

# WhisperShade® IQ®2 EDU Specification Submittal

## Models

WhisperShade IQ2 Electronic Drive Unit (EDU)

Stock no.: P5X7 0634 - - 6Nm, 34rpm, 120VAC ("S2")  
P5X7 1234 - - 12Nm, 34rpm, 120VAC ("S2")  
"- -" Denotes the power connector options

XG: No connector

AN: Standard motor disconnect

WG: WAGO® disconnect

NS: US NEMA 5-15P straight disconnect

NR: US NEMA 5-15P right-angle disconnect

S1: Operating voltage 230VAC

S2: Operating voltage 120VAC

Torque variations up to 50Nm available upon request.

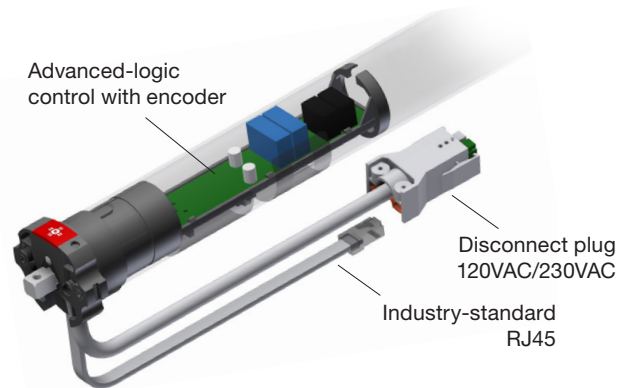
## Description

The WhisperShade IQ2 Electronic Drive Unit (EDU) represents the pinnacle of roller-shade control functionality. Its internal microprocessor-based controls enable it to connect directly to MechoSystems' MechoNet network without any external controllers.

This bidirectional communication network provides flexibility, reliability, and scalability to whole-building control. The EDU offers unprecedented functionality through a wide variety of operational modes.

An exclusive blind-control mode modifies the EDU's operation to support lift-and-tilt blind operation, with three preset positions for each. Nine internal-control addresses support overlapping, multilevel controls (individual, group, master, and others). PC-based tools support field configurations and motor programming from anywhere on the control network.

A variety of accessories support integration and operation from tablets, smart phones, and 3rd-party systems such as A/V, lighting, and Building-Management Systems (BMS). Control can also be extended to MechoSystems' SolarTrac® automated WindowManagement® Systems for ultimate energy efficiency with optimized comfort and views.



## Features

- An intelligent, encoded tubular motor with an internal communication and control card.
- Internal electronics to eliminate the component mounting, wiring, and installation costs associated with a separate controller.
- Quiet operation over a wide range of torque variations. (See Mechanical chart, next page.)
- Repeatable and precise positioning of roller shades within  $\pm 1/16$  in. ( $\pm 1.6$ mm).
- 133 available alignment points, including three user-programmable presets, available via network and dry-contact control and 29 user-programmable presets available through network control.
- Two inherent methods of control:
  - A. Cost-effective, low-voltage, dry-contact control for local-switch or 3rd-party control operation.
  - B. A two-way communication network to support whole-building, low-voltage control, and serial integration to 3rd-party controls.
- Scalable, flexible, and industry-proven network architecture.
- Cost-effective power wiring to permit the daisy chaining of three-conductor power from motor to motor.
- Uniform Mode setting to maintain an architect's design intent at all times, with a controlled and precisely aligned window wall.
- The IQ System, including the WhisperShade IQ2 Electronic Drive Unit, meets the reliability and safety standards of UL 325, CSA 22.2 No. 247, and CE.

MechoSystems  
Corporate Headquarters  
42-03 35th Street  
Long Island City, NY 11101

T: +1 (718) 729-2020  
F: +1 (718) 729-2941  
E: techsales@mechosystems.com  
W: mechosystems.com



# WhisperShade IQ®2 Specifications

## Electrical

### Power input

120VAC +/-10%, 60Hz

230VAC +/-10%, 50Hz

Stock Number	Amps
M5X7 0634 ^ S2	0.9
M5X7 1234 ^ S2	1.8
M5X7 1521 ^ S2	1.1
M5X7 2016 ^ S2	1.1
M5X7 2521 ^ S2	1.6
M5X7 3016 ^ S2	1.6
M5X7 3521 ^ S2	1.8
M5X7 4016 ^ S2	1.8

Stock Number	Amps
M5X7 0626 ^ S1	0.56
M5X7 1530 ^ S1	1.1
M5X7 2017 ^ S1	0.85
M5X7 2514 ^ S1	0.85
M5X7 3017 ^ S1	1.16
M5X7 3514 ^ S1	1.16
M5X7 4017 ^ S1	1.5
M5X7 5014 ^ S1	1.5

Switch input: 15–24VDC, 10mA per switch contact  
 DC power output: 12–18VDC, 1W.  
 Communication network: +/-13VDC max. (unloaded)  
 Max. revolutions: 170  
 Repeatability: +/-1/16 in. (+/-1.6mm) on a 10-ft. (3m) high shade (2½ in./6.4cm diameter tube)  
 Max. continuous run time: Min. four minutes (fractional horsepower, limited-duty cycle, tubular motor)

## Mechanical

### 120VAC, 60Hz

Stock Number	Power	Torque		RPM	Lift capacity*		ED Unit length**		Min. shade width***	
	(VAC)	(in.-lb.)	(Nm.)		(lb.)	(Nm.)	(in.)	(cm)	(in.)	(cm)
M5X7 0634 ^ S2	120	53.0	6	34	42.5	19.2	22½	57	25¾	65
M5X7 1234 ^ S2	120	106.0	12	34	85	38.5	25½	65	28¾	73
M5X7 1521 ^ S2	120	133.5	15	21	105	47.6	24	61	27½	69
M5X7 2016 ^ S2	120	178.0	20	16	140	63.5	24	61	28½	66
M5X7 2521 ^ S2	120	222.5	25	21	175	79.3	25½	65	30	76
M5X7 3016 ^ S2	120	267.0	30	16	210	95.2	25½	65	30	76
M5X7 3521 ^ S2	120	311.5	35	21	245	111.1	25½	65	30	76
M5X7 4016 ^ S2	120	356.0	40	16	280	126.9	25½	65	30	76

### 230VAC, 50Hz

Stock Number	Power	Torque		RPM	Lift capacity*		ED Unit length**		Min. shade width***	
	(VAC)	(in.-lb.)	(Nm.)		(lb.)	(Nm.)	(in.)	(cm)	(in.)	(cm)
M5X7 0626 ^ S1	230	53.0	6	26	42.5	19.18	22½	57	25¾	65
M5X7 1530 ^ S1	230	133.5	15	30	105	47.6	24¾	63	28¾	71
M5X7 2017 ^ S1	230	178.0	20	17	140	63.5	23½	60	28	71
M5X7 2514 ^ S1	230	222.5	25	14	175	79.3	23½	60	28	71
M5X7 3017 ^ S1	230	267.0	30	17	210	95.2	24¾	63	29½	74
M5X7 3514 ^ S1	230	311.5	35	14	245	111.1	24¾	63	29½	74
M5X7 4017 ^ S1	230	356.0	40	17	280	126.9	25	64	29½	75
M5X7 5014 ^ S1	230	445.0	50	14	350	158.7	25	64	29½	75

\* Lift capacity established on a 2½ in. (6cm) diameter tube.

\*\* ED unit length measured from the outside surface of the motor's head to the tip of the drive shaft.

\*\*\* Min. shade width considers a standard ¾ in. (2cm) drive-end shade cloth deduct and a standard ½ in. (1cm) idle-end shade cloth deduct (1/16 in./18mm from head to shade cloth).

Line voltage power connections (^)

- XG No connector
- AN Anderson disconnect
- WG WAGO disconnect
- NS NEMA 5-15P disconnect
- NR NEMA 5-15P right-angle disconnect

MechoSystems  
 Corporate Headquarters  
 42-03 35th Street  
 Long Island City, NY 11101

T: +1 (718) 729-2020  
 F: +1 (718) 729-2941  
 E: techsales@mechosystems.com  
 W: mechosystems.com

2



# WhisperShade IQ®2 Specifications

## Environmental

Temperature: 32–131 °F, 0–55 °C  
Humidity: Less than 90%, non-condensing  
Enclosure Rating: IP44

## Agency approvals



Certifications: ETL listed to UL 325 and CSA 22.2 no. 247, CE, CCC

Safety: EN60335-1 (May 2010, Ed. 5.0)  
EN60335-2-97 (January 2005, Ed. 2.1)

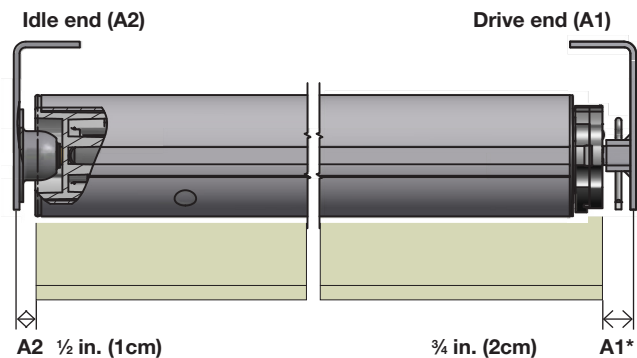
EMC:	EN55022(2006) + A1(2007)	Class-A limits
	EN61000-3-2(2006) + A2(2009)	Class-A limits
	EN61000-3-3(2008)	Class-A limits
	EN55024(1998) + A1(2001) + A2(2003)	Class-A limits
	- EN61000-4-2 (ESD)	4KV contact/8KV air
	- EN61000-4-3 (RF-radiated)	3V/m
	- EN61000-4-4 (electrical fast transient)	1KV (3-line)/0.5KV (2-line and I/O)
	- EN61000-4-5 (surge)	2KV (L-PE,N-PE); 1KV (L-N)
	- EN61000-4-6 (RF-conducted)	3V/m
	- EN61000-4-8 (magnetic field)	1A/m
	- EN61000-4-11 (voltage Dips)	per requirements

## Dimension and mounting

The power and communication cables both feed through the motor head located at either the right side (for right-drive motors) or the left side (for left-drive motors).

The motor is mounted inside the shade tube.

Additional deductions may be required.  
Contact your local representative for more information.



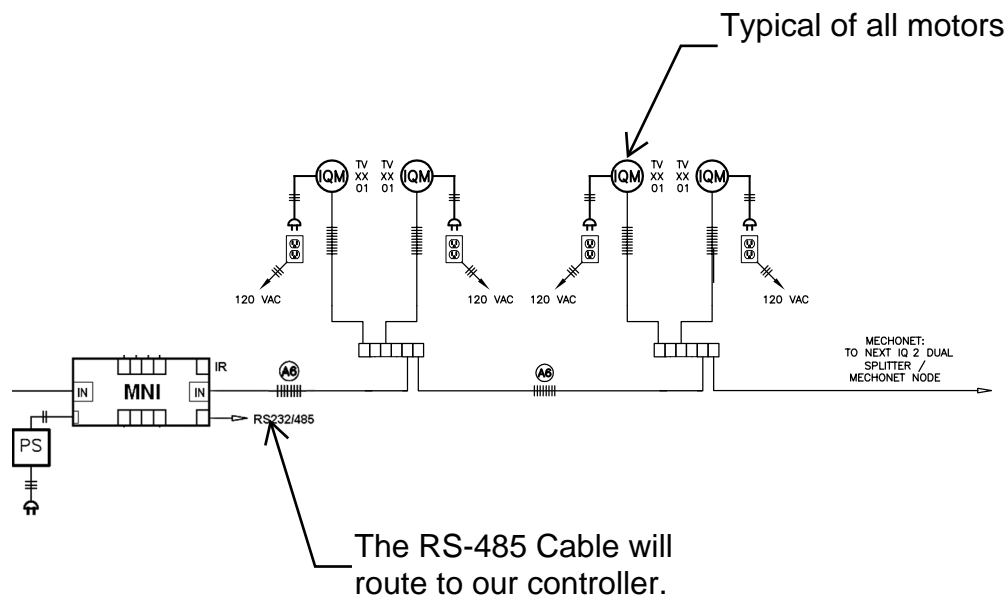
\* Note: The deductions shown are only applied with a 2½-in. (6cm) tube, or larger, utilizing MechoSystems' recessed idle-end plug.

MechoSystems  
Corporate Headquarters  
42-03 35th Street  
Long Island City, NY 11101

T: +1 (718) 729-2020  
F: +1 (718) 729-2941  
E: techsales@mechosystems.com  
W: mechosystems.com



# WhisperShade IQ<sup>®</sup>2 Typical System Wiring Diagram



## LOW VOLTAGE CABLE LEGEND

<b>A</b>	CATS/6E – FOR LOW VOLTAGE DRY CONTACT CONNECTIONS 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) OLYMPIC WIRE AND CABLE ( <a href="http://www.olympicwire.com">www.olympicwire.com</a> 1-800-526-2269) PART No. 3078M5FH. TERMINATION: RJ-45 MODULAR PLUG CRIMPED (USOC) ON BOTH ENDS  CATS/6E – FOR LOW VOLTAGE DRY CONTACT CONNECTIONS IN PLENUM AREAS 24AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) OLYMPIC WIRE AND CABLE ( <a href="http://www.olympicwire.com">www.olympicwire.com</a> 1-800-526-2269) PART No. 3604M55 SOLID CONDUCTOR RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS DISTANCE LIMITATION: 400' CUMULATIVE (FURNISHED & INSTALLED BY OTHERS)
<b>A1</b>	CATS/6E – CABLE FOR SDNET 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS. DISTANCE LIMITATION: 4000' CUMULATIVE. MAX. NETWORK NODES: 16. (FURNISHED & INSTALLED BY OTHERS)
<b>A2</b>	CATS/6E – CABLE FOR ETHERNET CONNECTIONS 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUGS CRIMPED (EIA568A) ON BOTH ENDS DISTANCE LIMITATION: 325'. MAX. NODES: 2. (FURNISHED & INSTALLED BY OTHERS)

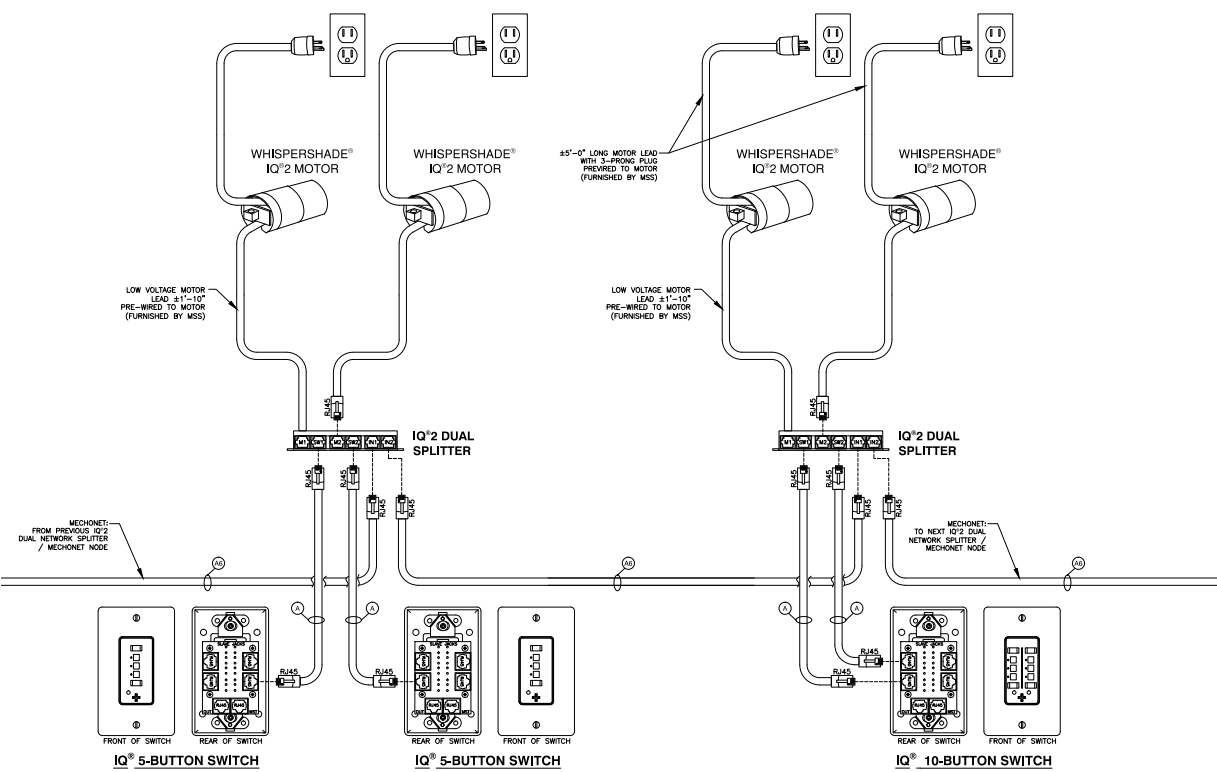
<b>A6</b>	CATS/6E – CABLE FOR MECHONET 24 AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS DISTANCE LIMITATION: 4000' CUMULATIVE. MAX. NODES: 250. (FURNISHED & INSTALLED BY OTHERS)
<b>C</b>	BELDEN TYPE 82760 18AWG 1STP (2-CONDUCTOR SHIELDED TWISTED PAIR) FOR PC INTERFACE/ANALOG I/O TO SENSOR CONNECTIONS PHOENIX CONNECTOR/CONNECTION "++" = RED "-" = BLACK "+" = BLUE/RED "-" = GREY/BLACK DISTANCE LIMITATION: 500' CUMULATIVE (FURNISHED & INSTALLED BY OTHERS)
<b>NOTES</b> 1. PARALLEL WIRING TO NEXT DEVICE PER BRANCH CIRCUIT CAPACITY. ALL CONNECTION MUST MEET NATIONAL AND LOCAL CODES AND REGULATIONS. 2. ADDRESS SCHEDULES REQUIRED. 3. MAXIMUM VOLTAGE FOR ALL UNMARKED CABLE IS 43.5 VDC. 4. LOW VOLTAGE CABLES SHOULD NOT BE ROUTED NEAR POWER LINES OR ELECTRICAL DEVICES SUCH AS LIGHTING BALLASTS, DIMMERS AND LED DRIVERS THAT MAY EXPOSE THE SYSTEM TO EXCESSIVE ELECTRICAL NOISE.	

MechoSystems  
Corporate Headquarters  
42-03 35th Street  
Long Island City, NY 11101

T: +1 (718) 729-2020  
F: +1 (718) 729-2941  
E: [techsales@mechosystems.com](mailto:techsales@mechosystems.com)  
W: [mechosystems.com](http://mechosystems.com)



# WhisperShade IQ®2 Point-to-Point Diagram



## LOW VOLTAGE CABLE LEGEND

A	CATS/6E – FOR LOW VOLTAGE DRY CONTACT CONNECTIONS 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) OLYMPIC WIRE AND CABLE (www.olympicwire.com 1-800-526-2269) PART No. 307BM5FH. TERMINATION: RJ-45 MODULAR PLUG CRIMPED (USOC) ON BOTH ENDS
	CATS/6E – FOR LOW VOLTAGE DRY CONTACT CONNECTIONS IN PLENUM AREAS 24AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) OLYMPIC WIRE AND CABLE (www.olympicwire.com 1-800-526-2269) PART No. 3604M55 SOLID CONDUCTOR RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS DISTANCE LIMITATION: 400' CUMULATIVE (FURNISHED & INSTALLED BY OTHERS)

A1	CATS/6E – CABLE FOR SDNET 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS. DISTANCE LIMITATION: 4000' CUMULATIVE. MAX. NETWORK NODES: 16. (FURNISHED & INSTALLED BY OTHERS)
A6	CATS/6E – CABLE FOR MECOINET 24 AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUGS CRIMPED (USOC) ON BOTH ENDS DISTANCE LIMITATION: 4000' CUMULATIVE. MAX. NODES: 250. (FURNISHED & INSTALLED BY OTHERS)
<b>NOTES</b> 1. PARALLEL WIRING TO NEXT DEVICE PER BRANCH CIRCUIT CAPACITY. ALL CONNECTION MUST MEET NATIONAL AND LOCAL CODES AND REGULATIONS. 2. ADDRESS SCHEDULES REQUIRED. 3. MAXIMUM VOLTAGE FOR ALL UNMARKED CABLE IS 43.5 VDC.	

## Warranty

Limited warranty on motors and electronics are free of manufacturing defects in factory materials or workmanship for five years from the date of shipment.

## Technical support

MechoSystems  
T: +1 (718) 729-2020, x2006  
E: techsupport@mechosystems.com  
W: mechosystems.com

MechoSystems reserves the right to make improvements or changes to its products without prior notice. However, every attempt is made to ensure the information herein is accurate and up to date. Verify with the MechoSystems staff to confirm the product's availability, latest specifications, and suitability for your application.

MechoSystems  
Corporate Headquarters  
42-03 35th Street  
Long Island City, NY 11101

T: +1 (718) 729-2020  
F: +1 (718) 729-2941  
E: techsales@mechosystems.com  
W: mechosystems.com

