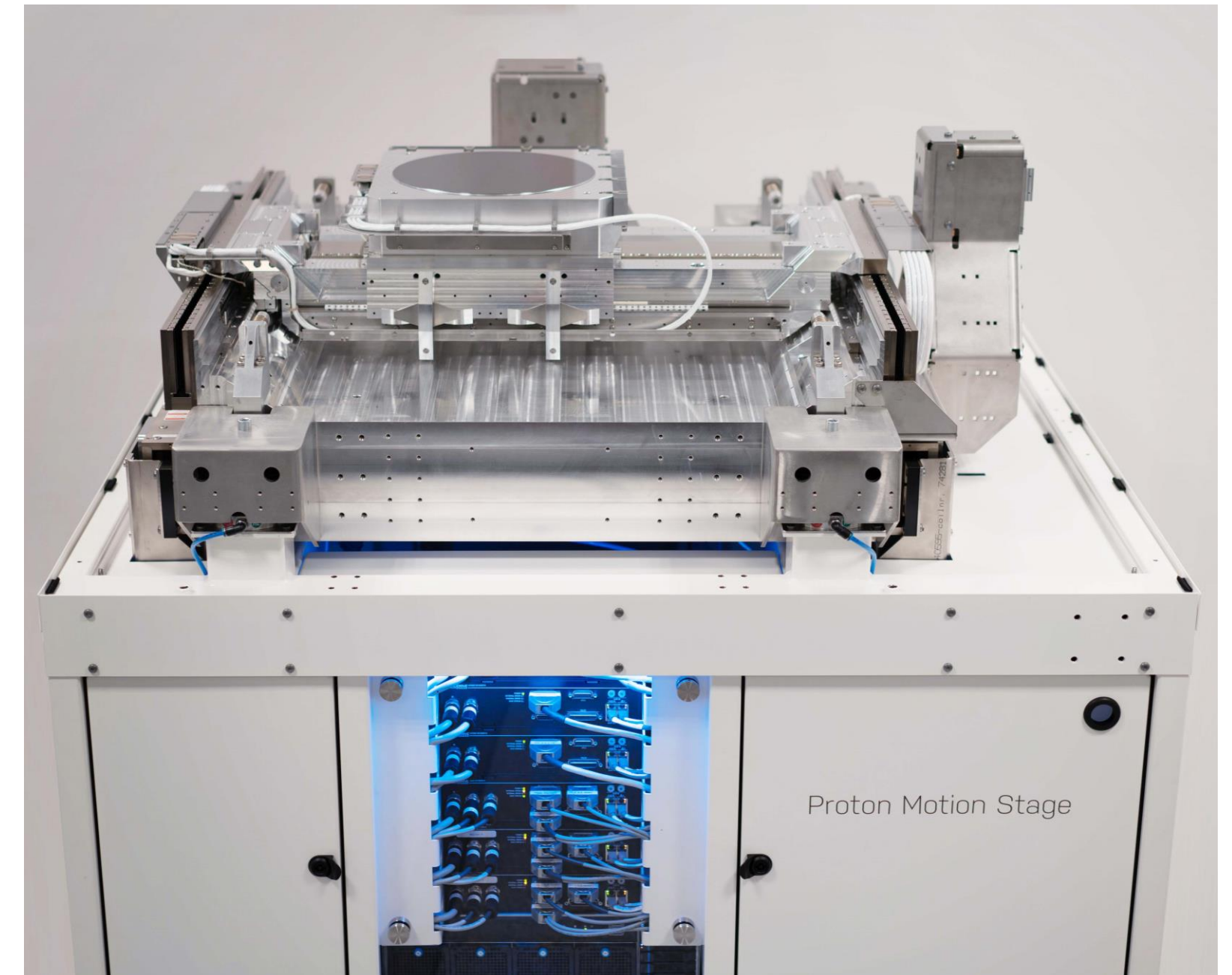




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Proton Motion Stage with Poseidon motion controller

Knowledge

Renowned for our expertise in industrial motion control, our company excels in designing and manufacturing cutting-edge controllers. With a deep understanding of control systems, robotics, and customer needs, we ensure optimal performance and reliability.

Quality

Quality is in the DNA of Prodrive Technologies. Crafted with precision engineering and rigorous testing, they ensure reliability, efficiency, and seamless integration, setting new standards in industrial automation.

Automation

Prodrive Technologies employs highly automated processes such as robotic assembly lines and CNC machining with advanced motion control, and automated testing systems. These processes enhance efficiency, precision, and scalability in manufacturing high-tech electronic and mechanical products.

Time to market

Due to the agility of Prodrive Technologies' large development department, customization can be performed in a very short time, providing a short time to market for challenging mechatronic applications.



Prodrive Technologies HQ Campus, The Netherlands

OVERVIEW – MOTION CONTROLLERS



Arcas

ARM-based embedded control solution for EtherCAT® motion control networks with up to 12 axes at 10kHz¹.



Poseidon CFL

x86-based powerful control solution for EtherCAT® based motion control networks with up to 28 axes at 20kHz¹

¹) number of axes based on standard PID feedback control with feedforward

Introducing the Arcas Motion Controller—a beacon of exceptional performance seamlessly packed into a compact form factor. Designed to meet the demands of motion-intensive applications, this controller excels with precision, offering control for up to 12 axes at an impressive 10kHz.

Setting new standards, the Arcas motion controller effortlessly supports high-performance EtherCAT® drives, ensuring a seamless integration into advanced motion systems.

Built to endure, the Arcas stands out as the ideal choice for applications demanding longevity. With a robust commitment to support, it boasts an extended lifecycle of over 10 years, guaranteeing reliability and continuity for your evolving needs. Elevate your motion control experience with the unparalleled capabilities of the Arcas motion controller.

- Quad-core ARM processor @ 1.5GHz
 - Up to 12 axes @ 10kHz
 - More axes at lower update frequencies
- Connectivity
 - 1x Gigabit Ethernet host interface
 - 1x EtherCAT® MDevice bus
- I/O
 - 4x 24V digital inputs
 - 4x 24V digital outputs
 - 2x High-speed differential outputs for position based triggering
- Panel or DIN rail mounting



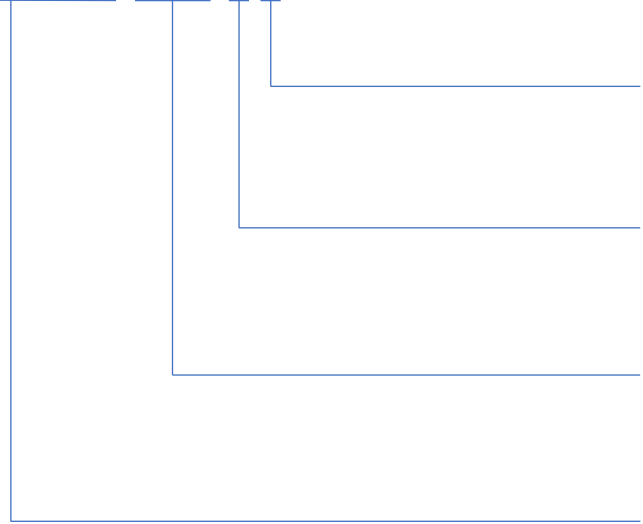
Arcas motion controller

ARCAS LINE - FEATURES



Arcas Motion Controller

PMP-Arcas-5EG-AA



- Storage configuration:
 - A 1x 512Mb flash memory
- Memory configuration:
 - A 1x 8Gb LPDDR4
- Processor type:
 - 5EG Xilinx Zynq UltraScale+
- Controller series

Configuration	Prodrive Product Number
PMP-Arcas-5EG-AA	6001-2011-2501

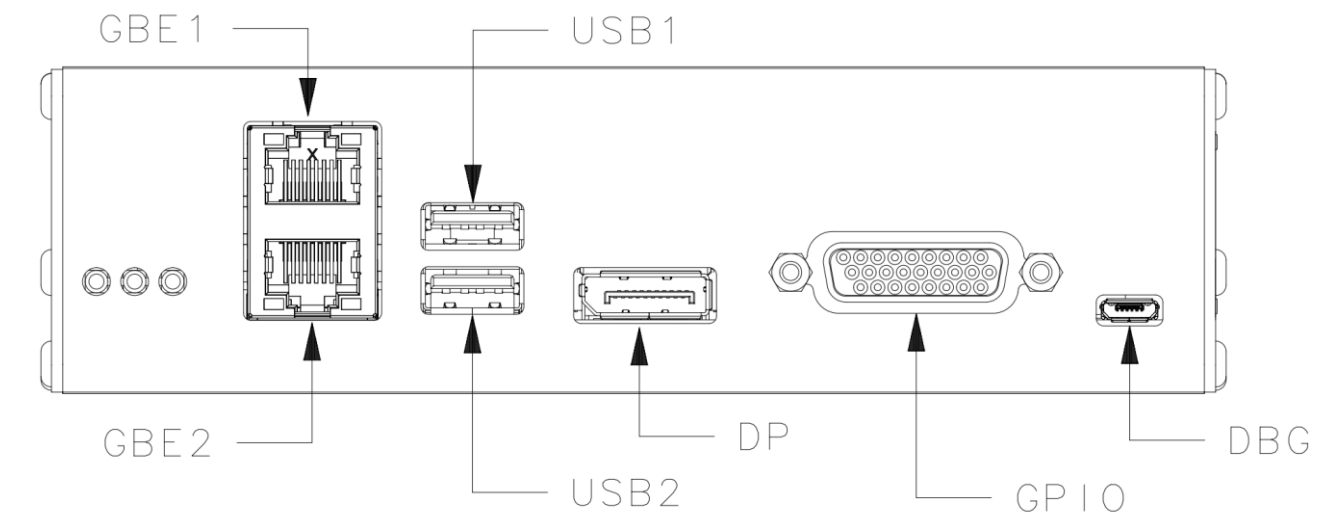
Arcas order information

ARCAS LINE – INTERFACE SPECIFICATIONS

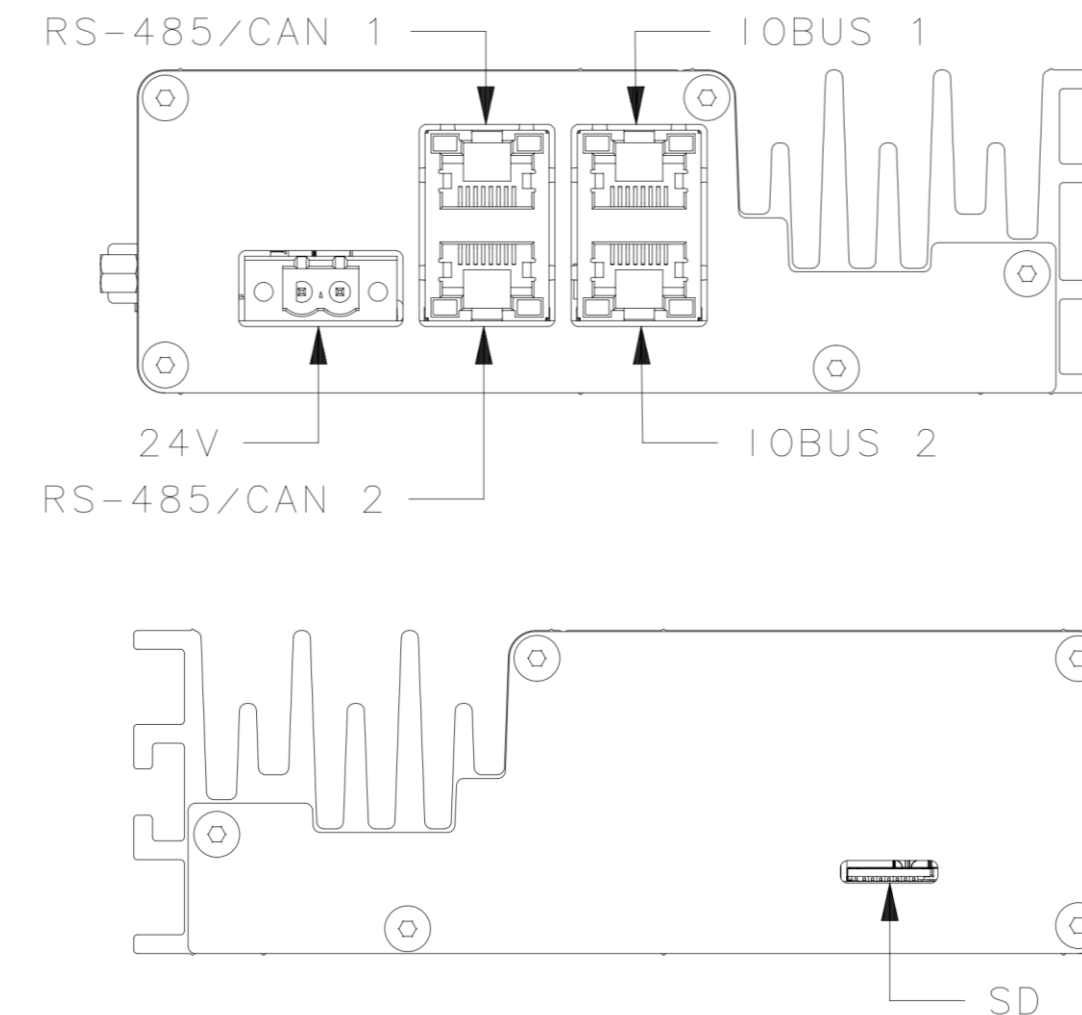
	Parameter	Symbol	Unit	Arcas 5EG	Remark
GBE1	Interface specification	-	-	Host interface	
	Speed	-	Mbps	10/100/1000	
GBE2	Type	-	-	EtherCAT® MDevice interface	
	Speed	-	Mbps	10/100/1000	Set to 100Mbps for EtherCAT® communication
USB	Number of interfaces	-	-	2	
	Type	-	-	USB 3.0	Used for mass storage devices
	Rated current	-	A	2	Combined for both USB interfaces
RS485	Number of interfaces	-	-	2	Used for position based triggering
	Interface specification	-	-	TIA/EIA-485A	
	Communication speed	-	Mbps	up to 50	
GPIO	Isolated digital inputs	-	-	4 x 24V	($V_{IH} \geq 11V$, $V_{IL} \leq 5V$, $I_{IN} < 15mA$)
	Non-isolated digital outputs	-	-	4 x 30V / 500mA	
	Electrical isolation	-	V	60	
microSD	Number of interfaces	-	-	1	High Speed mode supported
24V	Supply input voltage	V_{SUPPLY}	V	12 - 24	
	Supply input voltage, abs. max	$V_{SUPPLY_ABS_MAX}$	V	28	
	Idle power	P_{SUPPLY_IDLE}	W	7	
	Maximum input power	P_{SUPPLY_MAX}	W	35	

Note: CAN, IOBUS, DisplayPort and DBG are intended only for Prodrive Technologies proprietary usage

Arcas front

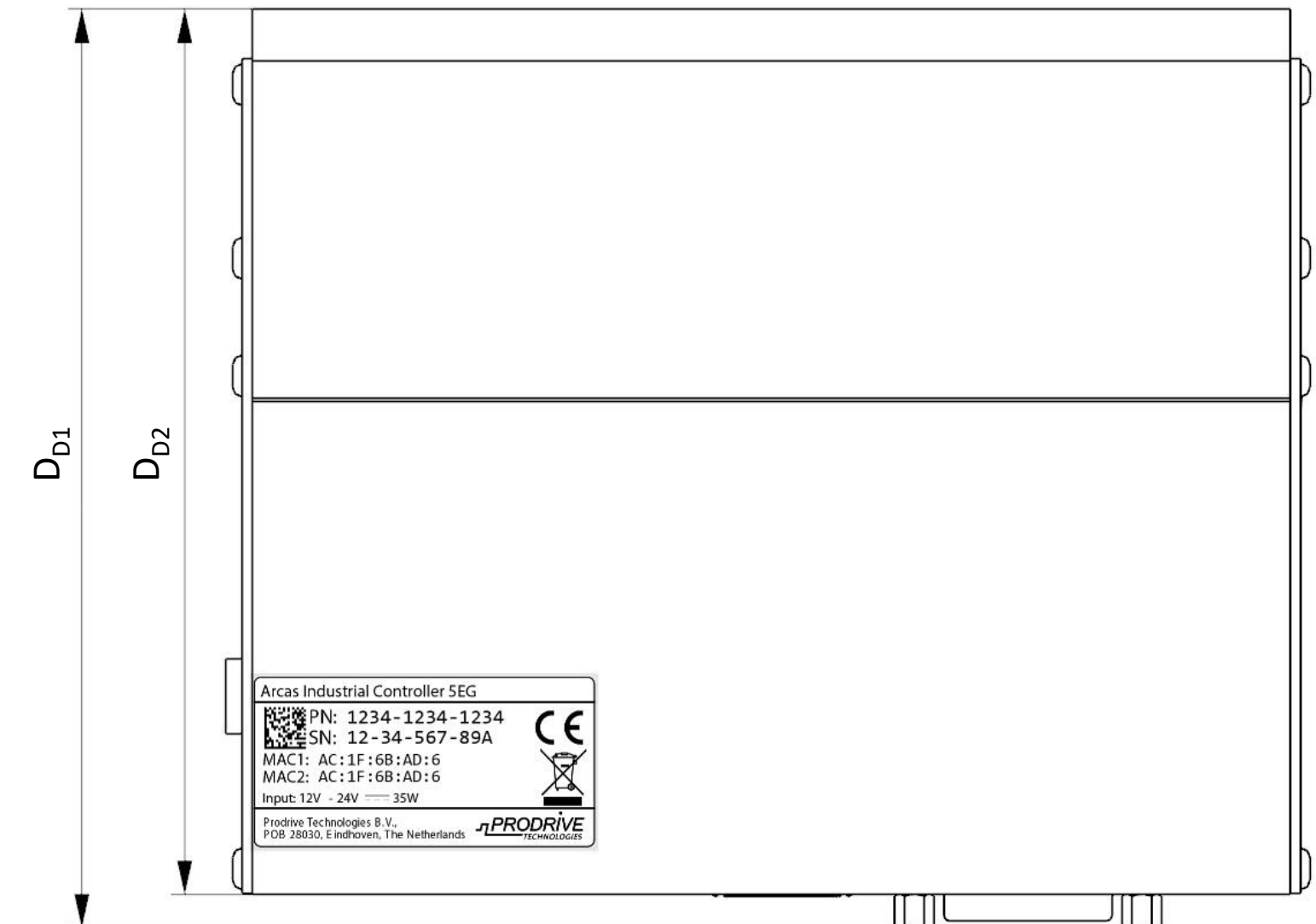


Arcas side

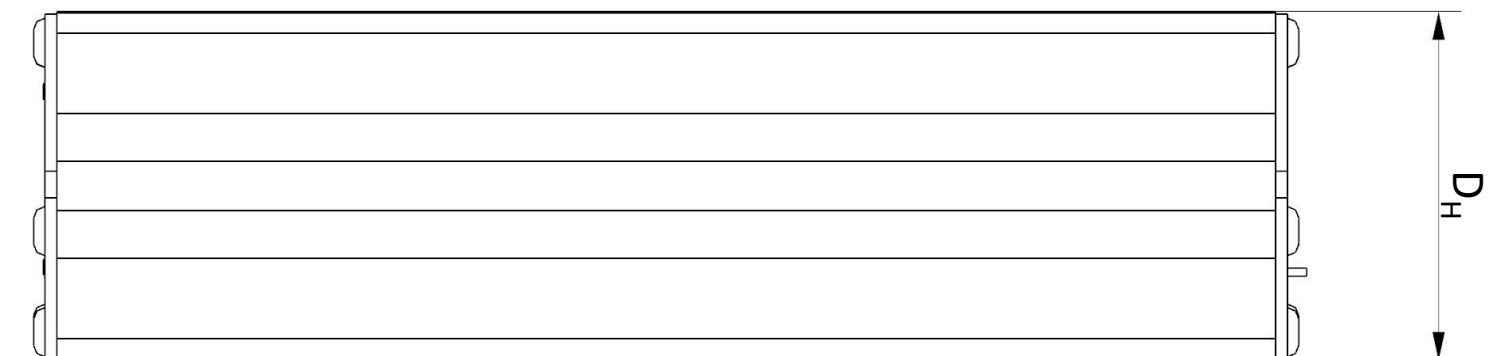
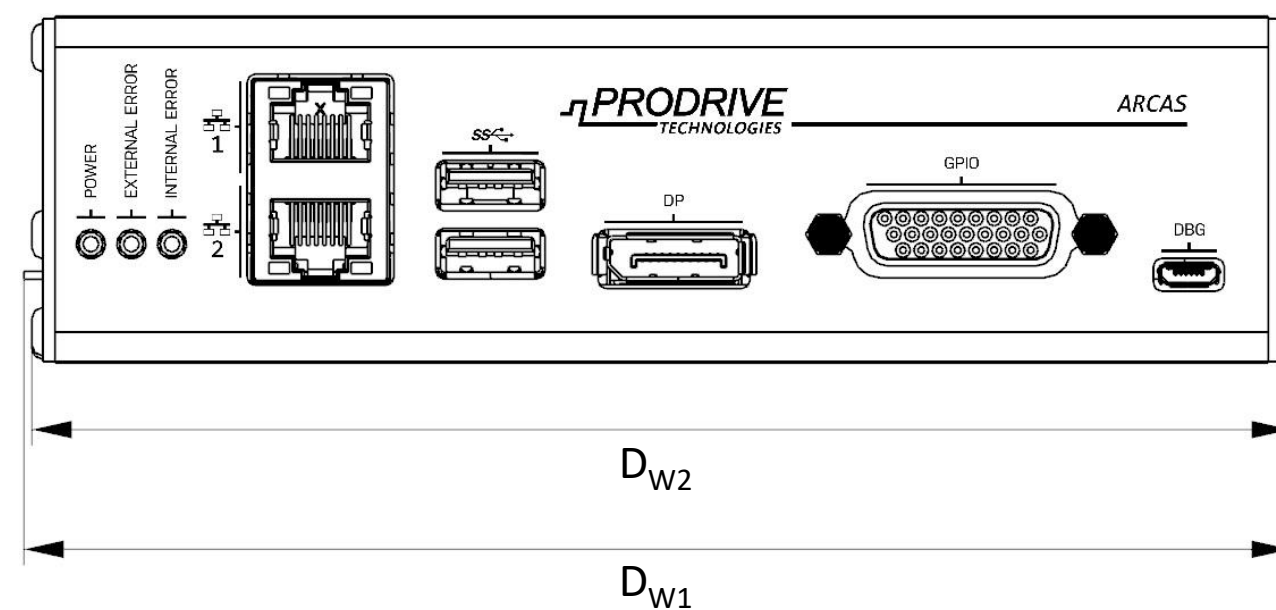


ARCAS LINE – MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

	Parameter	Symbol	Unit	Arcas 5EG	Remark
Mechanical	Width	D_{W1}	mm	158.80	MicroSD card connected
		D_{W2}	mm	157.80	
	Depth	D_{D1}	mm	134.55	Including GPIO connector
		D_{D2}	mm	129.65	
	Height	D_H	mm	43.40	
Mass	mass	kg	0.83		
Environmental	Ambient temperature during operation	$T_{Ambient, operating}$	°C	0 - 45	Note 1, 2, 3
	Ambient temperature during storage	$T_{Ambient, storage}$	°C	-25 - 70	
	Relative humidity during operation	$RH_{Ambient, operating}$	%	10 - 90	Non-condensing
	Relative humidity during storage	$RH_{Ambient, storage}$	%	10 - 95	Non-condensing
	Altitude during operation	$Alt_{operating}$	m	0 - 5000	
	MTBF	MTBF	kHrs	>1000	Steady state mean time between failures
Directives	Electromagnetic Compatibility	-	-	EMC Directive 2014/30/EU	
	Low Voltage	-	-	LV Directive 2014/35/EU	
	Restriction of Hazardous Substances	-	-	RoHS Directive 2011/65/EU	
	Waste Electrical and Electronic Equipment	-	-	WEEE Directive 2012/19/EU	
	Registration, Evaluation, Authorisation and Restriction of Chemicals	-	-	REACH EC 1907/2006	
Standards	Safety	-	-	IEC 62368-1	DEKRA certified Includes national deviations for EU, US/Canada and China
	Electromagnetic Compatibility (Immunity)	-	-	IEC 60001-6-1	
	Electromagnetic Compatibility (Emissions)	-	-	EN 55011	
	Shock & Vibration	-	-	IEC 60068-2-27	



Note 1: Operating temperature derating is reduced by 1[°C]/300m above 1000m



POSEIDON CFL LINE

Introducing the Poseidon CFL Motion Controller series — a peak of unparalleled performance designed to master the challenges of the most demanding motion applications.

The Poseidon CFL facilitates synchronized control across all available EtherCAT® buses, offering the flexibility to allocate individual buses for distinct sections of a single machine or to enable low-latency control of individual connected EtherCAT® devices.

Tailored to meet the stringent requirements of the medical and semiconductor industries, the Poseidon CFL Motion Controller stands out with its extended lifecycle support, ensuring reliability and continuity for applications with enduring demands. Elevate your precision control experience with the Poseidon CFL — a testament to exceptional performance and longevity.

- Up to 8 core x86 processor @ 3.3GHz
 - Up to 28 axes @ 20kHz
 - Up to 70 axes @ 10kHz
 - More axes at lower update frequencies
- Connectivity
 - 1x Gigabit Ethernet host interface
 - Up to 15 synchronized EtherCAT® MDevice buses
- 19" rack mounting
- Front or rear connectivity options



Poseidon CFL motion controller

POSEIDON CFL LINE - FEATURES

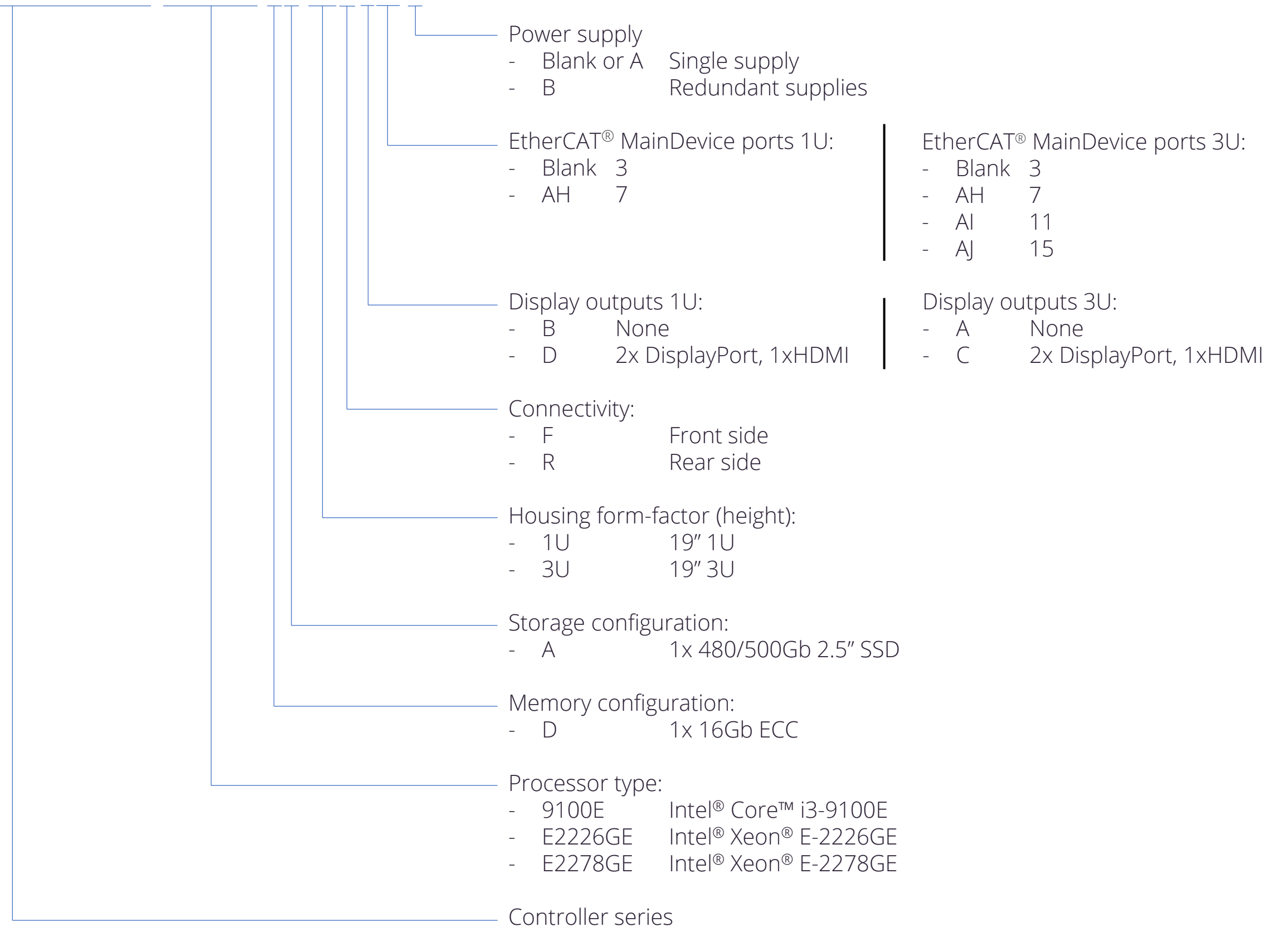


Poseidon CFL motion controller

PMP-Poseidon-CFL-C246-1S-E2278GE-DA-3UR-AAI-A

Configuration	Prodrive Product Number
PMP-Poseidon-CFL-C246-1S-9100E-DA-1UF-B	7001-2217-3500
PMP-Poseidon-CFL-C246-1S-9100E-DA-1UF-D	7001-2200-9900
PMP-Poseidon-CFL-C246-1S-E2278GE-DA-3UF-AAI-A	7001-2217-3600

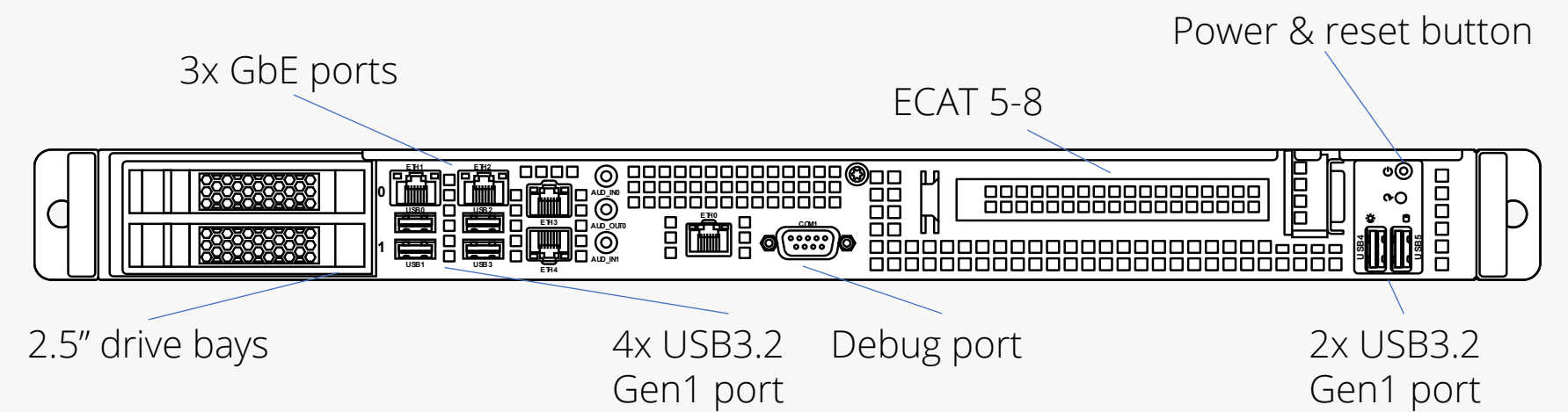
PMP Poseidon CFL order information for preferred configurations
 Note: Other configurations are possible with longer leadtime



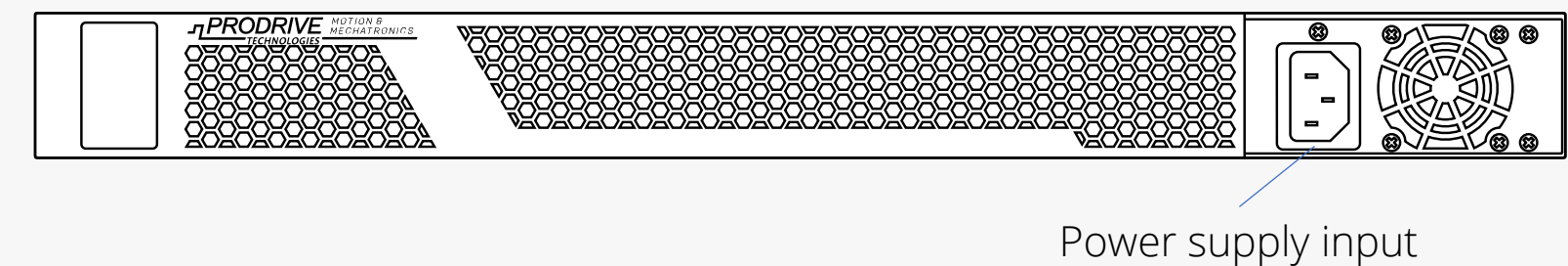
POSEIDON CFL LINE – 1U – INTERFACES SPECIFICATIONS

	Parameter	Symbol	Unit	Poseidon 1U	Remark
GBE	Interface 1				
	Type	-	-	Host interface	
	Speed	-	Mbps	10/100/1000	
ECAT	Interface 2 - 4				
	Type	-	-	EtherCAT® Mdevice interface	Available for all 1U configurations
	Speed	-	Mbps	10/100/1000	
	Interface 5 - 8				
	Type	-	-	EtherCAT® Mdevice interface	Available only for specific 1U configurations (See "Configurations" page)
USB	Interface 0 - 3				
	Type	-	-	USB 3.2 Gen 1	Used for mass storage devices
	Rated current	-	A	1.8	Per 2x USB 3.2 ports
	Interface 4/5				
	Type	-	-	USB 3.2 Gen 1	Used for mass storage devices
	Rated current	-	A	1.8	Per 2x USB 3.2 ports
Storage	Interface 0				
	Form factor	-	-	2.5"	
	Size	-	Gb	-	See "Configurations" page
Interface 1 - empty					Can be configured on request
DisplayPort	Number of interfaces				
	Compatibility	-	-	Displayport 1.2	Applicable for specific configurations (See "Configurations" page)
	Resolution	-	-	3840x2160	Max
	Frequency	-	Hz	60	Max
HDMI	Dual-Mode				
	Number of interfaces	-	-	1x	Applicable for specific configurations (See "Configurations" page)
	Compatibility	-	-	HDMI 2.0	
Buttons	Resolution	-	-	3840x2160	Max
	Frequency	-	Hz	60.0	Max
	Power button				
Power	Reset button				
	Type	-	-	Single, AC	Configuration specific
	Input voltage low	V _{IN,LOW}	V	90 - 140	SEMI F47 compliant
	Input voltage high	V _{IN,HIGH}	V	180 - 264	SEMI F47 compliant
	Input frequency	F _{IN}	Hz	47 - 63	
	Input current low	I _{IN,LOW}	A	8	Max
Input current high	I _{IN,HIGH}	A	4	Max	

Poseidon CFL 1UF - front



Poseidon CFL 1UF - rear



Note: Debug port is intended only for Prodrive Technologies proprietary usage

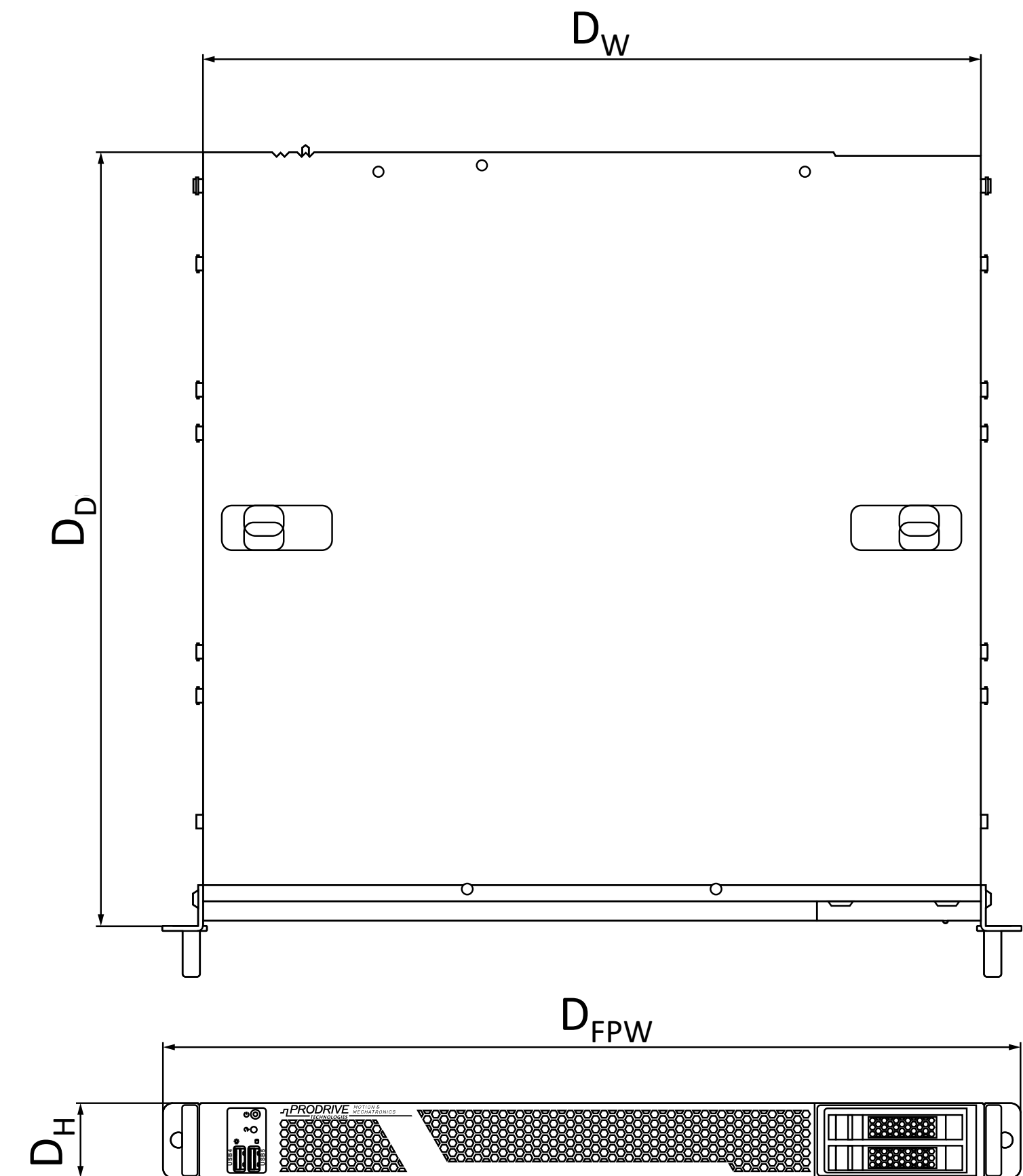
POSEIDON CFL LINE – 1U – MECHANICAL SPECIFICATIONS

	Parameter	Symbol	Unit	Poseidon 1U	Remark
Mechanical	Height	D_H	mm	43.20	
	Front panel width	D_{FPW}	mm	482.50	
	Width	D_W	mm	438.50	
	Depth FIO	D_{DFIO}	mm	412.40	
	Depth RIO	D_{DRIO}	mm	410.50	
Environmental	Ambient temperature during operation	$T_{Ambient, operating}$	°C	0 - 45	Note 1
	Ambient temperature during storage	$T_{Ambient, storage}$	°C	-25 - 70	
	Relative humidity during operation	$RH_{Ambient, operating}$	%	10 - 90	Non-condensing
	Relative humidity during storage	$RH_{Ambient, storage}$	%	10 - 95	Non-condensing
	Air pressure at fan inlet	$P_{Air, inlet}$	kPa	70 - 120	
	Altitude during operation	$Alt_{operating}$	m	0 - 5000	
Directives	Electromagnetic Compatibility	-	-	EMC Directive 2014/30/EU	Note 2
	Low Voltage	-	-	LV Directive 2014/35/EU	Note 2
	Restriction of Hazardous Substances	-	-	RoHS Directive 2011/65/EU	
	Waste Electrical and Electronic Equipment	-	-	WEEE Directive 2012/19/EU	
	Registration, Evaluation, Authorisation and Restriction of Chemicals	-	-	REACH EC 1907/2006	
Standards	Safety	-	-	IEC 62368-1	DEKRA certified Includes national deviations for EU, US/Canada and China
	Electromagnetic Compatibility (Immunity)	-	-	CISPR35	
				EN 55035	
				GB17625.1	
	Electromagnetic Compatibility (Emissions)	-	-	CISPR32	
				EN 55032	
				FCC CFR 47 Part 15 Subpart B	
ICES-003					
Shock & Vibration	-	-	GB / T9254		
			IEC 60068-2-27		

Note 1: Operating temperature derating is reduced by 1[°C]/300m above 1000m

Note 2: For specific applicable standards please consult the sales contact

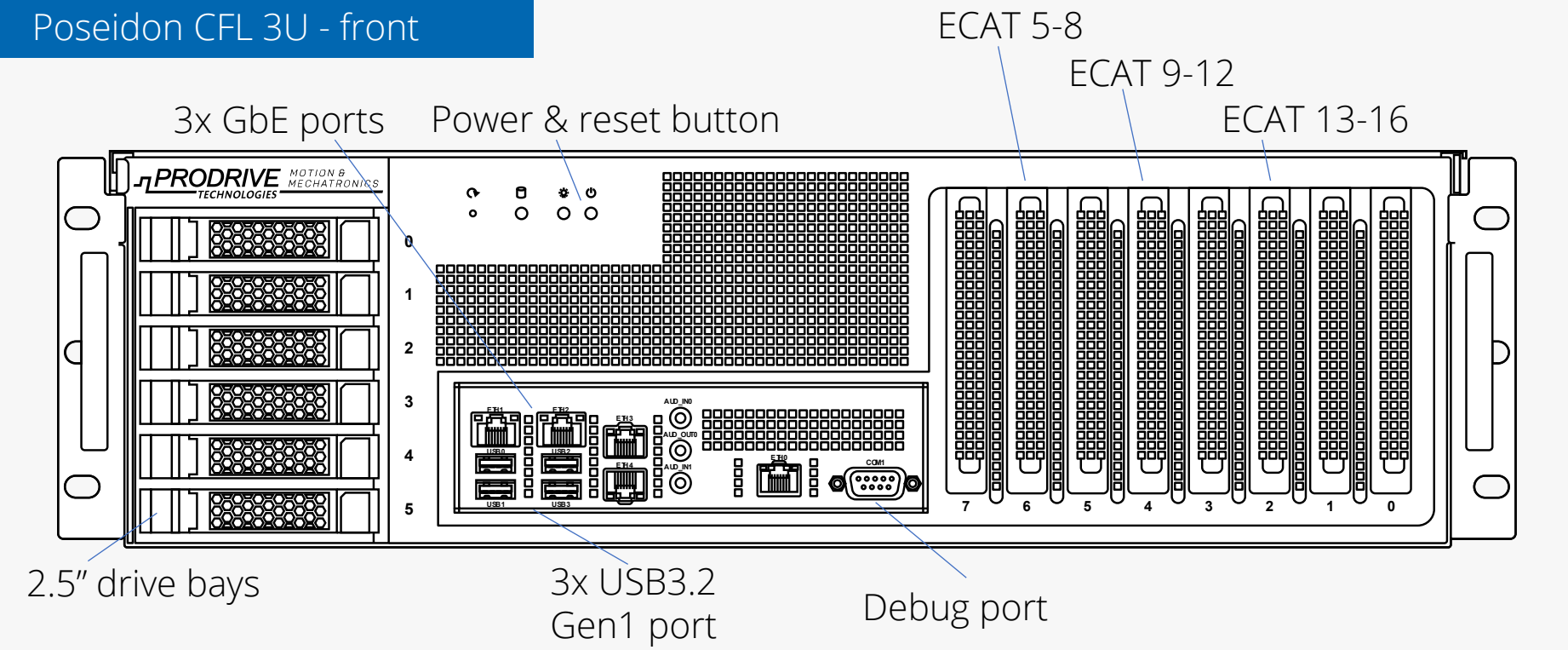
Poseidon CFL 1UR depicted



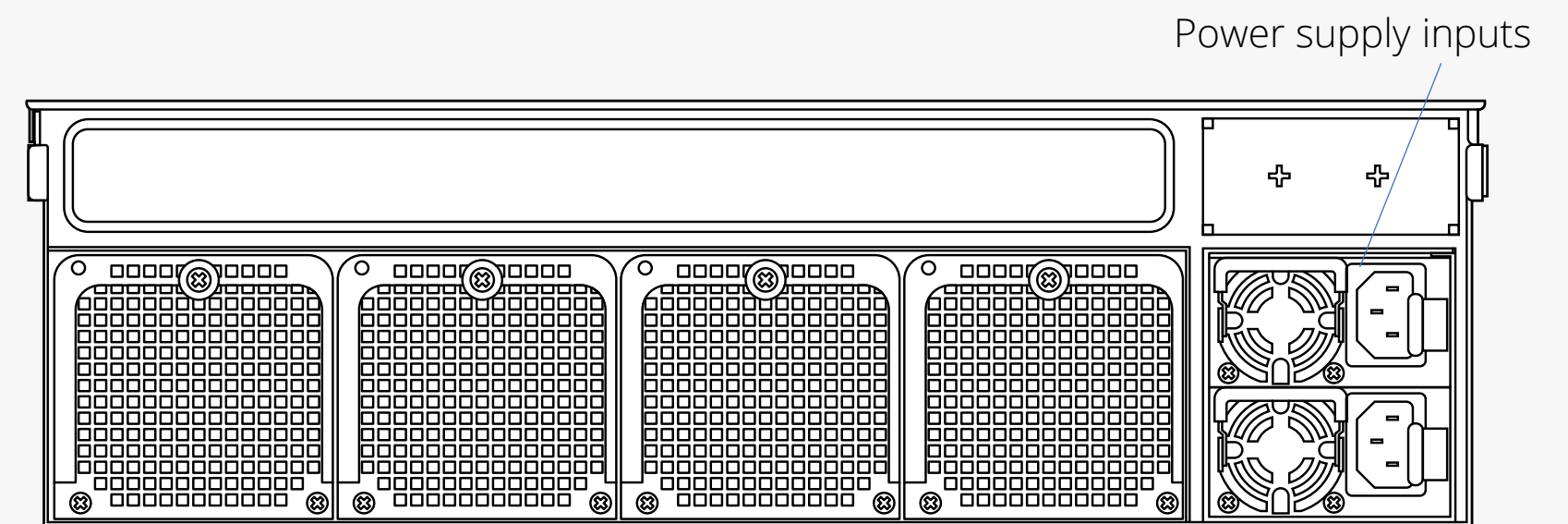
POSEIDON CFL LINE – 3U – INTERFACES SPECIFICATIONS

	Parameter	Symbol	Unit	Poseidon 3U	Remark
GBE	Interface 1				
	Type	-	-	Host interface	
	Speed	-	Mbps	10/100/1000	
ECAT	Interface 2 - 4				Available for all 3U configurations
	Type	-	-	EtherCAT® Mdevice interface	
	Speed	-	Mbps	10/100/1000	
	Interface 5 - 8				Available only for specific 3U configurations (See "Configurations" page)
	Type	-	-	EtherCAT® Mdevice interface	
	Speed	-	Mbps	10/100/1000	
USB	Interface 9 - 12				Available only for specific 3U configurations (See "Configurations" page)
	Type	-	-	EtherCAT® Mdevice interface	
	Speed	-	Mbps	10/100/1000	
	Interface 0 - 3				
	Type	-	-	USB 3.2 Gen 1	Used for mass storage devices
	Rated current	-	A	1.8	per 2x USB 3.2 ports
Display	Number of interfaces	-	-	2x	Applicable for specific configurations (See "Configurations" page)
	Compatibility	-	-	Displayport 1.2	
	Resolution	-	-	3840x2160	Max
	Frequency	-	Hz	60	Max
	Dual-Mode	-	-	DP++	
HDMI	Number of interfaces	-	-	1x	Applicable for specific configurations (See "Configurations" page)
	Compatibility	-	-	HDMI 2.0	
	Resolution	-	-	3840x2160	Max
Storage	Resolution	-	Hz	60	Max
	Interface 0				
	Form factor	-	-	2.5"	
Buttons	Size	-	Gb	-	See "Configurations" page
	Interface 1 - empty				Can be configured on request
Power	Power button	-	-	1x	
	Reset button	-	-	1x	
	Type	-	-	Single, AC	Configuration specific
	Input voltage low	V_{IN_LOW}	V	90 - 140	SEMI F47 compliant
	Input voltage high	V_{IN_HIGH}	V	180 - 264	SEMI F47 compliant
	Input frequency	F_{IN}	Hz	47 - 63	
	Input current low	I_{IN_LOW}	A	8	Max
Input current high	I_{IN_HIGH}	A	4	Max	

Poseidon CFL 3U - front



Poseidon CFL 3U - back



Note: Debug port is intended only for Prodrive Technologies proprietary usage

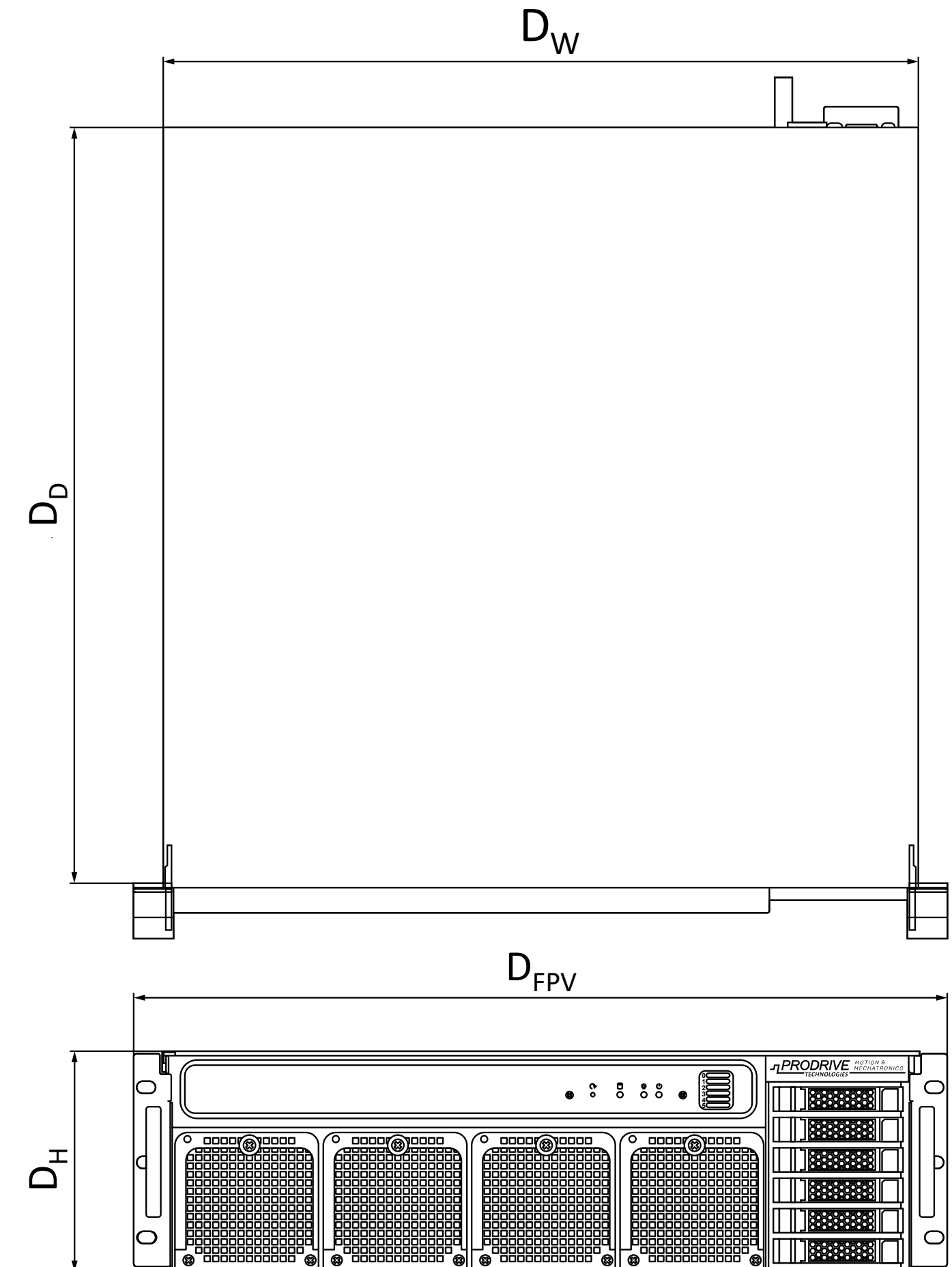
POSEIDON CFL LINE – 3U – MECHANICAL SPECIFICATIONS

	Parameter	Symbol	Unit	Poseidon 3U	Remark
Mechanical	Height	D_H	mm	131.00	
	Front panel width	D_{FPW}	mm	481.60	
	Width	D_W	mm	448.00	
	Depth FIO	D_{DFIO}	mm	451.10	
Environmental	Ambient temperature during operation	$T_{Ambient, operating}$	°C	0 - 45	Note 1
	Ambient temperature during storage	$T_{Ambient, storage}$	°C	-25 - 70	
	Relative humidity during operation	$RH_{Ambient, operating}$	%	10 - 90	Non-condensing
	Relative humidity during storage	$RH_{Ambient, storage}$	%	10 - 95	Non-condensing
	Air pressure at fan inlet	$P_{Air, inlet}$	kPa	70 - 120	
	Altitude during operation	$Alt_{operating}$	m	0 - 5000	
Directives	Electromagnetic Compatibility	-	-	EMC Directive 2014/30/EU	Note 2
	Low Voltage	-	-	LV Directive 2014/35/EU	Note 2
	Restriction of Hazardous Substances	-	-	RoHS Directive 2011/65/EU	
	Waste Electrical and Electronic Equipment	-	-	WEEE Directive 2012/19/EU	
	Registration, Evaluation, Authorisation and Restriction of Chemicals	-	-	REACH EC 1907/2006	
Standards	Safety	-	-	IEC 62368-1	DEKRA certified Includes national deviations for EU, US/Canada and China
	Electromagnetic Compatibility (Immunity)	-	-	CISPR35	
				EN 55035	
				GB17625.1	
	Electromagnetic Compatibility (Emissions)	-	-	CISPR32	
				EN 55032	
FCC CFR 47 Part 15					
ICES-003 GB / T9254					
Shock & Vibration	-	-	-	IEC 60068-2-27	

Note 1: Operating temperature derating is reduced by 1[°C]/300m above 1000m

Note 2: For specific applicable standards please consult the sales contact

Poseidon CFL 3UR depicted



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