TOSO

Motorized Roman Shade

Liberta Plus

Made in Japan

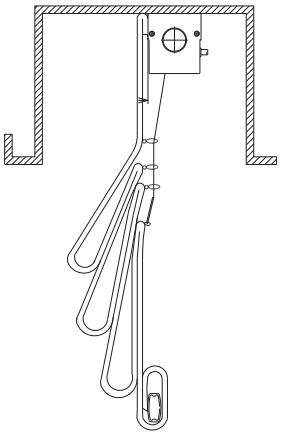
- The compact design fits neatly into a small curtain box.
- Synchronous operation enables perfect alignment even side by side units.
- Maximum fabric weight is up to 10 kg (22 lb). (Recommend to residence or hotel guest room)

Liberta Plus

Liberta Plus's Unique Features

The compact design fits neatly into a small curtain box.

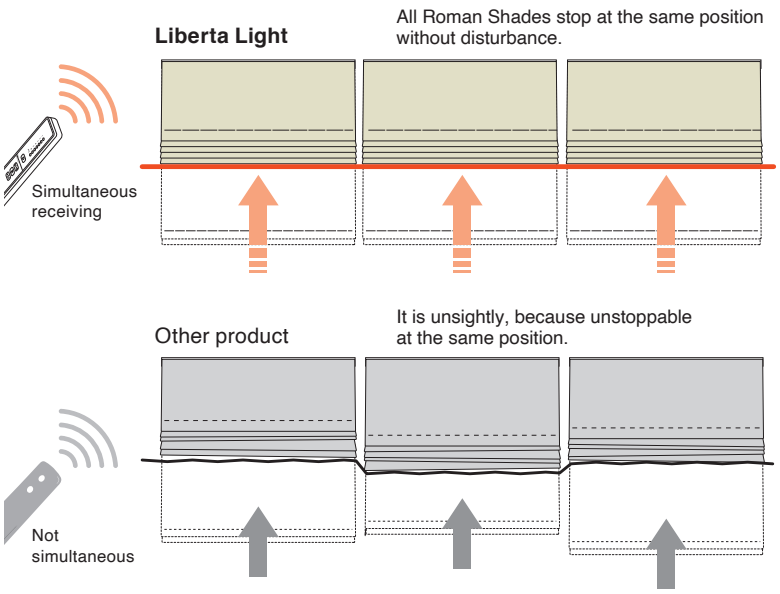
All the necessary parts are built-in to the compact head rail so that it does not interfere with the interior design and can be fitted in a narrow curtain box.



Neat Appearance

Synchronized operation

When operating shades of the same height side by side, each shade synchronize in the same height and speed.

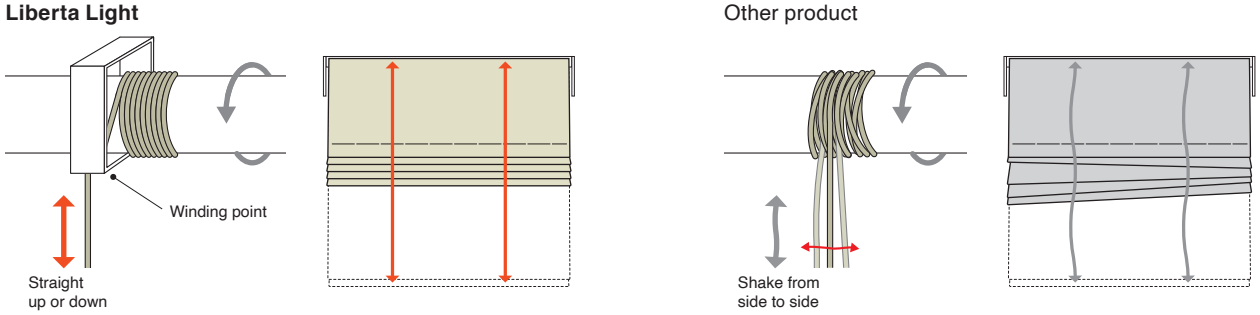


Maximum fabric weight is up to 10 kg (22 lb), the maximum size is up to 4.0 m (157″).

Suitable size and specification for residence or hotel guest rooms especially.

Single-point Coiling Drum

The Single-point Coiling Drum prevents entanglement when winding the Lift Cord.
As the shades move up and down, they do not move from side to side, so they move straight.



Motor Specifications

Power Source Voltage		V	AC100–220
Frequency		Hz	50 / 60
Rated Torque		Nm	2.45
Power Consumption	Operation	W	38
	Standby	W	0.3
Operating Voltage		V	DC 12
Operating Consumption		mA	6
Operating Temperature Range		°C	0 to 50 (without condensation)
Rated RPM		rpm	30
Operating Time		sec./m	20
Rated Running Time		sec.	130

Allowable Size

Style	Product Width	Product Height
Plain	850–4,000 mm (33–157″)	500–4,000 mm (20–157″)
Sharp (with Rod)		
Balloon		

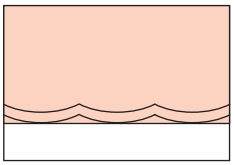
Maximum Screen Weight

10.0 kg (22 lb)

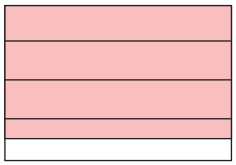
*Even if the desired dimensions are available, the excess weight may make it impossible to provide the desired shade.

Style Lineup

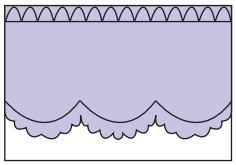
Plain style



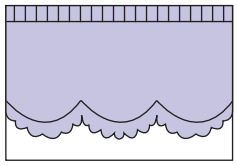
Sharp style (with rods)



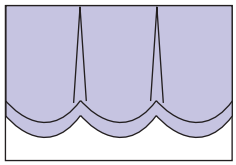
Balloon style (pleated)



Balloon style (gathered)



Balloon style (box)



Note: The Plain, Sharp (with Rods), and Balloon styles hang flat when lowered.

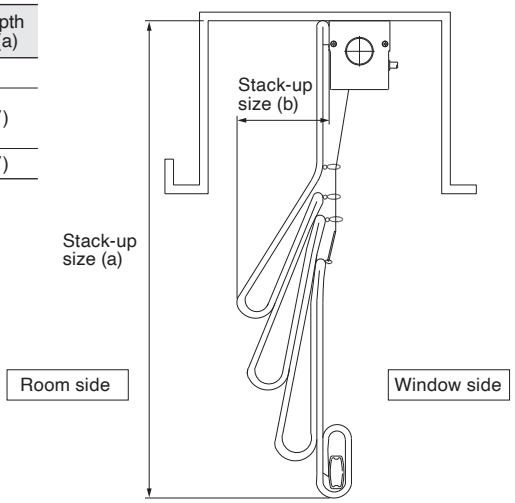
Calculation of Total Weight

Product Weight = (1) Unit Weight + (2) Screen Weight			
(1) Unit Weight	{ (0.9 × W) / 1,000 mm } + 2.0 kg { (0.9 × W) / 39″ } + 2.0 kg		
(2) Screen Weight	a. Fabric Weight	Fabric Weight (kg / m^2) × { (W / 1,000 mm) × (H / 1,000 mm) } * Fabric Weight (kg / m^2) × { (W / 39″) × (H / 39″) } *	
	b. Components Weight	Plain	{ 0.28 × (W / 1000 mm) } + { 0.04 × (W / 1000 mm) × (H / 1000 mm) } { 0.28 × (W / 39″) } + { 0.04 × (W / 39″) × (H / 39″) }
		Sharp	{ 0.28 × (W / 1000 mm) } + { 0.23 × (W / 1000 mm) × (H / 1000 mm) } { 0.28 × (W / 39″) } + { 0.23 × (W / 39″) × (H / 39″) }
		Balloon	{ 0.09 × (W / 1000 mm) } + { 0.04 × (W / 1000 mm) × (H / 1000 mm) } + 0.16 kg { 0.09 × (W / 39″) } + { 0.04 × (W / 39″) × (H / 39″) } + 0.16 kg

*In case of Balloon style: Fabric Weight (kg / m^2) × 2 × { (W / 1,000 mm) × (H / 1,000 mm) } , Fabric Weight (kg / m^2) × 2 × { (W / 39″) × (H / 39″) }

Stack-up Guide

Style	Product Height	Recommended Ring Interval	Stack-up Height Dimension (a)	Stack-up Depth Dimension (a)
Plain	500–4,000 mm (20–158″)	200 mm (7.9″)	260 mm (10.2″) + H / 80	80 mm (3.2″)
Sharp	500–3,000 mm (20–118″)	150 mm (5.9″)	310 mm (12.2″) + H / 30	100 mm (3.9″)
	3,010–4,000 mm (119–157″)	300 mm (11.8″)	460 mm (18.1″) + H / 60	
Balloon	———	150 mm (5.9″)	670 mm (26.4″) + H / 60	200 mm (7.9″)



Number of Swags and Number of Fabric Meter Required

Plain Style and Sharp Style 

■ Number of Swags

Product Width	850–1,000 mm 33–39″	1,010–1,400 mm 40–55″	1,410–1,900 mm 56–75″	1,910–2,400 mm 75–94″	2,410–2,900 mm 95–114″	2,910–3,400 mm 115–134″	3,410–4,000 mm 134–157″
Number of Swag(s)	2	3	4	5	6	7	8

*For ordering, round down the nearest 10 mm (.39″) in width and height.

■ Calculation of Required Fabric

For Plain Fabric	Product height + 300 mm (11.8″)
For Required Vertical Pattern Matching *	Product height + 300 mm (11.8″) + 1 repeat vertical pattern

■ Others

For Required Horizontal Pattern Matching *	Fabric width – 1 repeat horizontal pattern (round down the last two digits) = Effective fabric width ex.) fabric width: 1,300 mm (51″), 1 repeat horizontal pattern: 50 mm (2.0″) 1,300 mm (51″) – 50 mm (2.0″) = 1,250 mm (49″) → 1,200 mm (47″) = Effective fabric width
Horizontal Use Fabric	Effective fabric width = Product height + 300 mm (11.8″) or more Effective fabric width ≧ Product height + 300 mm (11.8″) Number of fabric meter required = Product width + 200 mm (7.9″)

*For patterned fabrics, specify the position of the pattern.

Calculation example

Product width 1,800 mm (71″) × Product height 1,600 mm (63″)—Fabric width: 1,000 mm (39.3″), for plain fabric (no pattern matching required)
Number of fabric meter required
Required fabric length [1,600 mm (63″) + 300 mm (11.8″)] ÷ 1,000 × Required number of fabrics (2 sheets) = 3.8 m (150″)

Balloon Style

■ Number of Swags

Product Width	850–1,000 mm 33–39″	1,010–1,400 mm 40–55″	1,410–1,900 mm 56–75″	1,910–2,400 mm 75–94″	2,410–2,900 mm 95–114″	2,910–3,400 mm 115–134″	3,410–4,000 mm 134–157″
Number of Swag(s)	2	3	4	5	6	7	8

*For ordering, round down the nearest 10 mm (.39″) in width and height.

■ Calculation of Required Fabric

For Plain Fabric	With frills: Product height + 700 mm (27.5″) No frills: Product height + 300 mm (11.8″)
For Required Vertical Pattern Matching *	With frills: Product height + 700 mm (11.8″) + 1 repeat vertical pattern No frills: Product height + 300 mm (11.8″) + 1 repeat vertical pattern

■ Others

For Required Horizontal Pattern Matching *	Fabric width – 1 repeat horizontal pattern (truncate the last two digits) = Effective fabric width ex.) fabric width: 1,300 mm (51″), 1 repeat horizontal pattern: 50 mm (2.0″) 1,300 mm (51″) – 50 mm (2.0″) = 1,250 mm (49″) → 1,200 mm (47″) = Effective fabric width
Horizontal Use Fabric	With frills: Effective fabric width = Product height + 700 mm (27.5″) or more No frills: Effective fabric width = Product height + 300 mm (11.8″) or more With frills: Effective fabric width ≧ Product height + 700 mm (27.5″) No frills: Effective fabric width ≧ Product height + 300 mm (11.8″) Gathered or pleated: Number of fabric meter required = Product width × 2 + 400 mm (15.7″) Box: Number of fabric meter required = Product width × 2 + 200 mm (7.9″)

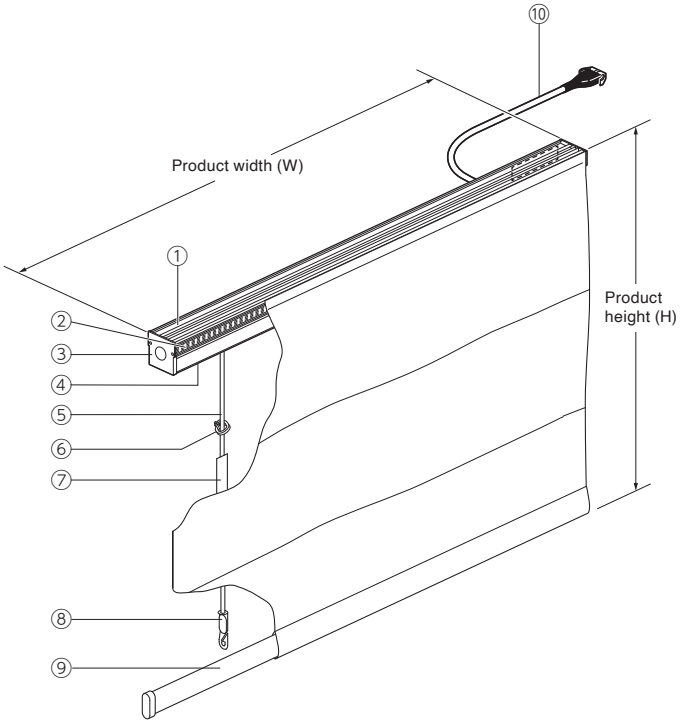
*For patterned fabrics, specify the position of the pattern.
*The folds of the box are no frills.

Calculation example

Product width 2,300 mm (90″) × Product height 2,000 mm (79″)—Fabric width: 1,000 mm (39″), for plain fabric (no pattern matching required)
Number of fabric meter required
With frills: Required fabric length [2,000 mm (79″) + 700 mm (27.5″)] ÷ 1,000 × Required number of fabrics (6 sheets) = 16.2 m (637″)
No frills: Required fabric length [2,000 mm (79″) + 300 mm (11.8″)] ÷ 1,000 × Required number of fabrics (6 sheets) = 13.8 m (543″)

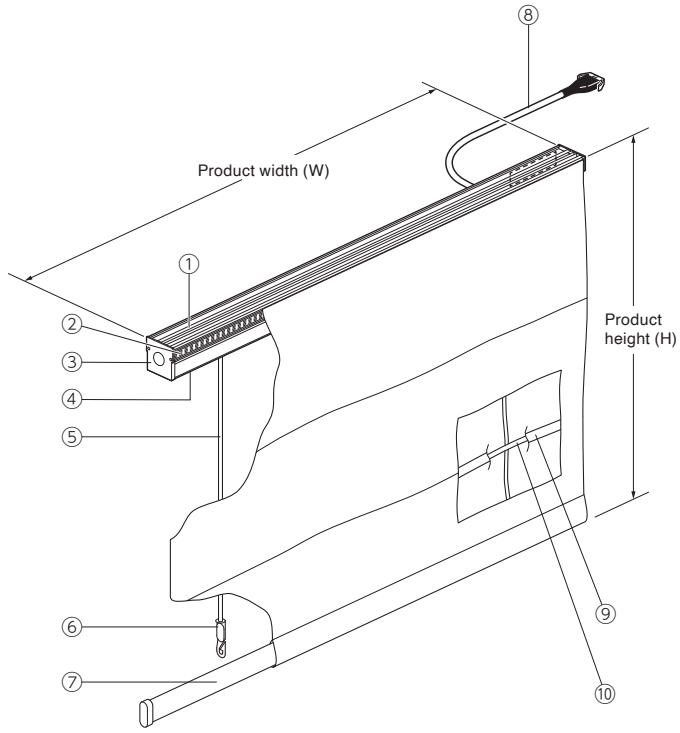
Structure Drawing in Each Style

Plain Style



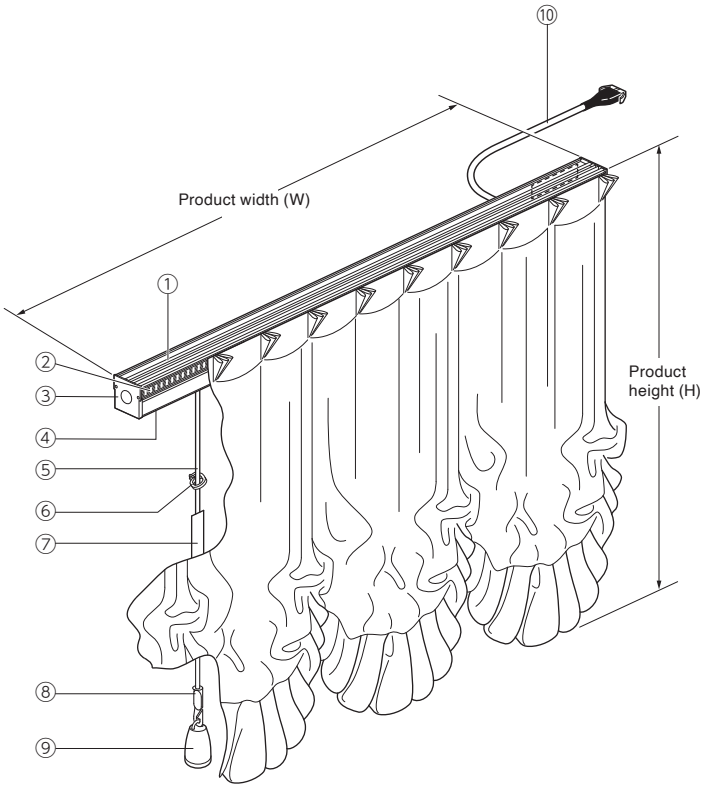
No.	Product Name	Materials/ Specifications	Color
①	Head Rail	Aluminum	White
②	Hook and Loop Fastener (Hook Side) Slide-in Type (50 m)	Chemical fiber	White
③	Side Cover	Molded resin	White
④	Head Rail Cover	Molded resin	Gray
⑤	Lift Cord	Chemical fiber	White
⑥	RS Ring for Cord	Molded resin	Clear
⑦	RS Tape With Loop	Chemical fiber	Clear
⑧	RS Cord Adjuster	Molded resin	Clear
⑨	Weight Bar	Steel	White
⑩	Power Supply	VCTF0.75sq × 3C (0.3 m)	White

Sharp Style



No.	Product Name	Materials/ Specifications	Color
①	Head Rail	Aluminum	White
②	Hook and Loop Fastener (Hook Side) Slide-in Type (50 m)	Chemical fiber	White
③	Side Cover	Molded resin	White
④	Head Rail Cover	Molded resin	Gray
⑤	Lift Cord	Chemical fiber	White
⑥	RS Cord Adjuster	Molded resin	Clear
⑦	Weight Bar	Steel	White
⑧	Power Supply	VCTF0.75sq × 3C (0.3 m)	White
⑨	RS Shaper Tape	Chemical fiber	White, Beige, Gray, Brown
⑩	RS Shaper Rod	Molded resin	White

Balloon Style



Product Length	Frill Length
1,000—2,200 mm (39–87″)	120 mm (4.7″)
2,210—3,000 mm (87–118″)	160 mm (6.3″)
3,010—4,000 mm (119–157″)	200 mm (7.9″)

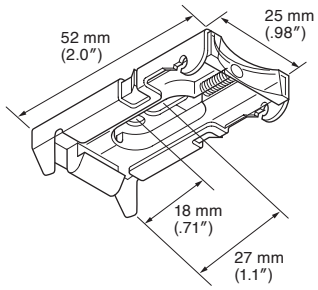
*No hem frills on the box

No.	Product Name	Materials/ Specifications	Color
①	Head Rail	Aluminum	White
②	Hook and Loop Fastener (Hook Side) Slide-in Type (50 m)	Chemical fiber	White
③	Side Cover	Molded resin	White
④	Head Rail Cover	Molded resin	Gray
⑤	Lift Cord	Chemical fiber	White
⑥	RS Ring for Cord	Molded resin	Clear
⑦	RS Tape With Loop	Chemical fiber	Clear
⑧	RS Cord Adjuster	Molded resin	Clear
⑨	Weight Bar	Lead	White
⑩	Power Supply	VCTF0.75sq × 3C (0.3 m)	White

Component Drawing

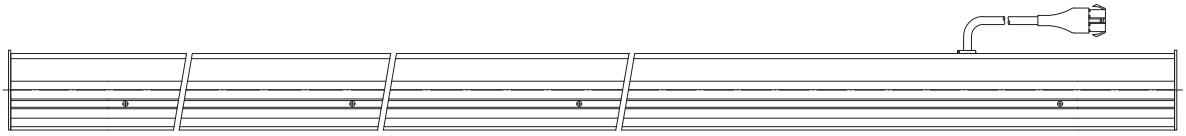
Bracket

Ceiling Bracket (Option)

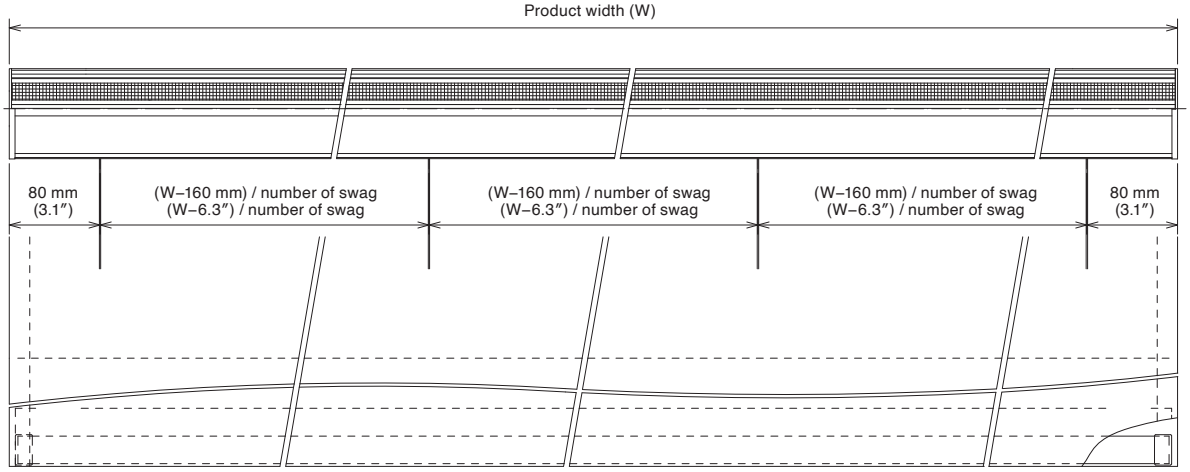


Product Drawing

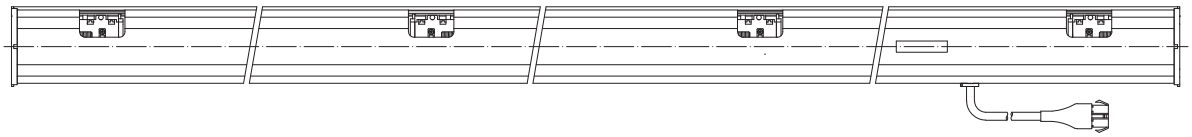
View from the Ceiling



Front View

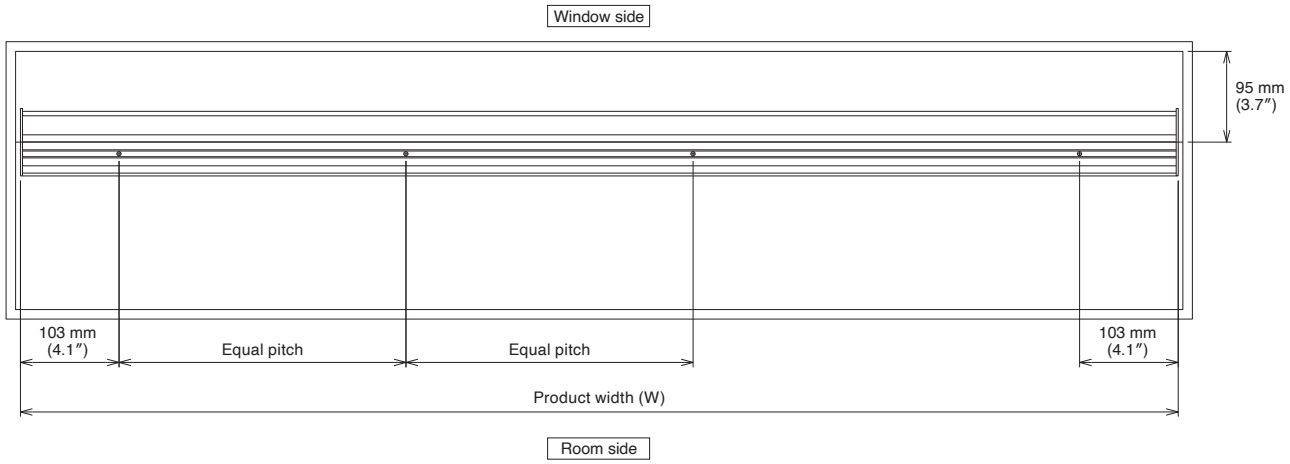


View from the Beneath of the Blind

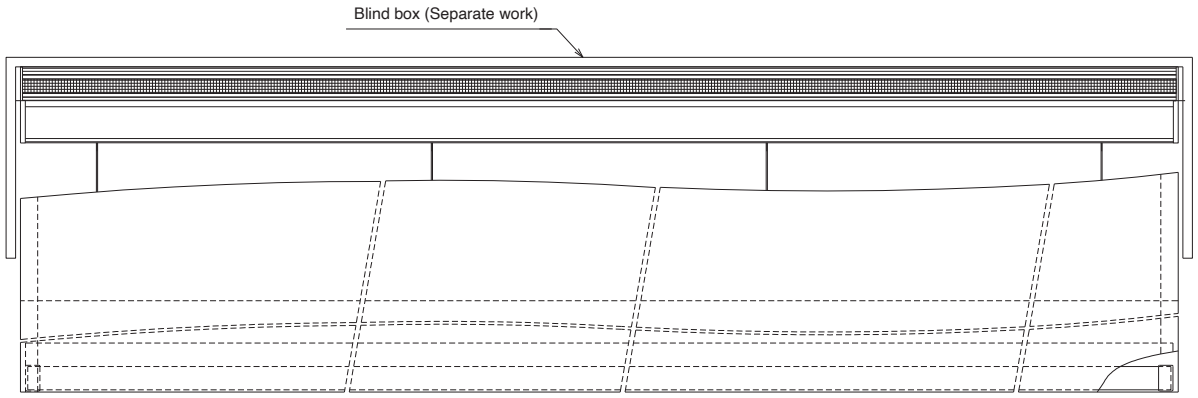


Overall Structure Drawing

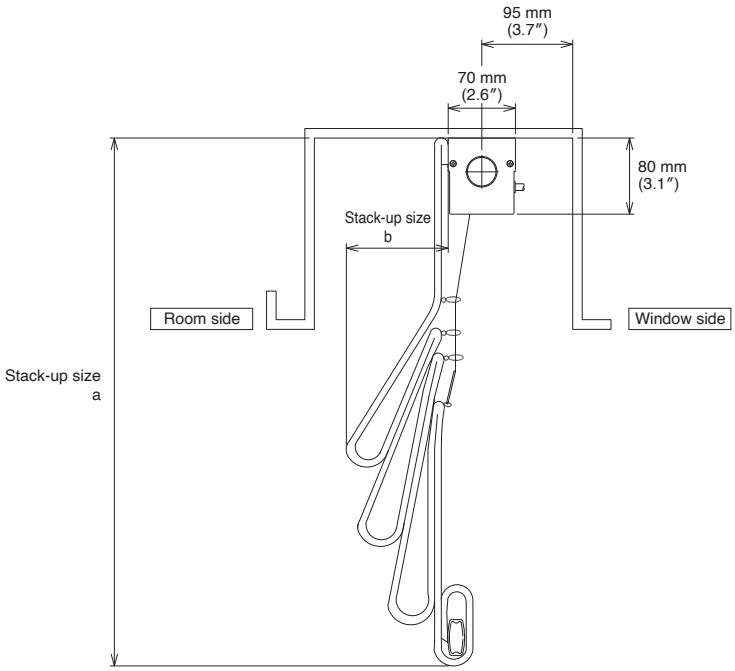
Plan



Elevation



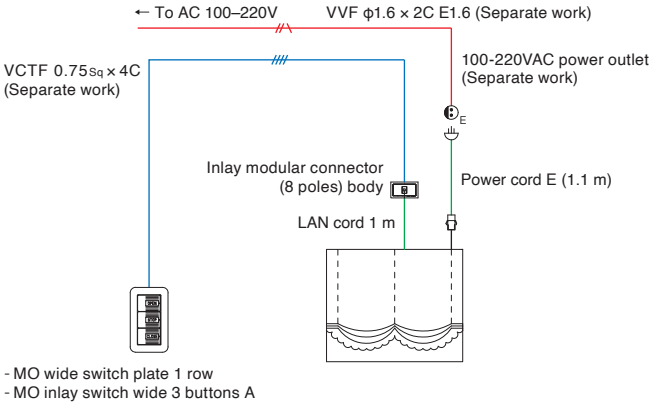
Section



Basic Wiring Diagram

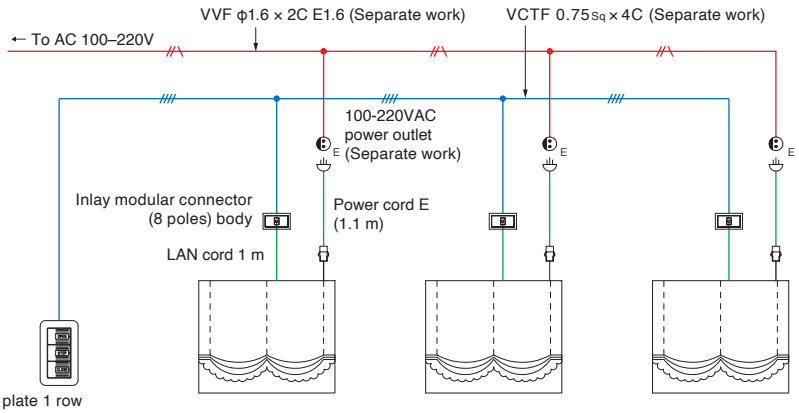
Three Button Switch (Dry Contact)

Single Operation



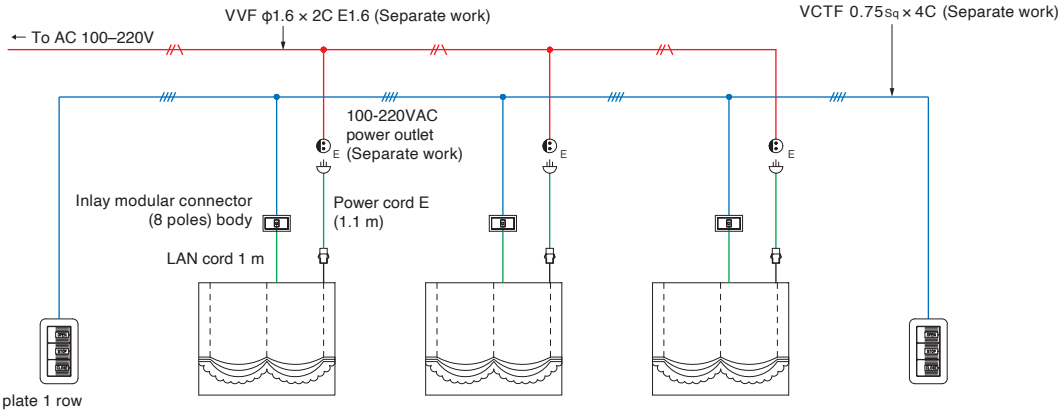
- MO wide switch plate 1 row
- MO inlay switch wide 3 buttons A

Simultaneous Operation



- MO wide switch plate 1 row
- MO inlay switch wide 3 buttons A

Operation from Two Locations

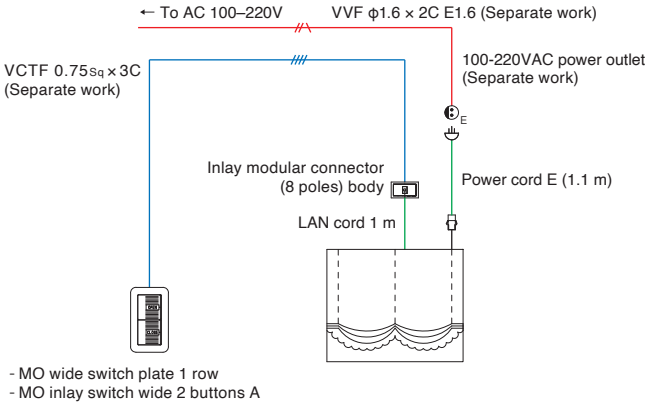


- MO wide switch plate 1 row
- MO inlay switch wide 3 buttons A

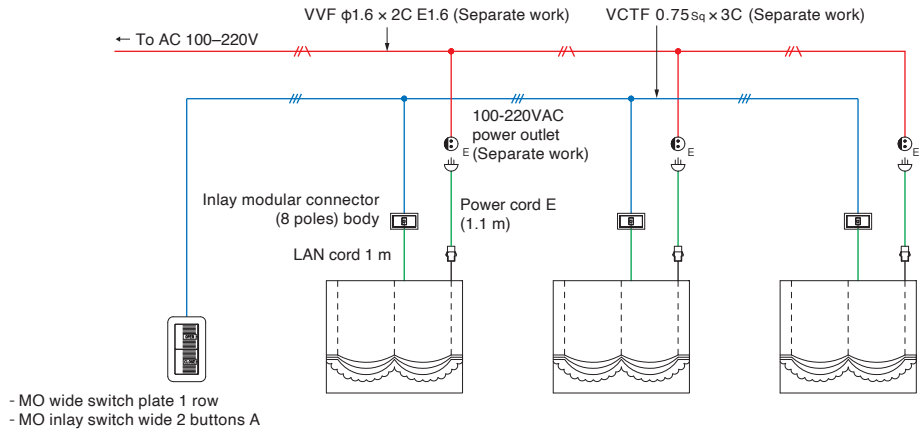
Explanatory notes: Power supply, Low voltage control line, TOSO standard (order separately), Main body attachment

Two Button Switch (Dry Contact)

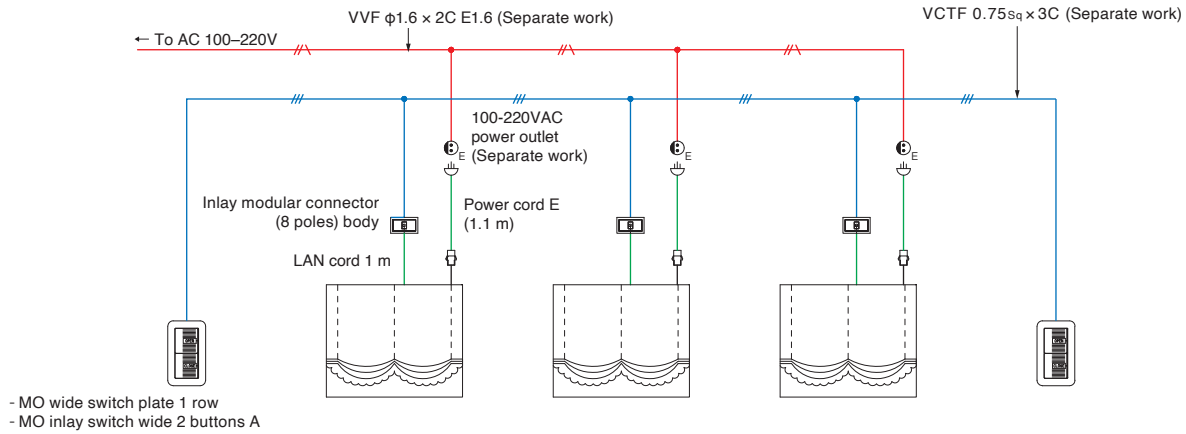
Single Operation



Simultaneous Operation



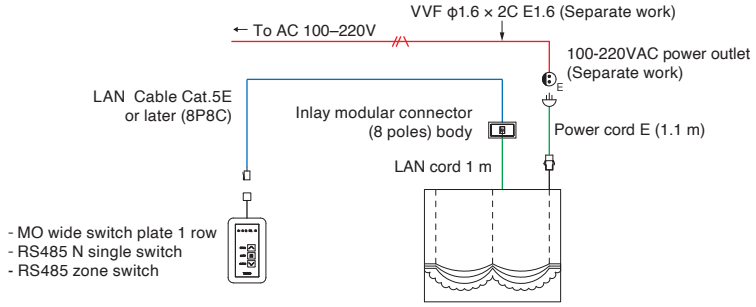
Operation from Two Locations



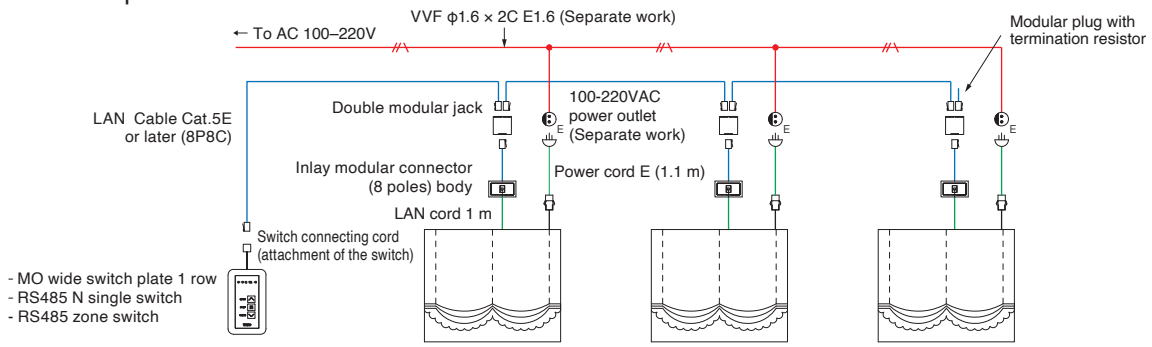
Explanatory notes: Power supply, Low voltage control line, TOSO standard (order separately), Main body attachment

RS485 N Single Switch, RS485 Zone Switch, RS485 Multi-zone Switch (RS485 Switch)

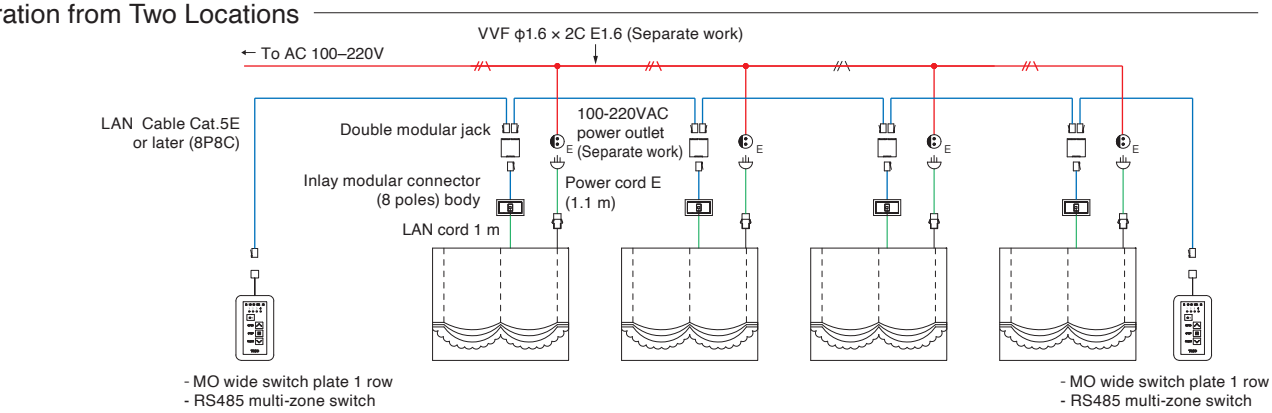
Single Operation



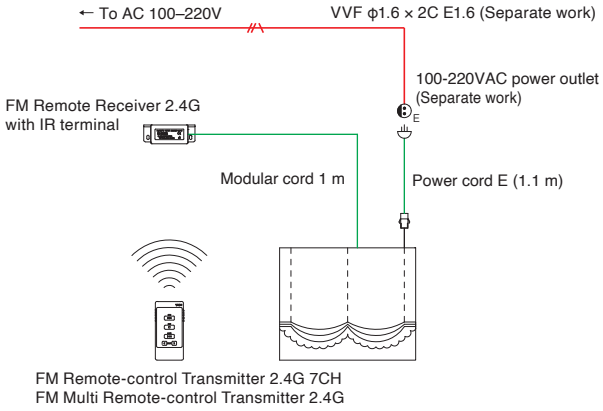
Simultaneous Operation



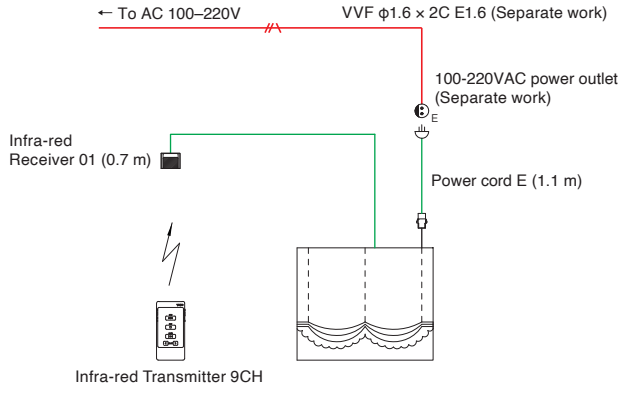
Operation from Two Locations



FM Remote-control Operation



Infra-red Remote-control Operation

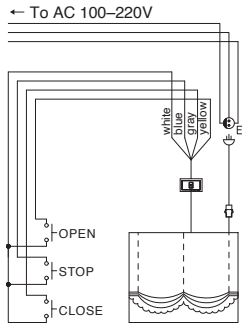


Explanatory notes: Power supply, Low voltage control line, TOSO standard (order separately), Main body attachment

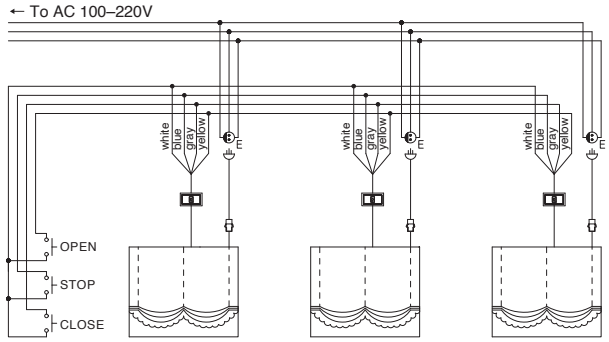
Basic Connecting Diagram

Three Button Switch

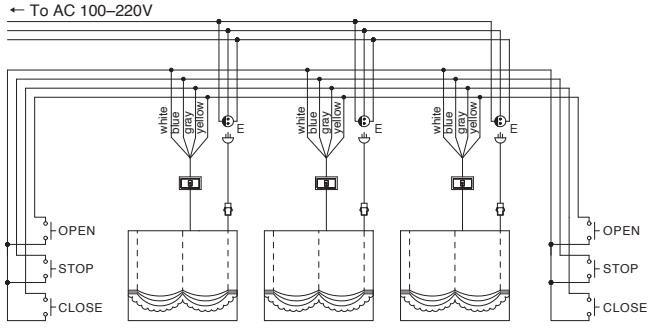
Single Operation



Simultaneous Operation

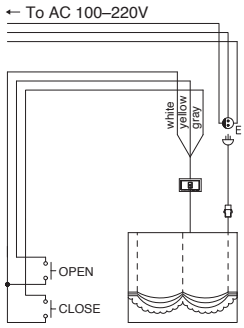


Operation from Two Locations

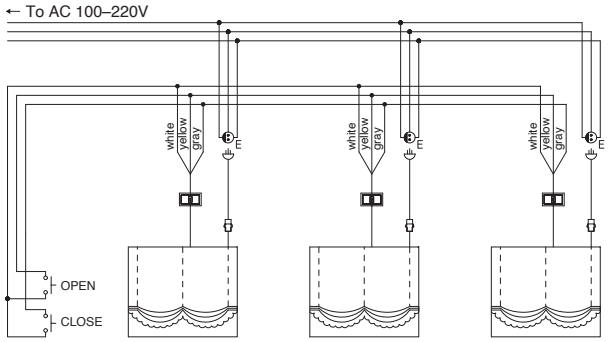


Two Button Switch

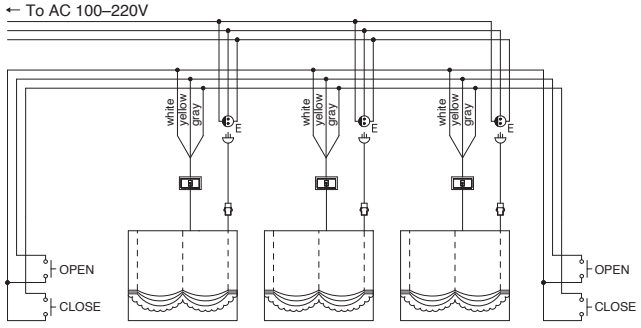
Single Operation



Simultaneous Operation

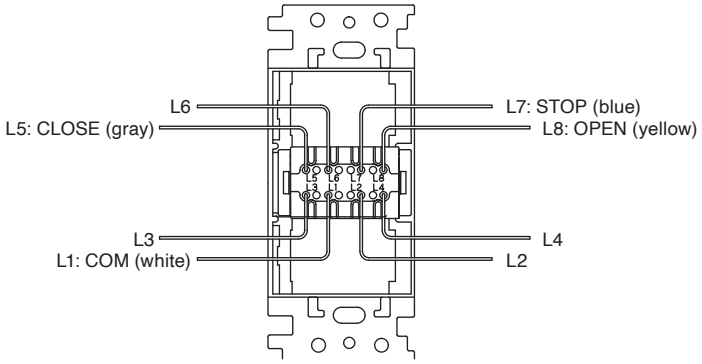


Operation from Two Locations



Connection Details for Inlay Modular Connector (8 poles)

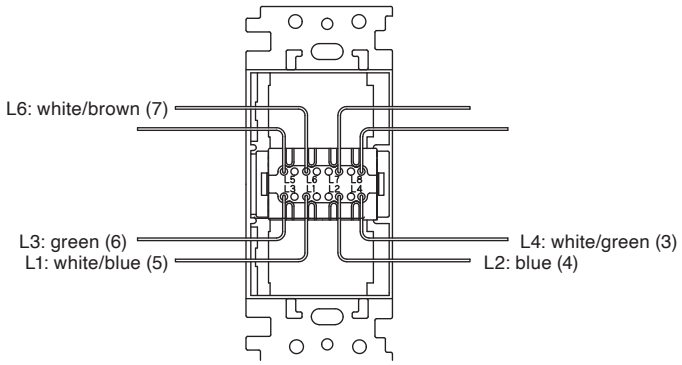
Dry Contact Switch



L1	white	COMMON
L2	black	—
L3	Red	—
L4	green	—
L5	gray	CLOSE
L6	brown	—
L7	blue	STOP
L8	yellow	OPEN

*Unused wires must be insulated.

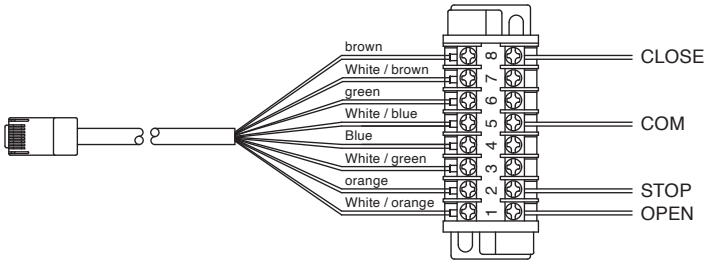
RS485 Switch



L1	white/blue (5)	GND
L2	blue (4)	+ 12V
L3	green (6)	485 (A)
L4	white / green (3)	FG
L5	—	—
L6	white / brown (7)	485 (B)
L7	—	—
L8	—	—

*Unused wires must be insulated.

Connection Details for LAN Cord with Terminal Block

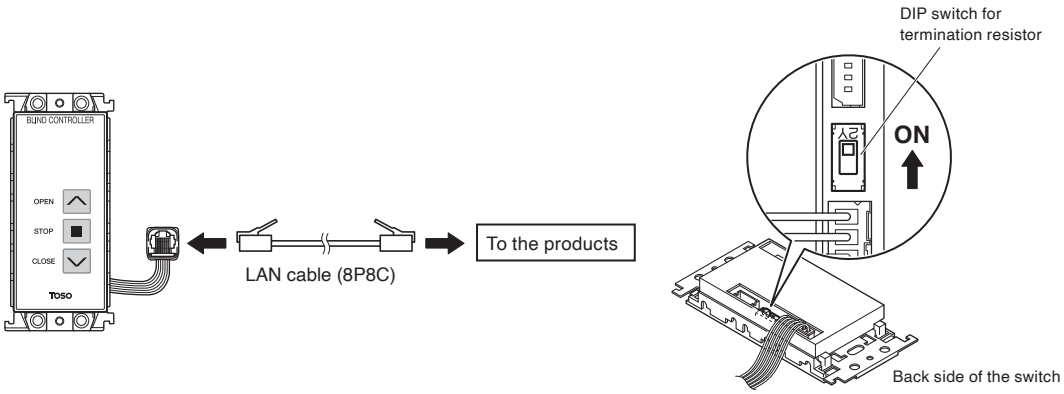


1	white / orange	OPEN
2	orange	STOP
3	white / green	FG
4	Blue	+ 12V
5	white / blue	COMMON
6	green	485 (A)
7	white / brown	485 (B)
8	brown	CLOSE

RS485 Switch Connection Method

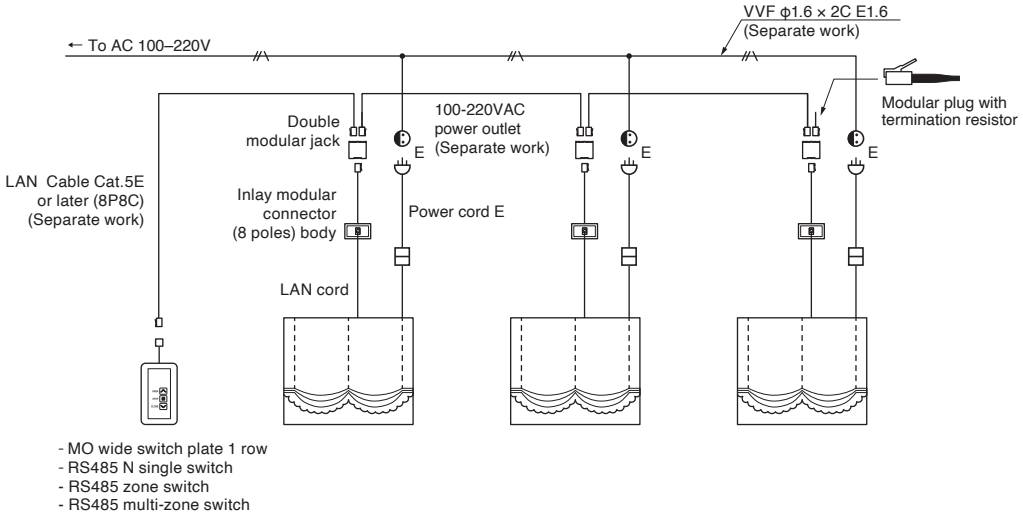
• For operation multiple units, it is necessary to install a termination resistor at the end of LAN cables.

Connection Part at RS485 Switch



*For using a termination resistor, slide the DIP switch upward.

Installation of Termination Resistor to the Products



*For connecting multiple units with LAN cables, use “Double Modular Jack”. (Please purchase these locally).