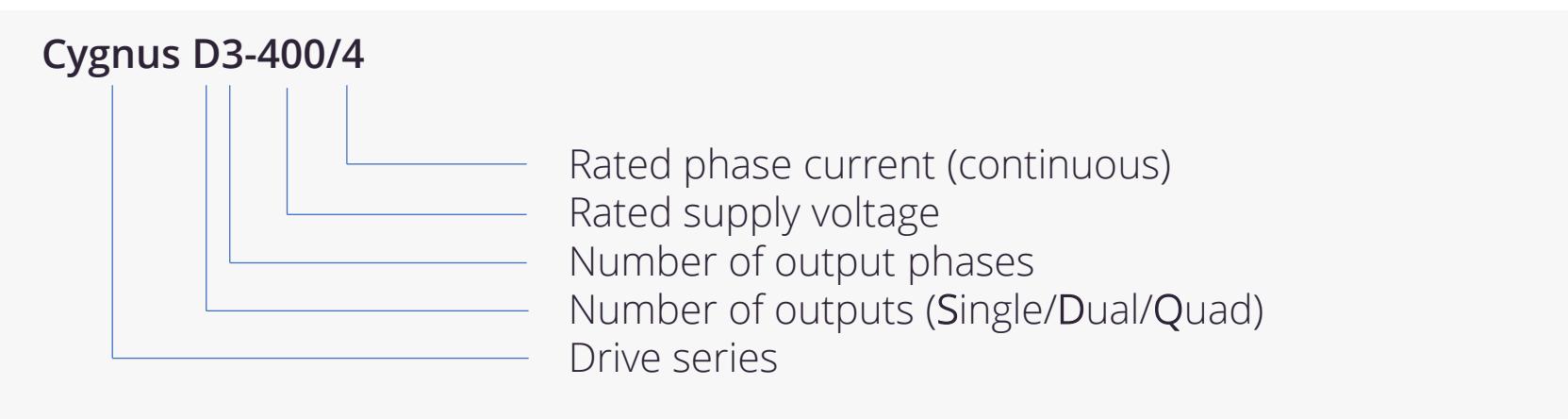
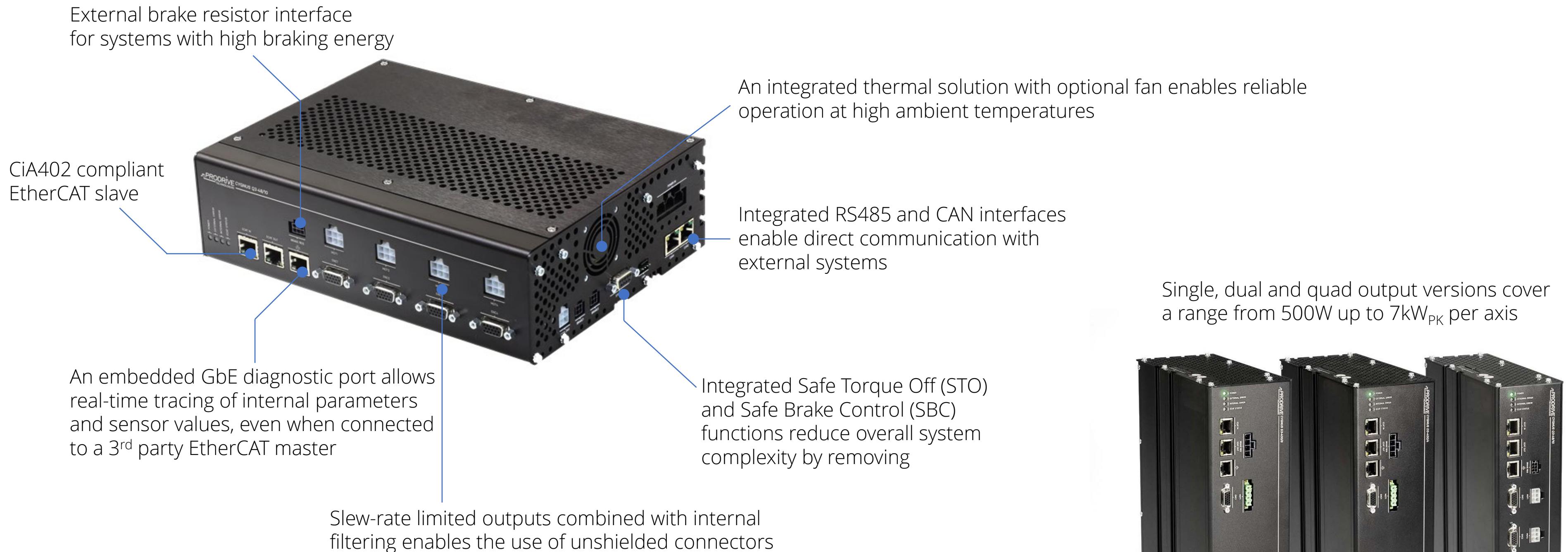




Cygnus motor drives come with a powerful integrated motion controller and a wide range of connectivity options. This makes the Cygnus the ideal choice for many applications. Due to its integrated input / output filtering, the Cygnus can operate with a minimal number of external components. The drive can be commanded via Ethernet or by using the CiA402 compatible EtherCAT interface. The Cygnus drives make use of the programmable Prodrive Motion Platform (PMP). PMP is a highly flexible platform which is currently used across multiple industries. The motion controller can be integrated in the most demanding systems via the powerful Motion API (C++/C#). Custom real-time code can be deployed via Simulink code generation. The PMP tooling ensures fast and effortless commissioning by offering advanced signal tracing capabilities and a fully customizable HMI interface.



CYGNUS LINE – FEATURES



Cygnus Q3-48/10, overview



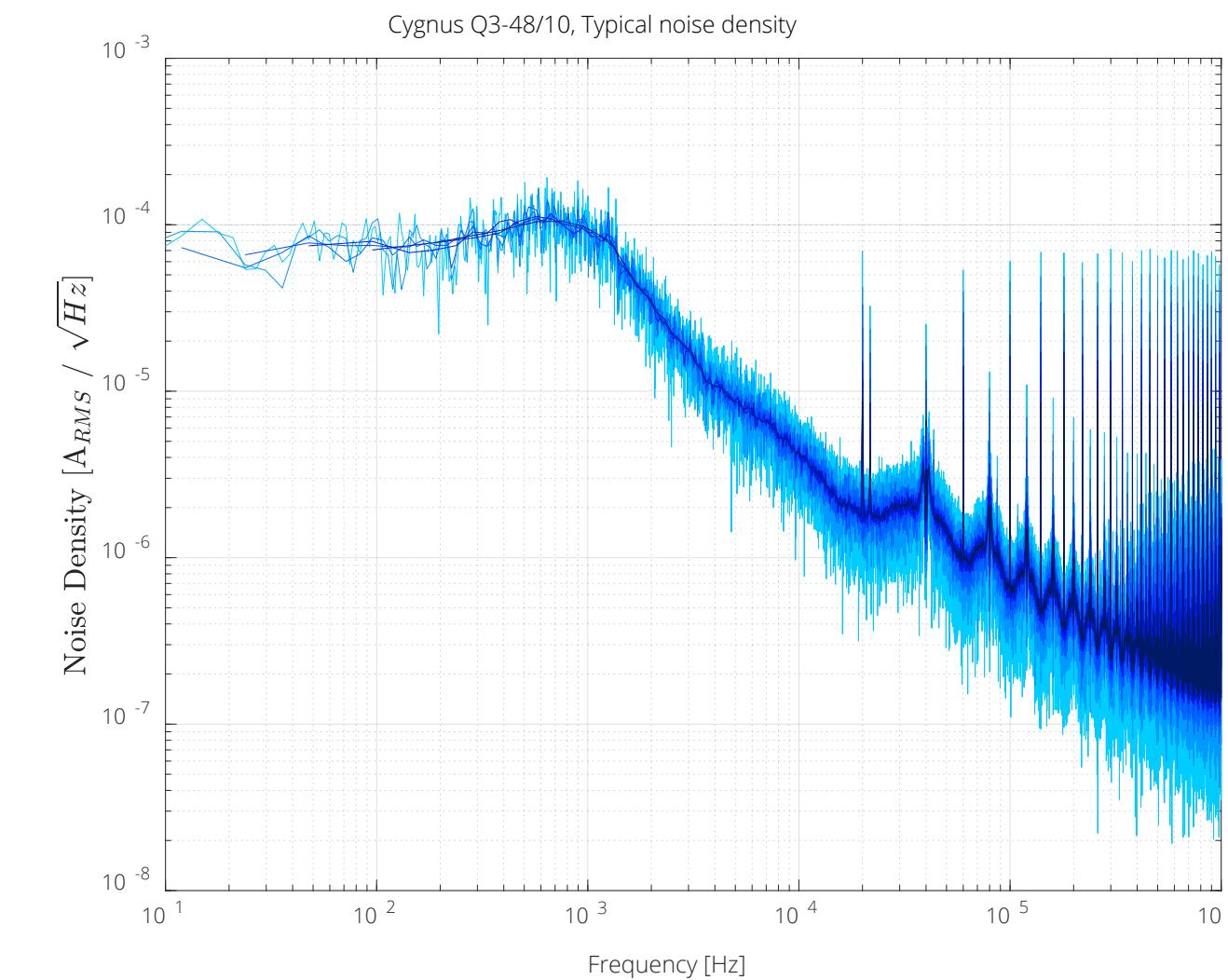
Cygnus
S3-400/8

Cygnus
D3-400/4

Cygnus
Q3-48/10

CYGNUS LINE – PERFORMANCE SPECIFICATIONS

Parameter	Symbol	Unit	S3-400/8	D3-400/4	Q3-48/10	Remark
Input	Supply input voltage	V _{SUPPLY}	V	390 - 410	390 - 410	17 - 54
	Supply input voltage, abs. max	V _{SUPPLY_ABS_MAX}	V _{DC}	450	450	60
	Peak input current	I _{SUPPLY_PEAK}	A _{PK}	max 20	max 20	max 50
	Continous input current	I _{SUPPLY_CONT}	A _{RMS}	max 10	max 10	max 30
	Auxiliary input voltage	V _{SUPPLY_AUX}	V	21 - 26		
	Auxiliary input current	I _{AUX_RMS}	A _{RMS}	max 3		
Output	Number of motor outputs	n _{MOT}	-	1	2	4
	Supported motor types		-	PMSM / BLDC / Stepper / Induction		
	Peak phase current	I _{PH_PK}	A _{PK}	22,6	11,3	28,2
	Continous phase current	I _{PH_CONT}	A _{RMS}	8,0	4,0	10,0
	Peak phase-phase voltage range	V _{PHPH_PEAK}	V _{PK}	0 - 355	0 - 355	0-43
		V _{RMS}	V _{RMS}	0 - 250	0 - 250	0-30
	Current loop, small signal bandwidth	f _{-3dB}	kHz	1		-3dB, typical value
	Rated switching frequency	f _{PWM}	kHz	20		
	Output frequency	f _{MOT}	Hz	0-595		dual use limited, see note
	Electrical braking function		-	N		
	External brake resistor		-	N		
	Internal brake resistor		-	Y		
Accuracy	Offset	E _{MOT_OFFSET}	% of I _{PH_PK}	<1,0		
	Offset drift	E _{MOT_OFFSET_DRIFT}	% of I _{PH_PK}	<1,0		
	Gain error	E _{MOT_GAIN}	% of I _{PH_PK}	<4,0		
	Gain error drift	E _{MOT_GAIN_DRIFT}	ppm of I _{PK}	<8000		
	Non-linearity	E _{MOT_NONL}	ppm of I _{PK}	<5000		
Noise	Noise (spectral density, 20Hz-10kHz)	I _{NOISE_LF}	µA/√Hz	50	20	100
	Noise (rms, 1Hz-100kHz)	I _{NOISE_100kHz}	µA _{RMS}	-		
	Ripple	I _{MOT_RIPPLE}	µA _{RMS}	-		
Control	Interface type	-	GbE			
			EtherCAT			
			RS485		50MBps max	
	Update rate	f _{ECAT}	-	100Hz - 20kHz		
	Diagnostic interface		-	GbE		



Parameter	Symbol	Unit	D1-200/4	D3-200/4	Remark
Applicable standard		-	IEC/UL61800-5-1		TÜV certified
Pollution degree	PD	-	2		
Overvoltage category	OVC	-	I		
IP-protection class / enclosure type		-	IP20 / open type		
Max operating altitude	h _{OP_max}	m	2000		above mean sea level
STO / SBC outputs		-	-		
Applicable standard			IEC61800-3		
Input filtering			Cat C2, 2nd env		
Output filtering			Activly damped LC		

Notes:

- All performance specifications are validated at an input voltage of 400VDC (Cygnus S3-400/8 & Cygnus D3-400/4) or 48VDC (Cygnus Q3-48/10)
- Dual use limited: output frequencies above 600Hz are subject to export control and require an export permit (EU 2021/821, 3A225)

CYGNUS LINE – INTERFACES & MECHANICAL SPECIFICATIONS

Q3-48/10

EtherCAT ID and GPIO (side panel)

EtherCAT input/output

GbE diagnostic port

4 encoder inputs each capable of interfacing with 2 encoders

External brake resistor

4 motor outputs

D3-400/4

EtherCAT ID and GPIO (side panel)

EtherCAT input/output

GbE diagnostic port

2 encoder inputs each capable of interfacing with 2 encoders

External brake resistor

2 motor outputs

S3-400/8

EtherCAT ID and GPIO (side panel)

EtherCAT input/output

GbE diagnostic port

encoder input capable of interfacing with 2 encoders

External brake resistor

Motor output

Q3, D3, S3 side

aux power input

power input

optional cooling fan

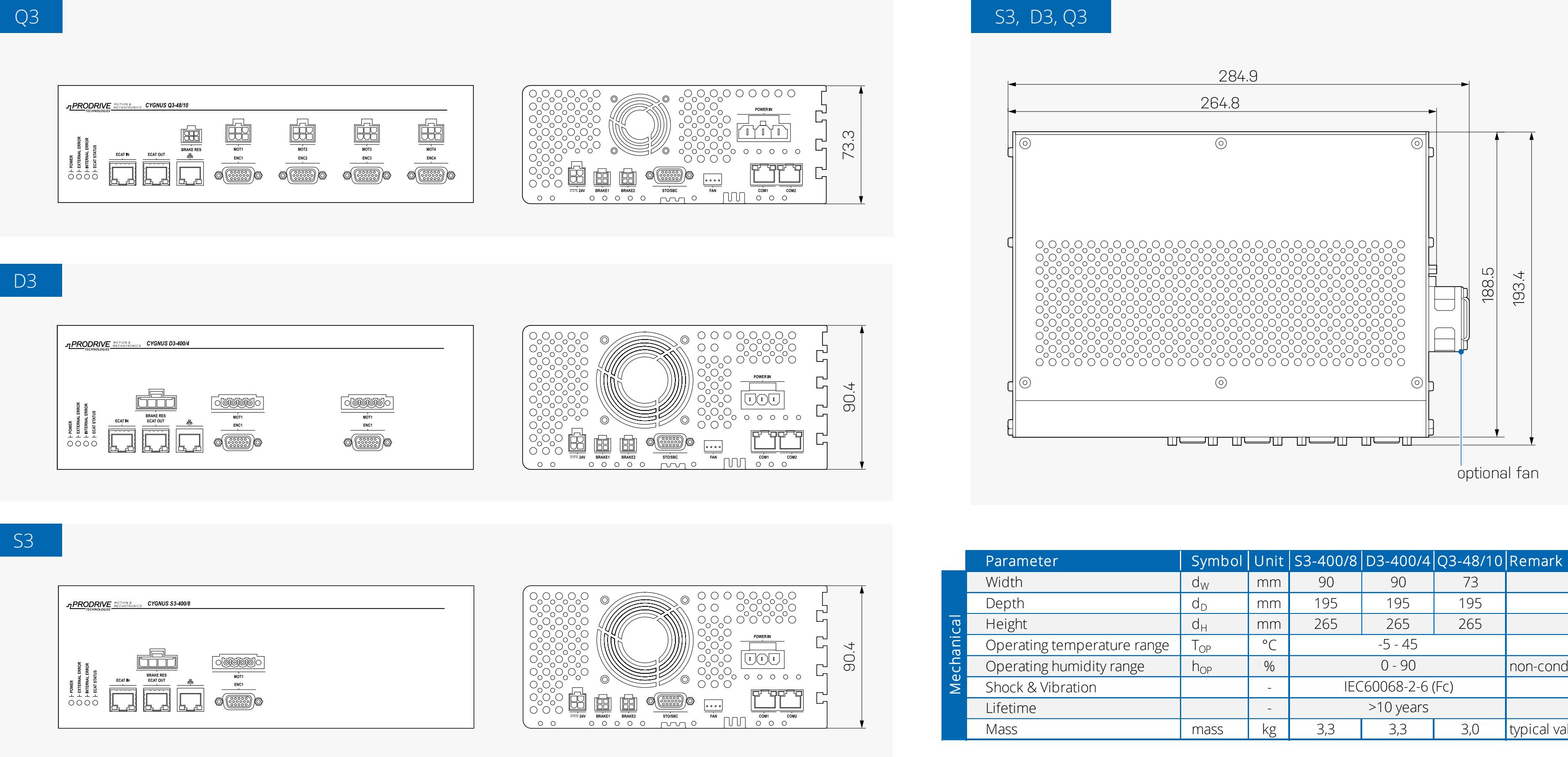
2 SBC outputs

STO/SBC interface

RS485/CAN interface

Parameter	Symbol	Unit	S3-400/8	D3-400/4	Q3-48/10	Remark
Number of encoder inputs	n_{ENC}	-	1	2	4	
Supported types						Analog Sin/Cos Digital hall Endat 2.1/2.2 Hiperface DSL (2W/4W) SSI BiSS C
Max signal frequency	f_{sincos_max}	MHz	1			No missing pulses
Maximum baudrate (digital encoders)	f_{rs422_max}	MHz	10			
Encoder supply voltage	V_{ENCSUP}	V	5 / 10			software selectable
Encoder supply current	I_{ENCSUP}	mA	max 250			
Isolated digital inputs			4 x 24V input			$(V_{IH} \geq 11V, V_{IL} \leq 5V, I_{IN} < 15mA)$
Isolated digital outputs						
Non-isolated digital inputs			3 x TTL			
Non-isolated digital outputs				4x 24V -2A		
Analog inputs				1 x ±10V		12bit resolution
Analog outputs				-		
Brake outputs				2x 24V - 2A		

CYGNUS LINE – INTERFACES & MECHANICAL SPECIFICATIONS



Mechanical	Parameter	Symbol	Unit	S3-400/8	D3-400/4	Q3-48/10	Remark
	Width	d_w	mm	90	90	73	
	Depth	d_D	mm	195	195	195	
	Height	d_h	mm	265	265	265	
	Operating temperature range	T_{op}	°C	-5 - 45			
	Operating humidity range	h_{op}	%	0 - 90			non-condensing
	Shock & Vibration			IEC60068-2-6 (Fc)			
	Lifetime			>10 years			
	Mass	mass	kg	3,3	3,3	3,0	typical value