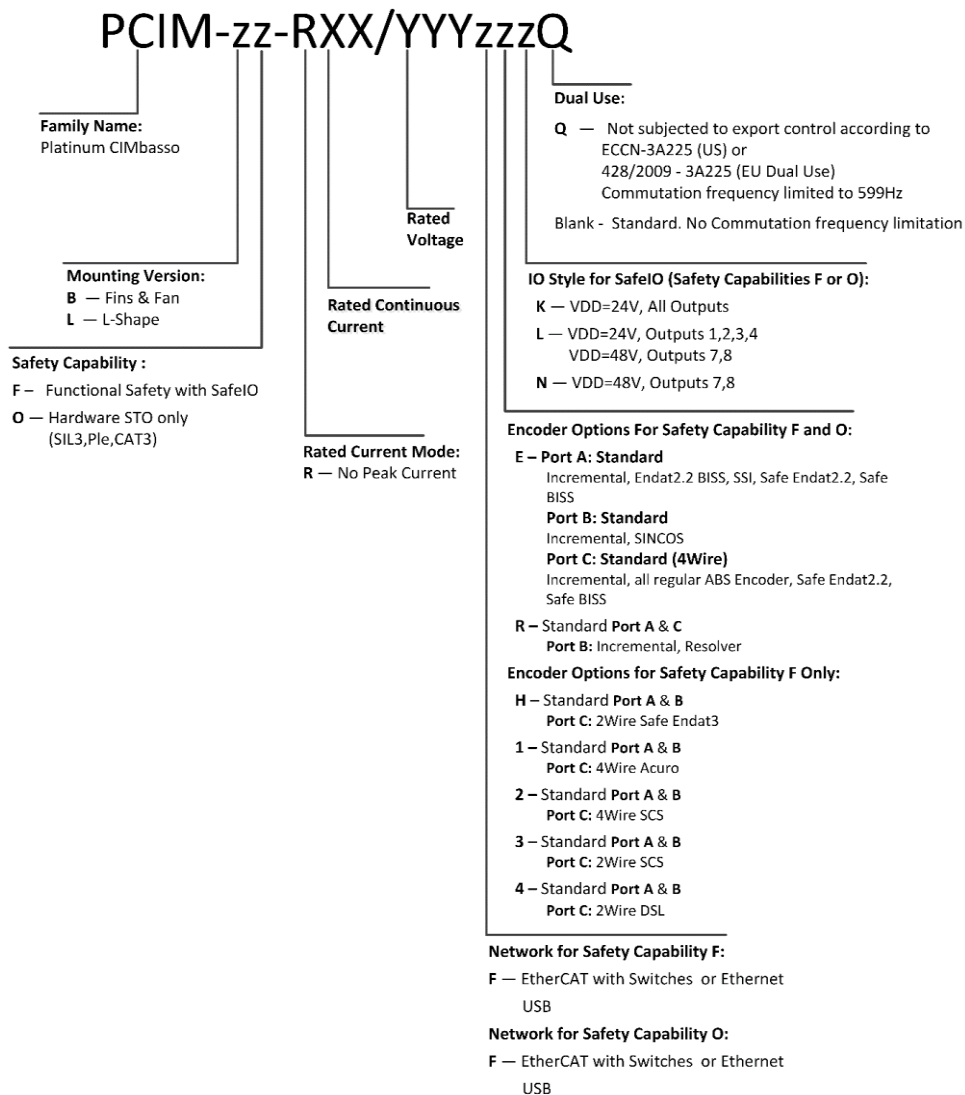


1.2.2 High Voltage Products

1.2.2.1 Platinum Cimbasso (800V)

Hardware	Version
PCON-PWHI	PCD-DELM059i
INT_PCIM	PCD-PELM115c

1.2.2.1.1 Platinum Cimbasso Generic Part Number





1.2.2.1.2 Current/Voltage Modules

XXX/YYY	R8/800	R16/800	R25/800	R50/800
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Model Name	Model Part Number
Platinum Cimbasso	PWHI-zO-zXX/YYYzzz PWHI-zF-zXX/YYYzzz



2 Platinum Quartet Family Four Axes – STO Only

2.1 Software

item	Safety-Firmware-Version
STO software version	01.00.01.01 B00
Primary CPLD Version	x2.1
Secondary CPLD Version	x10.1
Voltage Monitor	01.00.00.02 B04

2.2 Hardware

2.2.1 Products up to 200V

Platinum Quad		
Model Name	Board Type	Boards Version
Platinum Quad	PQUA-M	
	CON-PQUA	PCD- DELM096c
Platinum Bee Quad	PBEQ-M	
	CON-PQUA	PCD- DELM096c
Platinum SOLO Quad	PQUA-S	
	CON-PQUA	PCD- DELM096c
	SIB- PQUA	PCD-DELM501E-R1
Platinum SOLO Bee Quad	PBEQ-S	
	CON-PQUA	PCD- DELM096c
	SIB- PQUA	PCD-DELM501E-R1

Munich, 2021-11-16

TÜV SÜD Rail GmbH
Rail Automation

M. Ramold
Technical Certifier