

XUMU series

Fast and compact motor unit

The XUMU motor units are world class in terms of size, weight and lifetime. The motor unit is driven by the Crossfixx™ ultrasonic piezo motor, allowing an extremely compact design while still achieving a force output up to 10 N and speeds up to 1000 mm/s! The controller is integrated in the motor unit to simplify cabling for OEM applications. The ceramic drive strip is available in different lengths and can easily be mounted in any application.

KEY FEATURES

drive principle	patented Crossfixx™ ultrasonic piezo technology
lifetime	>1000 km / typ. 10 million rev.
control principle	open-loop control
controller	integrated

MODEL CODE STRUCTURE

motor type	driving force (N)	drive strip length (mm)
XUMU	-5	-40
		-60
		-80
		-120
		-135
		-175
	-10 (preliminary version with external controller)	same as for XUMU-5

Example: **XUMU-5-80**

- XUMU series motor unit
- Driving force of 5 N
- Ceramic strip length of 80 mm

ENVIRONMENTAL COMPATIBILITY

temperature range	-30°C to +70°C
humidity range	20% to 90% RH (non-condensing)
heat dissipation (motor and controller)	< 8 W (XUMU-5) < 16 W (XUMU-10)
internal operation voltage	60 V (XUMU-5) 120 V (XUMU-10)

MOTION PERFORMANCE

	XUMU-5	XUMU-10	unit	tolerance
min step size	2 – 5 (pulsed operation)		µm	typ.
max. speed	1000		mm/s	typ.
operation duty cycle	100	50	%	max.
	unlimited	120	sec	max.

MECHANICAL PROPERTIES

		XUMU-5	XUMU-10	unit	tolerance
dimensions	motor unit	29.1 x 30 x 11.8	29 x 30 x 11.5 (wo/ integrated controller)	mm	± 0.1
	drive strip	2 x 5 (section size)		mm	± 0.05
mass (motor unit)		28	28	g	± 5%
holding force ¹		5	10	N	typ.
driving force ²		5	10	N	± 1
materials	housing drive strip	aluminium alumina			
cable		FFC 305 mm, 16 core, 0.5 mm pitch with same side contacts and latching ears 100 000 bending cycles at radius 10 mm (typ.) (Molex 15018-0181)			

¹ holding force depends on the preload adjustment of the motor unit and can be tailored to the application

² the generated driving force of the motor unit depends on many parameters of the application (preload, drive strip installation, guideways...)

MOTOR UNIT AND DRIVE STRIP INSTALLATION

The XUMU motor units can easily be integrated in a wide range of motion applications. This integration consists of installation of the ceramic drive strip by means of double-sided tape or epoxy adhesive. Next, the motor unit needs to be mounted such that the motor tip is positioned correctly against the drive strip. Optimal preload of the motor unit against the drive strip can be obtained by repositioning of the motor unit (XUMU-5) or by means of an adjustment screw (XUMU-10).

CONTROLLER/SOFTWARE

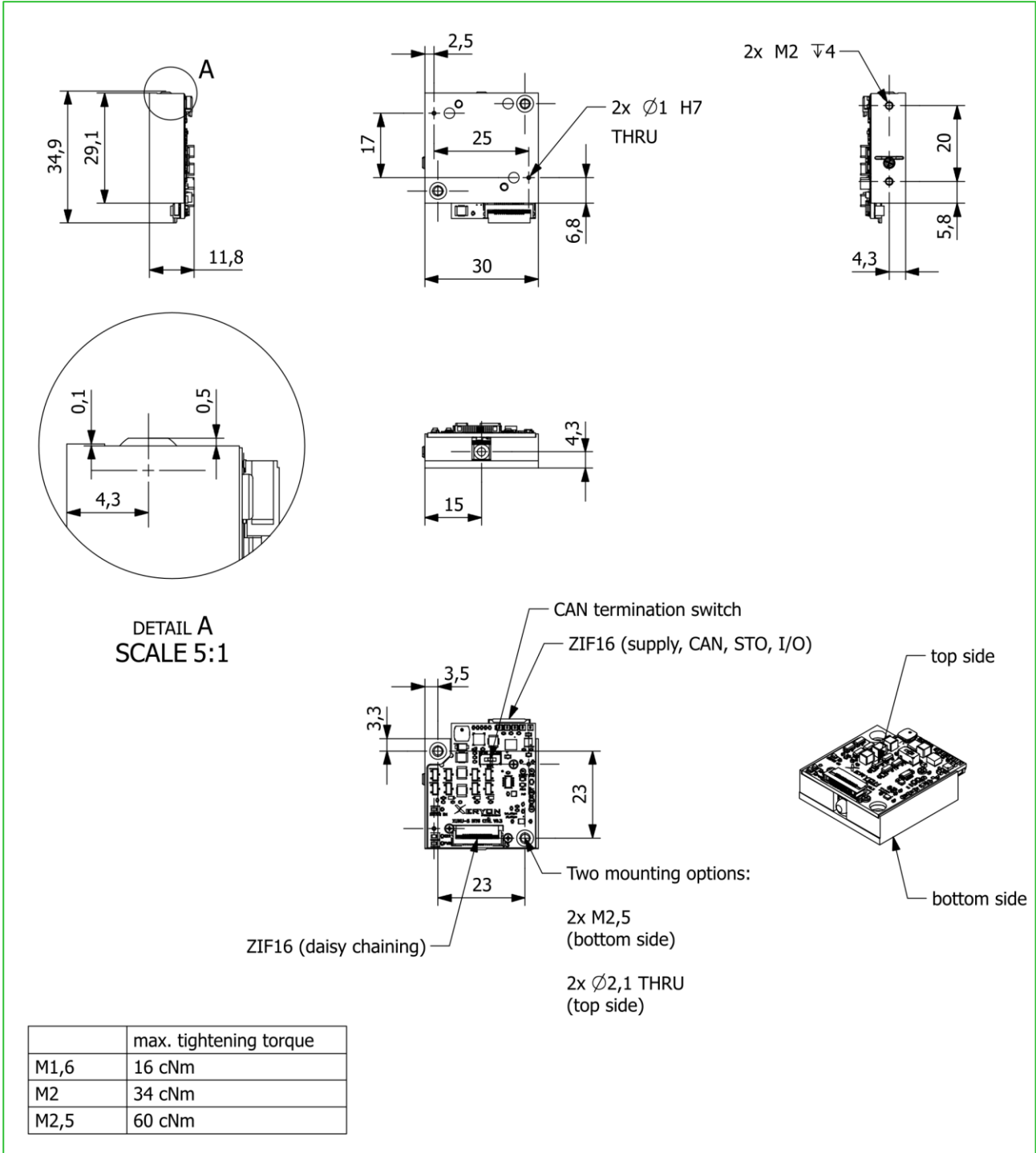
The XUMU motor units have an integrated controller. Controlling of the stage is possible by using direct communication (CAN) or through I/O signals. More information can be found here: <https://xeryon.com/downloads/>

The current, preliminary version of the XUMU-10 is provided with the XD-OEM controller. The final product with integrated controller will have the same communication functionality as the XUMU-5.

Note: a detailed description of the technical terms used in this datasheet can be found on the Terminology page of our website.

DRAWINGS

XUMU-5 assy F6



XUMU-10 assy A4 (preliminary version with external controller)

