WU-S

Battery-less Absolute | Compact type | 24V Pulse Motor

■ Model Specification Items

WU	S	WA	PM1	☐	☐
Series	Type	Encoder Type	Applicable Controllers	Cable Length	Options
	S: Compact Type	WA: Battery-less Absolute	PM1: MSEL	N: None P: 1m S: 3m M: 5m X☐☐: Specified Length R☐☐: Robot Cable	Refer to Options table below.

* Does not include a controller
* Please refer to P.4 for more information about the model specification items.

CE RoHS

* Please refer to P.6 for more information on the installation method and orientation.

POINT Selection Notes

When making a selection, it is necessary to calculate the moment of inertia of the operating conditions and to use a model that allows that moment of inertia. Calculate the moment of inertia of the transported object for the B- and T-axes respectively. Please refer to "Model Selection Process (P.7 on)" for more information.

(Note 1) Shows maximum set speed with no load.

(Note 2) When the rotational axes of the B-axis and T-axis are horizontal with respect to the floor surface or when the center of gravity of the transported object is offset from the rotational axis, the unit will be subject to load torque due to the weight of the object. The allowable moment of inertia decreases when load torque is present. Please refer to "Model Selection Process (P.7 on)" for more information.

Actuator Specifications

Model	Axis configuration	Operation range (deg.)	Max. speed (Note 1) (deg/s)		Max. payload (kg)	Max. acceleration/deceleration (G)	
			Independent operation	Simultaneous operation of the B- and T-axes		Without load torque (Note 2)	With load torque (Note 2)
WU-S-WA-PM1-①-②	B-axis (wrist swing)	±100	750	600	1	0.7 G (6865 deg/s²)	0.3 G (2942 deg/s²)
	T-axis (wrist rotation)	±360	1200	600		0.7 G (6865 deg/s²)	0.3 G (2942 deg/s²)

Legend: ① Cable length ② Options

*1 G ≈ 9807 deg/s²

Cable Length <per axis *1>

Type	Cable code
Standard type	**P**(1m)
	S(3m)
	M(5m)
Specified length	**X06**(6m) to **X10**(10m)
	X11(11m) to **X15**(15m)
	X16(16m) to **X20**(20m) *2
Robot cable	**R01**(1m) to **R03**(3m)
	R04(4m) to **R05**(5m)
	R06(6m) to **R10**(10m)
	R11(11m) to **R15**(15m)
	R16(16m) to **R20**(20m) *2

Cable between actuator and controller.

*1 Required for both B- and T-axes. Select the cable length in the model name to have 2 cables attached.

*2 When actuator cable length change "AC1.5" is selected as an option, 18 m (X18, R18) will be the maximum length.

Actuator Specifications

Item	Description	
	B-axis (wrist swing)	T-axis (wrist rotation)
Drive system	Pulse motor + timing belt	Pulse motor + timing belt + bevel gear
Positioning repeatability	±0.015 deg.	±0.15 deg.
Lost motion	0.06 degrees	0.4 degrees
Allowable dynamic thrust load *1	330N	
Allowable dynamic load moment *1	1.4N·m	
Unit weight	1.6kg	
Brake retaining torque *2	0.96N·m	0.96N·m
Ambient operating temperature, humidity	0~40°C, 85% RH or less (Non-condensing)	

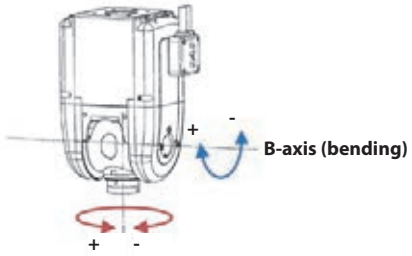
*1 Using the unit with a load exceeding the values above leads to reduced service life and/or damage.

*2 Equipped with brake as standard.

Options

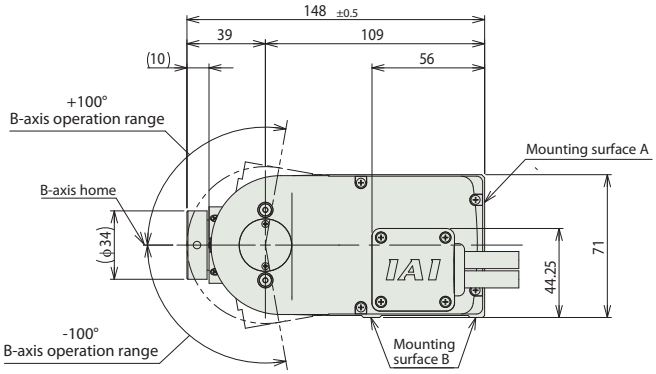
Name	Option code	Reference page
Cable exit direction (Right)	**A1**	See P.5, P.14
Cable exit direction (Bottom)	**A2**	See P.5, P.14
Cable exit direction (Left)	**A3**	See P.5, P.14
Actuator cable length 1.5 m	**AC1.5**	See P.5, P.14
Cable (air fitting) in opposite position	**CVR**	See P.5, P.14
Air fitting	**VC**	See P.5, P.14
Wiring collar	**WCS**	See P.5, P.14

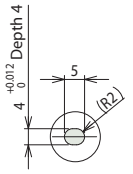
Name and Coordinates of Each Axis



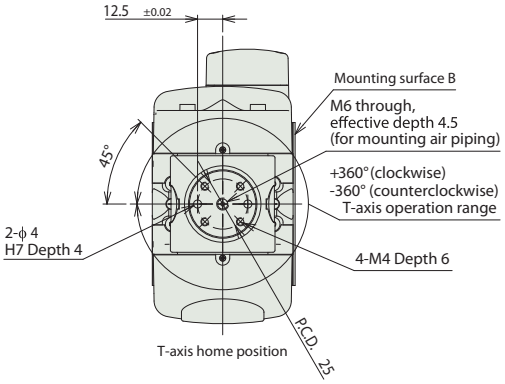
Dimensions

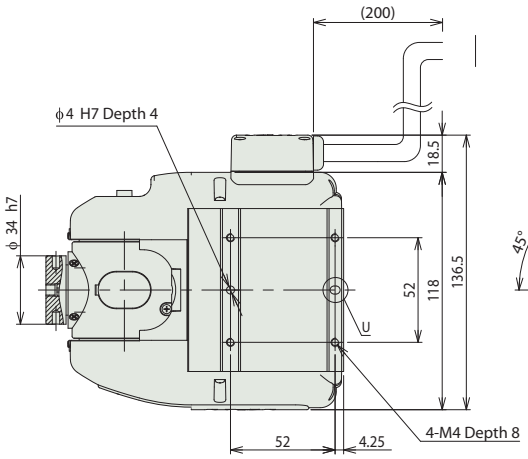
CAD drawings can be downloaded from our website.
www.robocylinder.de

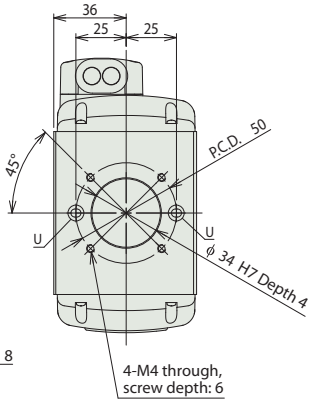




Detailed view U

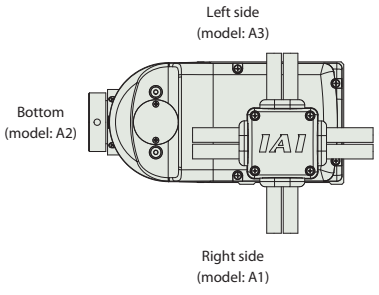




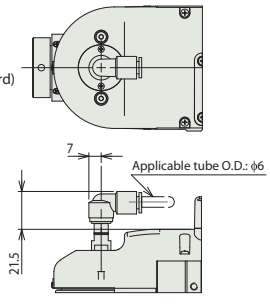


Options

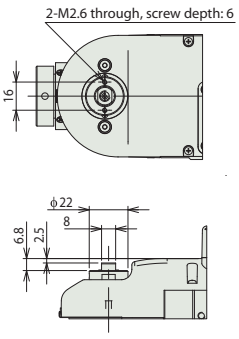
■ Cable exit direction



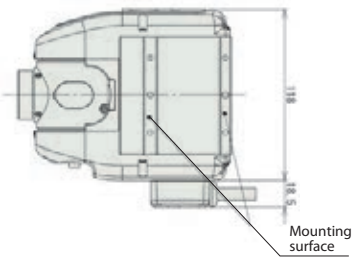
■ Air fitting (model: VC)



■ Wiring collar (model: WCS)



■ Cable (air fitting) opposite position (model: CVR)



Applicable Controllers

Name	External view	Max. number of connectable axes	Power supply voltage	Control method				Maximum number of positioning points	Reference page
				Positioner	Pulse-train	Program	Network * selection		
MSEL-PC/PG		4	Single phase 100 to 230 V AC	–	–	●	DeviceNet, CC-Link, EtherCAT, EtherNet/IP, PROFIBUS, OPCON	30000	See P.17

WU-M

Battery-less Absolute | Medium type | 24V Pulse Motor

■ Model Specification Items

WU	M	WA	PM1	□	□
Series	Type	Encoder Type	Applicable Controllers	Cable Length	Options
	M: Medium Type	WA: Battery-less Absolute	PM1:MSEL	N : None P : 1m S : 3m M : 5m X□□ : Specified Length R□□ : Robot Cable	Refer to Options table below.

* Does not include a controller
* Please refer to P.4 for more information about the model specification items.

CE RoHS

* Please refer to P.6 for more information on the installation method and orientation.

POINT Selection Notes

When making a selection, it is necessary to calculate the moment of inertia of the operating conditions and to use a model that allows that moment of inertia. Calculate the moment of inertia of the transported object for the B- and T-axes respectively. Please refer to "Model Selection Process (P.7 on)" for more information.

(Note 1) Shows maximum set speed with no load.

(Note 2) When the rotational axes of the B-axis and T-axis are horizontal with respect to the floor surface or when the center of gravity of the transported object is offset from the rotational axis, the unit will be subject to load torque due to the weight of the object. The allowable moment of inertia decreases when load torque is present. Please refer to "Model Selection Process (P.7 on)" for more information.

Actuator Specifications

Model	Axis configuration	Operation range (deg.)	Max. speed (Note 1) (deg/s)		Max. payload (kg)	Max. acceleration/deceleration (G)	
			Independent operation	Simultaneous operation of the B- and T-axes		Without load torque (Note 2)	With load torque (Note 2)
WU-M-WA-PM1-①-②	B-axis (wrist swing)	±105	900	600	2	0.7 G (6865 deg/s²)	0.3 G (2942 deg/s²)
	T-axis (wrist rotation)	±360	1200	600		0.7 G (6865 deg/s²)	0.3 G (2942 deg/s²)

Legend: ① Cable length ② Options

*1 G = 9800 deg/s²

Cable Length <per axis *1>

Type	Cable code
Standard type	**P**(1m)
	S(3m)
	M(5m)
Specified length	**X06**(6m) to **X10**(10m)
	X11(11m) to **X15**(15m)
	X16(16m) to **X20**(20m) *2
Robot cable	**R01**(1m) to **R03**(3m)
	R04(4m) to **R05**(5m)
	R06(6m) to **R10**(10m)
	R11(11m) to **R15**(15m)
	R16(16m) to **R20**(20m) *2

Cable between actuator and controller.
*1 Required for both B- and T-axes. Select the cable length in the model name to have 2 cables attached.
*2 When actuator cable length change "AC1.5" is selected as an option, 18 m (X18, R18) will be the maximum length.

Actuator Specifications

Item	Description	
	B-axis (wrist swing)	T-axis (wrist rotation)
Drive system	Pulse motor + timing belt	Pulse motor + timing belt + bevel gear
Positioning repeatability	±0.015 deg.	±0.15 deg.
Lost motion	0.06 degrees	0.4 degrees
Allowable dynamic thrust load *1	450N	
Allowable dynamic load moment *1	4.2N·m	
Unit weight	2.8kg	
Brake retaining torque *2	2.8N·m	2.8N·m
Ambient operating temperature/humidity	0~40°C, 85% RH or less (Non-condensing)	

*1 Using the unit with a load exceeding the values above leads to reduced service life and/or damage.
*2 Equipped with brake as standard.

Options

Name	Option Code	Reference page
Cable exit direction (Right)	**A1**	See P.5, P.16
Cable exit direction (Bottom)	**A2**	See P.5, P.16
Cable exit direction (Left)	**A3**	See P.5, P.16
Actuator cable length 1.5 m	**AC1.5**	See P.5, P.16
Cable (air fitting) in opposite position	**CVR**	See P.5, P.16
Air fitting	**VC**	See P.5, P.16
Wiring collar	**WCS**	See P.5, P.16

Name and Coordinates of Each Axis