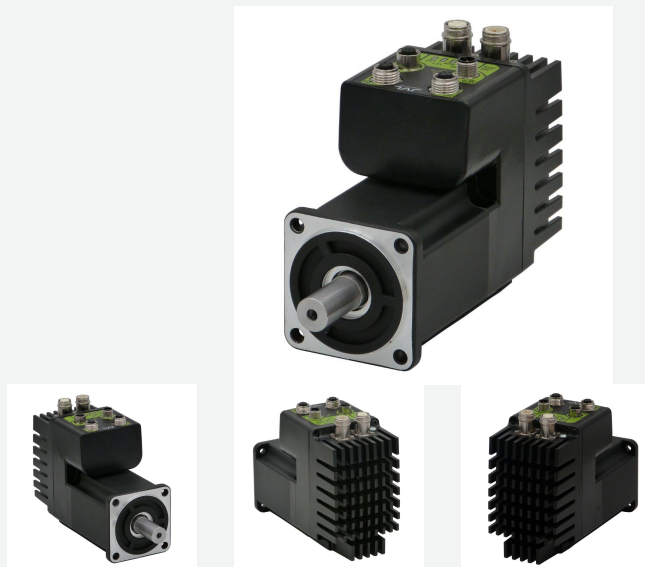




MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16



General information

Description Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16, WxHxL: 80x120x226 mm. 3000 RPM. 3.18 Nm RMS / 9.54 Nm Peak Long cooling fins, no fan, isolated P-/earth (standard), IP55, Incremental magnetic 8192 CPR , 3000 RPM, - isolated ground, Color: Black, Ø19x40±1 mm Round shaft, Built in Profinet. 4xM12. 2x4pF:Profinet 17pF:8xIOA+RS422+RS485, 1xM16 AC in (4pM)

Manufacture	JVL	Motor type	Integr. AC-servo - Rotating
Main supply [V]	115, 230	Voltage type - Main	AC
Motor power [W]	1000	Power Peak [W]	2997
Duty Cycle	S1	Max Duty Cycle [%]	100
Continuous Torque	3.18	Peak torque [Nm]	9.54
Speed [Rpm]	3000	Speed Max. [Rpm]	3600
Encoder type	Abs. Singleturn Encoder	Encoder [Counts/rev]	8192
Integrated PLC	Yes	Brake	No
STO connector	No	Fan mounted	No
Integrated gear	No	Gear ratio	-
Flange size	80x80		
Shaft size - Front [mm]	19.00mm	Shaft Type Output	Round
Protection house	IP55	Protection shaft	IP55
Control voltage (CVI/O+) [VDC]	18-30		
PLC no. of DI/DO/AI		PLC no. of DI/DO	
Multifunction IOs	0		
Color	Black		



MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

General information

Software	MacTalk	Interface	Profinet
Approval - UL	Pending	Approval TÜV - STO	Assessment pending
Ambient Temperature range [°C]:		Max. Amb. Temperature range - Torque derating:	
Maximum Installation Altitude [m]:		- Power Derating every 1000m over 1000m [%]:	
Weight net [kg]	4.04	Weight gross [kg]	4.37
Country Of Origin	DK	Tariff no	85015220
Tariff no US			



MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Mechanical information

Motor type	Integr. AC-servo - Rotating	Color	Black
Rotor inertia [kgcm ²]	1.81	Max inertia factor	20
Duty Cycle	S1	Max Duty Cycle [%]	100
Encoder type	Abs. Singleturn Encoder	Encoder [Counts/rev]	8192
Precision Motor - Absolute [Deg -/+]	0.071	Precision Motor - Max Load [Deg -/+]	
Precision Motor - Repeatability [Deg -/+]	0.049		
Brake	No	Brake - Go ON time [ms]	-
Brake Holding torque [Nm]	-	Brake - Go OFF time [ms]	-
Brake Backlash (Play)			
Radial load [N]	392	Radial load distance [mm]	25
Axial load [N]	147		
Axial play [mm]	0.0	Axial play force [N]	147
Front bearing type	6004-ZZ	Rear bearing type	16002-ZZ
Integrated gear	No	Gear ratio	-
Gear efficiency [%]	< -	Gear backlash [ArcMin]	-
Motor length [mm]	198.0	Motor width [mm]	80.0
Motor height [mm]	135.8	Protection house	IP55
Customer Sealing	Standard		
Flange size	80x80	Mounting holes front [mm]	5.4
Motor diameter center front [mm]	70.0	Bolt circle diameter front [mm]	90.0
Flange material	Aluminium	Flange Thickness [mm]	8.00
Shaft size - Front [mm]	19.00mm	Shaft Type Output	Round
Shaft length Front [mm]	40.0	Shaft material	Steel 40Cr
Shaft Key included	-	Shaft Key Dimension	-
Shaft Seal	-	Protection shaft	IP55
Approval - ROHS-3	Yes	Approval - UL	Pending
Approval TÜV - STO	Assessment pending	Approval - ATEX	No
Datasheet - pdf	No	User Manual	Download



MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

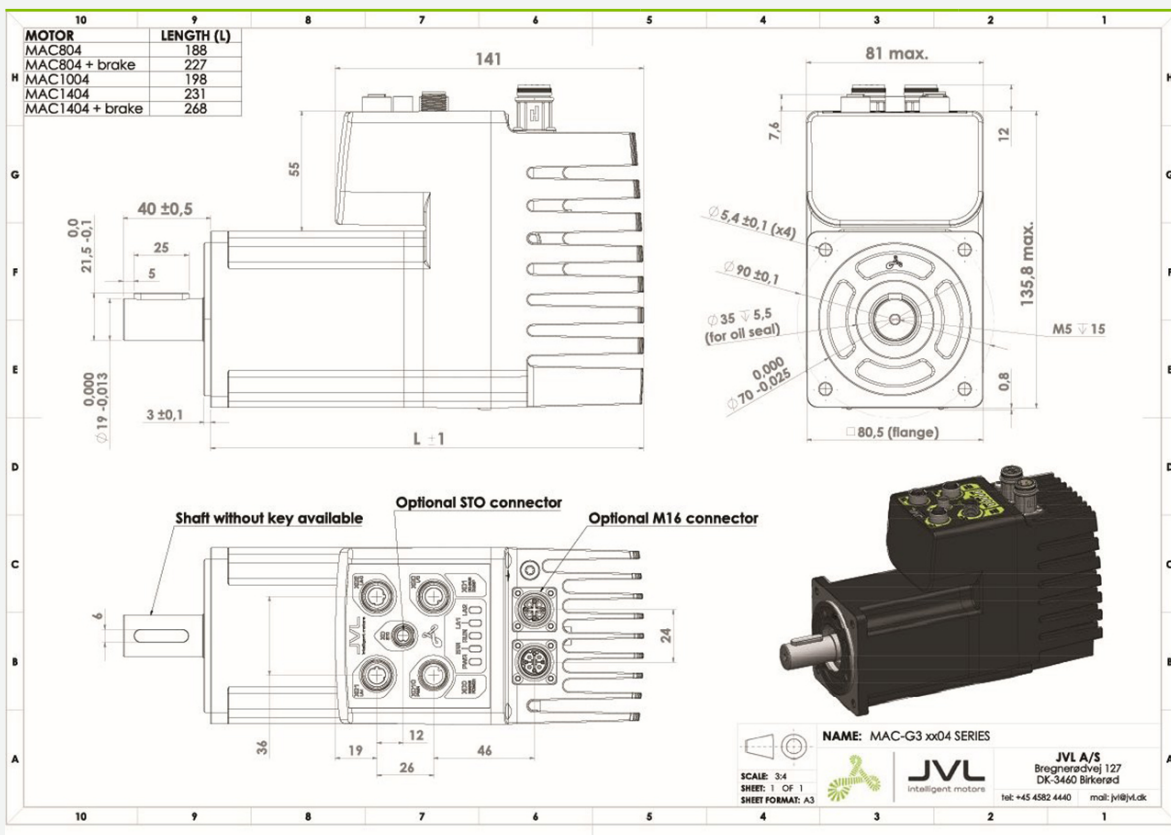
Mechanical information

REACH SVHC document

Download

No Dual Use

Read more here



CAD 2D [PDF]

No

CAD 2D [DWG]

No

CAD 3D [DWG]

No

CAD 3D [EASM]

No

CAD 3D [IGES]

No

CAD 3D [STEP]

No

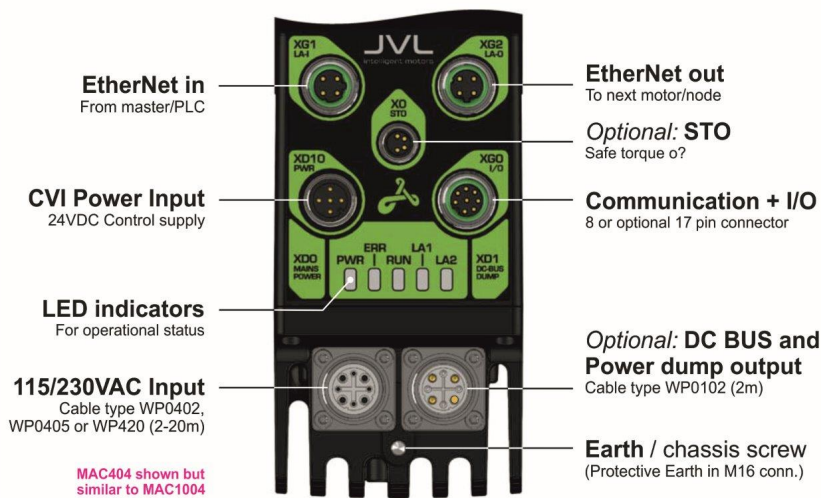


MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Connector information

Motor connectors



Connector XD0 Power input: M16 4-pin male **Connector XD0 Supplier** JVL

Description

Connector XD0 Direction Straight

Connector XD1 **Connector XD1 Supplier** JVL

Description

Connector XD1 Direction

Connector STO No **STO Connector Type**

Connector XD10 label	CVI Power Input	Connector XD10	M12 5-pin male A-coded
Connector XG1 label	Profinet in	Connector XG1	M12 4-pin female D-coded Ethernet
Connector XG2 label	Profinet out	Connector XG2	M12 4-pin female D-coded Ethernet
Connector XG0 label	Communication + I/O	Connector XG0	M12 17-pin female A-coded

Connector XG1 RS485 No **Connector XG2 RS485** No

Connector XG0 RS485 Yes

XD10 Pinout

"PWR" (XD10) - Power input. M12 - 5pin male connector

Signal name	Description	Pin no.	JVL Cable W11000-M12F5TxxN	Isolation group
-	Not used	1	Brown	1
-	Not used	2	White	1
P-	Main supply ground. Connect with pin 5 *	3	Blue	1
CVI	Control and user output supply +7-32VDC. DO NOT connect >32V to this terminal!	4	Black	1
P-	Main supply ground. Connect with pin 3 *	5	Grey	1

Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.



MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Connector information

XG1 Pinout

“LA-I” (XG1) Ethernet In connector - M12 - 4pin female connector “D” coded				
Signal name	Description	Pin no.	JVL Cable WI1046-M12 M4TM4TxxT	Isolation group (See note)
Tx0_P	Ethernet Transmit channel 0 - positive terminal	1	-	2
Rx0_P	Ethernet Receive channel 0 - positive terminal	2	-	2
Tx0_N	Ethernet Transmit channel 0 - negative terminal	3	-	2
Rx0_N	Ethernet Receive channel 0 - negative terminal	4	-	2
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

XG2 Pinout

“LA-O” (XG2) Ethernet Out connector M12 - 4 pin female connector “D” coded				
Signal name	Description	Pin no.	JVL Cable WI1046-M12 M4TM4TxxT	Isolation group (see note)
Tx1_P	Ethernet Transmit channel 1 - positive terminal	1	-	3
Rx1_P	Ethernet Receive channel 1 - positive terminal	2	-	3
Tx1_N	Ethernet Transmit channel 1 - negative terminal	3	-	3
Rx1_N	Ethernet Receive channel 1 - negative terminal	4	-	3
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

XG0 Pinout

“I/O” (XG0) RS485 + I/O connector - M12 - 17pin female connector				
Signal name	Description	Pin no.	JVL Cable WI1009M12 M17TxxN	Isolation group (see note)
IO1	I/O channel 1. Can be used as input or output 350mA	1	Brown	1
GND	Ground intended to be used together with the other signals in this connector	2	Blue	1
IO2	I/O channel 2. Can be used as input or output 350mA	3	White	1
IO3	I/O channel 3. Can be used as input or output 350mA	4	Green	1
RS422: B1-	RS422 I/O terminal B-	5	Pink	1
IO4	I/O channel 4. Can be used as input or output 350mA	6	Yellow	1
RS422: A1-	RS422 I/O terminal A-	7	Black	1
RS422: B1+	RS422 I/O terminal B+	8	Grey	1
CVO	Supply output. Connected internally to the CVI terminal in the PWR connector. DO NOT connect >30V to this terminal!	9	Red	1
RS422: A1+	RS422 I/O terminal A+	10	Violet	1
IO5	I/O channel 5. Can be used as input or output 350mA	11	Grey/pink	1
IO6	I/O channel 6. Can be used as input or output 350mA	12	Red/blue	1
IO7	I/O channel 7. Can be used as input or output 350mA	13	White/Green	1
IO8	I/O channel 8. Can be used as input or output 350mA	14	Brown/Green	1
RS485: B0-	RS485 MacTalk interface. Leave open if unused	15	White/Yellow	1
GND	Ground intended to be used together with the other signals in this connector	16	Yellow/brown	1
RS485: A0+	RS485 MacTalk interface. Leave open if unused	17	White/grey	1
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

CON Main

“MAINS POWER” (XD0) connector M16 - 4 pin male connector				
Signal name	Description	Pin no.	JVL Cable WP0402	Isolation group (see note)
Neutral	Neutral used for 115 or 230VAC phase input	A	Blue	4
L1	115VAC supply input	B	Red	4
L2	230VAC supply input	C	Brown	4
PE (Earth)	Protective earth terminal	Earth	Green/Yellow	4
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

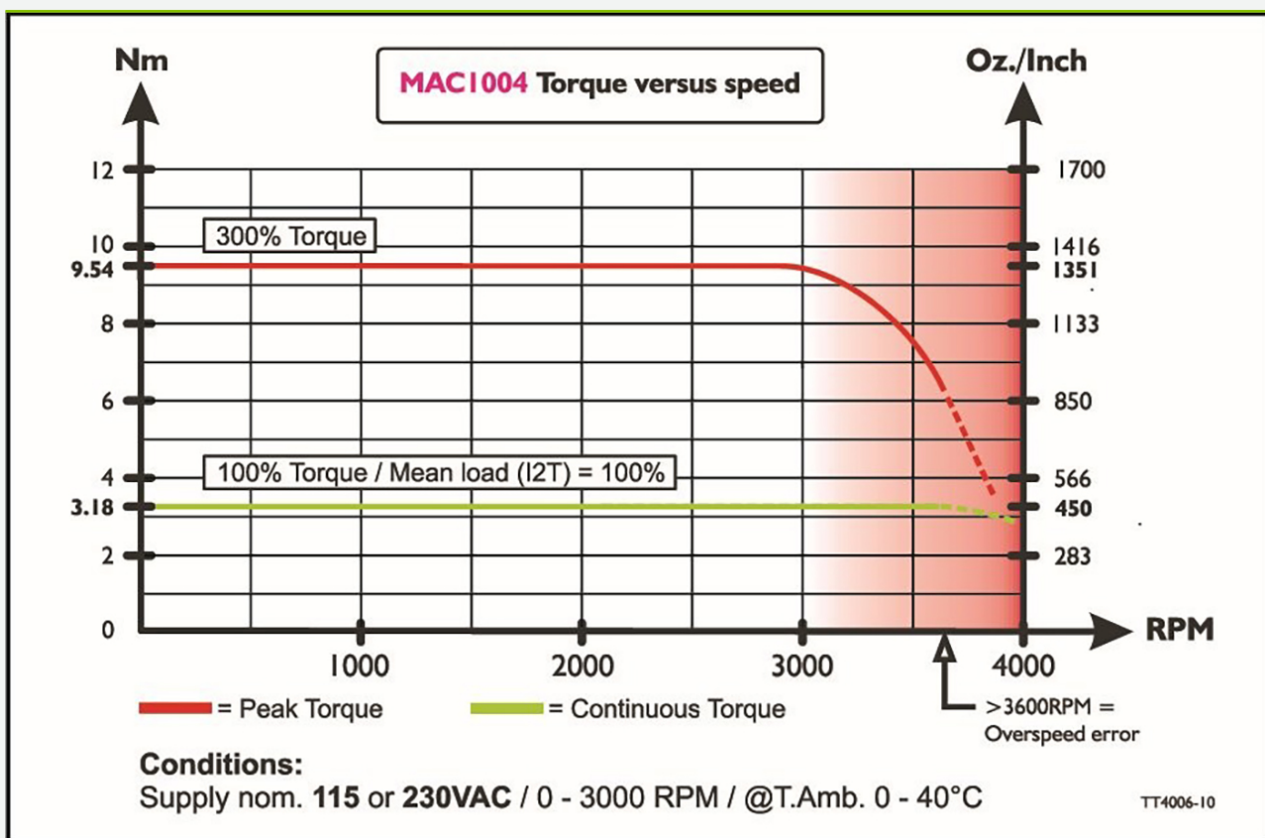


MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Torque, force and Power information

RMS torque [Nm]	3.18	Peak torque [Nm]	9.54
Supply Volt 1 [V]	1x115	Velocity max 1 [Rpm]	3600
Supply Volt 2 [V]	1x230	Velocity max 2 [Rpm]	3600
Supply Volt 3 [V]		Velocity max 3 [Rpm]	
Supply Volt 4 [V]		Velocity max 4 [Rpm]	





MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Electrical information

Main supply [V]	115, 230	Main supply Min-Max [V]	90-260
Main Voltage possible	1x115VAC, 1x230VAC	Inrush current -Main max [A]	< 5
Input Voltage Frequency			
Recommended fuse	T10A@230VAC / T15A@115VAC If automatic use class D	P- isolated from Earth (Low Voltage ground (P-) isolated from housing)	Yes
Internal Power-Dump Resistance [Ohm]	150	Internal Power-Dump Power [W]	10
PD connection - Int/Ext	Int/Ext PD in Parallel		
External Power-Dump Resistance Minimum value [Ohm]	20	External Power-Dump Max Current [A]	25
Control voltage (CVI/O+) [VDC]	18-30	Control Voltage (CVI) Min-Max [VDC]	18-32
Max current CVI [A]	0.25		
PLC no. of DI/DO/AI		PLC no. of DI/DO	
Dig. Input impedans	30k 0-5 V	PLC DO max current [mA/DO]	350
PLC AIN voltage [VDC]	0-5 VDC, 12 bit	PLC AIN Min-Max [VDC]	-10 / +30
PLC AIN Max Tol. [%]	±2		
Multifunction IOs		PLC MF low level [VDC]	-
PLC MF high level [VDC]	-	PLC MF Max level [VDC]	0-5 V -7 -> +12
Temperature Error [°C]			



JVL A/S | Bregnerødvej 127 | DK-3460 Birkerød | Denmark | Tel. (+45) 4582 4440 | www.jvl.dk | sales@jvl.dk

MAC1004M2-GAAREP2

Int.ServoAC 1000WS1 3.18Nm IP55 Inc EP 1xM16

Communication information

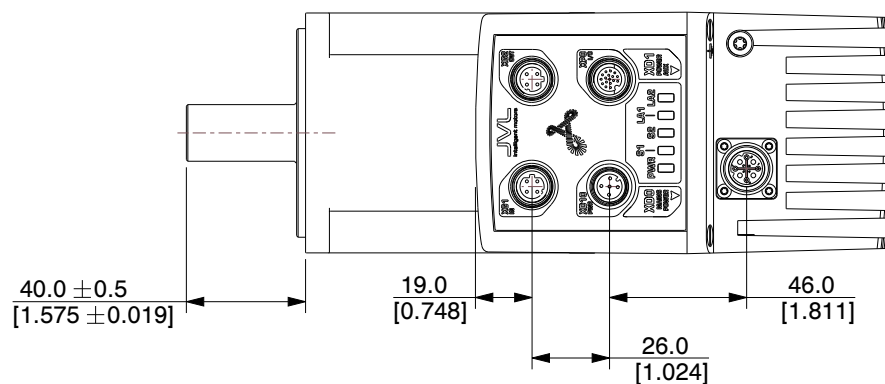
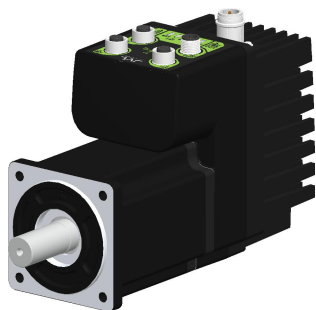
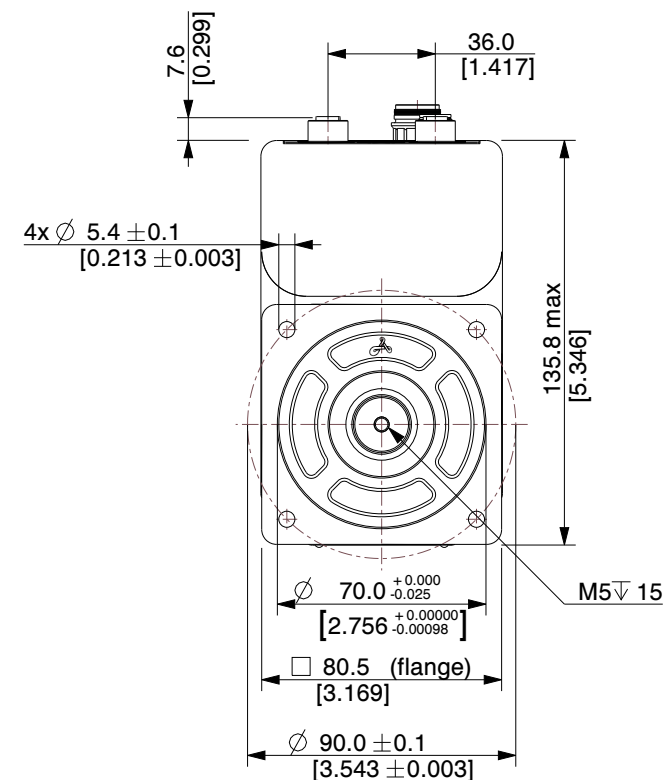
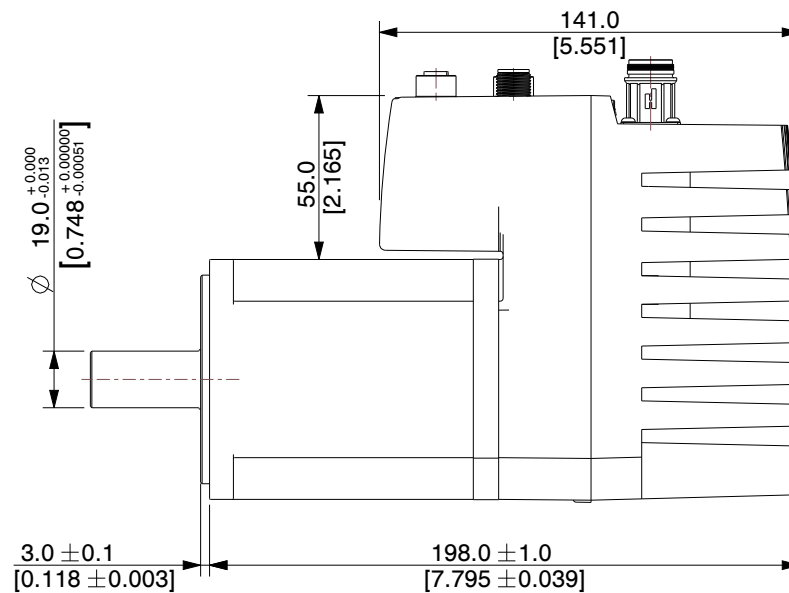
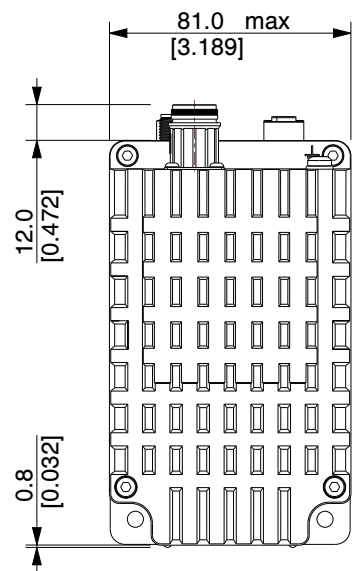
Software	MacTalk
-----------------	---------

Connectivity:	Profinet
----------------------	----------

Without module	
-----------------------	--

e-PLC Files

Ethernet, PLC demo files



NOTES:
1. Encoder Type: Absolute multturn 4096 Rev. Single 8192 CPR

JVL A/S Bregnerødvej 127 DK-3460 Birkerød Denmark				 www.jvl.dk	
PART NUMBER: MAC1004M2-GAAREP2					
PART DESCRIPTION: Integrated Stepper Motor					
  A4		SCALE		NTS	
		UNIT		MM [Inch]	
Unless specifically stated otherwise, this drawing is the property of JVL A/S and no feature embodied herein may be disclosed except as previously authorized					