OMRON

Model FLV-TCC

Camera-mount Lighting Controller

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.

Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:

Importer in EU: Manufacturer: Omron Furone B V

Omron Corporation, Shiokoji Horikawa, Shimogyo-ku, Wegalaan 67-69 Kvoto 600-8530 JAPAN

2132 JD Hoofddorp, The Netherlands

The following notice applies only to products that carry the CE mark:

This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

Please see the following URL for Korean KC mark compliance information http://www.rra.go.kr/selform/OMR-FLV-TCC3HB

http://www.rra.go.kr/selform/OMR-FLV-TCC4

2279800-0E

© OMRON Corporation 2013-2025 All Rights Reserved.

PRECAUTIONS ON SAFETY

Meanings of Signal Words

Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Alert Statements in This Sheet

⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



Do not disassemble the product. Doing so may cause electric shock due to the high voltage portion. Burn also may result due to high temperature. Do not attempt to disassemble, deform by pressure, incinerate, repair, or modify this product.



Looking into the LED light continuously may occasionally cause visual impairment. Do not look directly into the LED light.

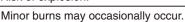


⚠ CAUTION

Do not use it exceeding the rated voltage. There is a possibility of failure and fire.



Do not connect amplifier units to AC power supply. Risk of explosion.



Do not touch the case as it is very hot while the unit is operating or immediately after turning OFF the power



PRECAUTIONS FOR SAFE USE

Please observe the following precautions for safe use of the products

- 1 Installation Environment
- Do not use the product in environments where it can be exposed to inflammable/explosive gas.
 To secure the safety of operation and maintenance, do not install the product close to
- high-voltage devices and power devices.

 When mounting this product in the camera and using, do not touch the main unit with the conductive parts (metal parts) of peripheral devices. When touching conductive parts of peripheral devices, it's connected with 0V of this product and a circuit inside the camera, and a eakdown and a malfunction are caused. To use the main unit, keep it well away from those
- 2.Power Supply and Wiring
- Be careful when using a power supply with the overcurrent detection function. This sensor uses a DC-DC converter for the power supply circuit. The protection circuit may be activated due to
- surge current when using a power supply with the overcurrent detection function.

 Recommended power supply: S8VS-06024 (OMRON: 24 VDC 2.5 A 60 W)

 Do not apply voltages or AC power supplies that exceed the rated voltage (24 VDC±10%).

- Do not reverse the polarity of the power connection.
 Use a load that is equal to or less than the rating.
 Do not share the power supply line with other devices but Image Sensor Controller (FH or FZ5).
 High-Voltage lines and power lines must be wired separately from this product. Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or devenee.
- Take sufficient safety measures such as fail-safe circuit to use the product.
- To wire the terminal block, connect a applicable cord (AWG12-26 with a 10 mm margin for work). Do not connect an inapplicable cable with the terminal block for 24V external power
- Supply power from a DC power supply for which measures have been applied to prevent high voltages (e.g., a safety extra low voltage circuit).

 The length of the power supply cable should be as short as possible.
- Tighten the mounting screw to the torque specified in this instruction sheet.
 Always turn off the power of the main unit before taking the following actions. Not doing so may result in malfunction.

- Connecting/disconnecting the lighting connecting connector
 Connecting/disconnecting the 24 V external power supply input terminal block
 Connecting/disconnecting the camera connecting cable
 Be sure to remove the terminal block from of the main unit when wiring the product to the 24 V external input terminal block.
- Do not use in safety circuits for atomic energy or that are critical for human life
- Do not attempt to disassemble, deform by pressure, incinerate, repair, or modify this product.
 When disposing of the product, treat as industrial waste.
 Connect only to the applicable lighting (FLV series), camera (FH-S series, FZ-S series) and image sensor controller (FH series, FZ5 series). Use of other devices may result in fire, explosion,
- malfunction or failure.

 If you notice an abnormal condition such as a strange odor, extreme heating of the unit, or smoke,
- immediately stop using the product, turn off the power, and consult your dealer • Do not drop or impose excessive shock to the product. Doing so may result in damage to the
- This product might be heated to around 70°C in the room temperature environment. So, do not
- touch it directly before putting heatproof gloves.

 Ensure that all components which have locking mechanisms are locked before using the product.
- Be careful not to drop the product when opening the crate and carrying it.
- Regulations and standards
 This lighting complied with the EN standard (EN61326-1)
- Also, the following condition is applied to the immunity test of this product.

 There may be cases that Lighting brightness fluctuate Max 10%.

PRECAUTIONS FOR CORRECT USE

Observe the following to prevent failure, malfunctioning, and adverse effects on performance and the

1 Installation site

- Do not install in the following locations:
- Locations where the ambient temperature exceeds the rated temperature range.
 Locations subject to sudden temperature changes (where condensation will for Locations where the relative humidity is below or above 35 to 85% RH.
 Locations where there are corrosive or flammable gases.
- Locations where there is dust salt or iron powder.
- Locations where the device will be subject to direct vibration or shock.
 Locations where there is strong scattered light (laser light, arc welding light, ultraviolet light, etc.)
 Locations exposed to direct sunlight or next to a heater.
- Locations where there is splashing or spraying of water, oil, or chemicals
 Locations where there is a strong electrical or magnetic field.

- · Do not install the product close to high-voltage devices and/or power devices in order to secure the safety of operations and maintenance.

 • When this product and a cable are attached or removed, be sure to turn OFF the power of the
- Never use paint thinner, benzen, acetone, or kerosene to clean the product. Wipe the contamination with a soft cloth included a small amount of alcohol.
- Nower and cable connections
 Be sure to connect the dedicated lighting (FLV series). We can offer no warranty in the event you connect the lighting other than the dedicated one.
- When using a commercially available switching regulator, make sure that the Frame ground • If there are surges on your power line, connect a surge absorber as appropriate for your conditions
- of dec.
 before turning on the power after the wiring is completed, verify that the power is correct, that there are no incorrect connections such as a shorted load circuit, and that the load current is suitable.
- Incorrect wiring may cause damage and failures.

 Use the product with the specified voltage. Applying a voltage or AC voltage that exceed the rating may result in burning or explosion of circuit components.
- Use the dedicated camera and cable.
 For cable extension between the lighting and lighting controller, use an optional extension cable or branching cable. An extension cable, for standard lighting (FLV-XC R) and for spot lighting (FLV-XC EP/-XC EPR) and a branch cable, for standard lighting (FLV-XCS) is
- When using the 24V external power supply, turn ON the power of this product and Image Sensor Controller at the same time or this product first.
- Controller at the same time or this product first.

 The bending radius for the wiring of the camera or lighting cable must be at least 20 mm.

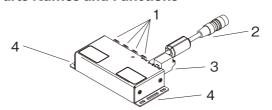
 Do not look directly into the lighting as it momentarily emits light with the maximum brightness.

 When noise gets on the power supply supplied to this product from outside (DC24V), when changing the lighting condition by this product, there is a possibility that the set value isn't renewed, so do the following action.
- It's connected by the most short distance as much as possible by a code thicker than AWG22
- between the 0V of power supply to this product and a image sensor controller (FH or FZ5).

 The power supply to this product and a image sensor controller (FH or FZ5) is made something
- Warming Up
 After turning on the power supply, allow the Controller to stand for at least 30 minutes before use.
 As the circuit is unstable immediately after the power ON, brightness may gradually change. 5. Light Intensity Adjustment
- This product provides two light control methods: duty light control and voltage light control/current light control. Duty light control is recommended by usual use, but as duty light control operates with the frequency of 100 kHz, use of voltage light control/current light control is recommended when the shutter speed is set as high speed.

 • Some lightings may not emit light with the gradation of 100 or less when using voltage light

Parts Names and Functions



No.	Name	Description	
1	Lighting connecting	Connects the LED lighting.	
	connector		
2	Camera connecting	Connects to the extension connector of	
	cable	the camera.	
3	24 V external power	Connects the 24 VDC power supply.	
	supply input terminal block	(FLV-TCC1EP is excluded.)	
4	Mounting hole for fixing	Holes to mount screws to secure the	
	screw	Lighting Controller to a mounting plate	
		or device.	

Specifications

item			Model	FLV-TCC4	FLV-TCC1	FLV-TCC3HB	FLV-TCC1EP	
Number of connectable lightings		ole lightings	4 of standard lighting	1 of standard lighting	1 of spot lighting, 2 of standard lighting	1 of spot lighting		
Appl	icable L	ighting *	1	FLV series (However, FLV-EP	series and FLV-LN series are excluded.)	FLV series (However, FLV-LN series are excluded.)	FLV-EP series	
Appl	icable (Cameras	*2	FH-S series, FZ-S series				
Appl	icable In	nage Sens	or Controller	FH series, FZ5 series				
Inpu	t Voltag	e		Supplied from applicable car	mera (12 V) or external power supply (24	4 V) *3	Supplied from applicable camera (12 \	
Exter	nal powe	er supply vo	oltage	24 VDC±10% (including rip	ople)			
Current consumption			1.5A max.	1.0A max.				
	Re	commende	d power supply	Model S8VS-06024 (manufact	tured by OMRON, 24 VDC, 2.5 A, 60 W)			
Ω	12 VDC	Continuo	ous lighting	4ch total 7.5 W max.	4ch total 7.5 W max. 7.5 W max.		All FLV-EP series can be	
Connectable	for					Och non-connection: 1,2ch total 7.5 W max.	connected.	
Э	camera supply	Trigger	Simultaneous	4ch total 7.5 W max.	7.5 W max.	Och connection: 1,2ch total 5.5 W max.		
ğ	Зирргу	lighting	lighting			Och non-connection: 1,2ch total 7.5 W max.		
ë			Individual lighting	7.5 W max. for 1ch		7.5 W max. for 1ch		
lighting	24 VDC	Continuo	us lighting	4ch total 7.5 W max.	7.5 W max.	Och connection: 1,2ch total 5.5 W max.		
₫.	for					Och non-connection: 1,2ch total 7.5 W max.		
ઌ	external supply	Trigger	Simultaneous	4ch total 15 W max.	15 W max.	Och connection: 1,2ch total 14 W max.		
	Зирргу	lighting	lighting			Och non-connection: 1,2ch total 15 W max.		
			Individual lighting	15 W max. for 1ch		15 W max. for 1ch		
Drive	method	1		Constant voltage method			Constant current method	
Lighting method				Trigger lighting, Continuous light	hting			
Lumi	nance			Duty light adjustment or voltage light adjustment · Och Duty light adjustment or current light adjustment			Duty light adjustment or current light adjustmer	
Cont	rol			Duty light adjustment: PWM frequency of 100 kHz, light adjustment of 255 levels 10t/2ch Duty light adjustment or voltage light adjustment			Duty light adjustment: PWM frequency of 100 kHz	
Meth	nod			Voltage light adjustment: Light adjustment of 255 levels Duty light adjustment: PWM frequency of 100 kHz,			light adjustment of 255 levels	
				(all are set with image sensor controller) light adjustment of 255 levels			current light adjustment:	
				current light adjustment/Voltage light adjustment : Light adjustment of 255 levels			Light adjustment of 255 levels	
							(all are set with image sensor controller)	
				(all are set with image sensor controller)				
Trigg	er lightir	ng		Lighting in synchronization v	vith trigger input timing from the controlle	er.		
Trigg	er lightir	ng delay ti	ime	Ton: 30 μ s max.				
Lighting duration setting		ıg	Auto setting in accordance with shutter speed.					
External Interface			Camera connection cable (directly connected with the main unit)					
Insulation Resistance			0.5 MΩ (100VDC)					
Ambient Temperature			Operating: 0 to +50°C, Storage: -15 to +60°C (with no icing or condensation)					
Ambient Humidity			Operating and storage: 35% to 85% (with no condensation)					
Degree of Protection			IP20 (IEC60529)					
Vibration Resistance(destructive)		estructive)	10 to 150 Hz, (0.7mm double amplitude) 80 min each in X, Y, and Z directions					
Shock Resistance (destructive)		structive)	150 m/s² 3 times each in 6 directions(up/down, left/right, forward/backward)					
Materials			Case, Camera mount plate: Aluminum, Cable: PVC					
Weight			Approx. 130g(including the camera mount plate) Approx. 120g(including the camera mount plate) Approx. 130g(including the camera mount plate) Approx. 120g(including the camera mou					
Accessories			Instruction manual(this manual), Lighting connection table, Camera Mount plate, Mounting screws (M2 set screw x 4, M2 flat head screw x 4, M4 flat head screw x 4)					

- *1 : Check the lighting connection table of accessory.
- *2 : When mounting on model FH-S \square 12, use model FH-SM12-XLC (separate sale).
- *3: When supplying the power to this product from an external input power supply (24V), make sure to turn ON the power to this product first or at the same time with the image sensor controller. If you reverse this order, this product will not recognize the 24V external input, so lighting greater than 7.5W will not be possible.

■ Mounting the Controller to the Camera

<Step 1: Mount the camera and camera mount plate.>

The Lighting Controller can be mounted to the Camera using the provided Camera Mount plate. Mounting directions are: (1) Top/Bottom mount, (2) Right side mount, (3) Left side mount. As locations for screw holes of the mounting plate differ depending on the camera on which it is mounted, see the figures

Recommended torque is 1.2N·m for M4 screws and 0.15N·m for M2 screws.

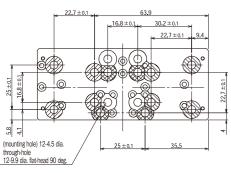
(1) Top/Bottom mount (2) Right side mount (3)Left side mount





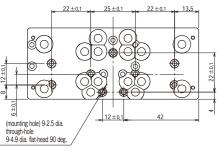


Mounting to FH-SM/SC/SM02/SC02/SM04/SC04, or FZ-S5M2/SC5M2



Use four M4 flat-head screws : Use for top/bottom mount. Use for right side mount. Use for left side mount.

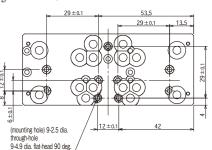
• Mounting to FZ-S / SC



Use three M2 flat-head screws.

SSS: Use for top/bottom mount. SSS: Use for right side mount. SSS: Use for left side mount.

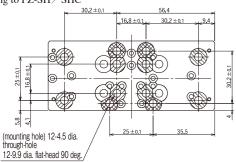
• Mounting to FZ-S2M / SC2M



Use three M2 flat-head screws.

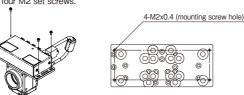
Use for top/bottom mount. Use for right side mount. Use for left side mount.

Mounting to FZ-SH/SHC



Use for top/bottom mounting. Www Use for right side mounting. When the side mounting.

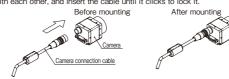
<Step 2: Mount the Lighting Controller and Camera mount plate.>



<Step 3: Cable the Lighting Controller with the Camera.>

■Mounting

Align the inner grooves of the connectors on the camera connection cable side and camera side with each other, and insert the cable until it clicks to lock it.



Hold the connector on the camera connection cable side in the arrowed direction, and pull it out straight



[Note]

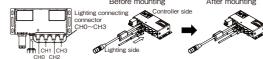
Do not grab the cable and pull it out with a unreasonable force to remove it. Doing so might

- •Do not touch the internal terminals of the connector. Doing so might cause a failure
- Avoid the cable and connector from being vibrated or shocked.
 Do not install the devices loading the connector constantly, for example, the cable is being tensed.

<Step 4: Connect the lighting controller with the lighting.>

■ Mounting

Insert the connector on the applicable lighting (model FLV series) side into the lighting connector until they click



Removal

Hold the connector on the applicable lighting (model FLV series) side in the arrowed direction.



■Cable extension

To extend the distance of the Lighting and the Lighting Controller, be sure to use the separately sold extension cable (FLV-XC_/-XC_R/-XC_EP/-XC_EPR) or branch cable (FLV-XC_S2). [Important] -Avoid the cable and connector from being vibrated or shocked.

Do not install the devices loading the connector constantly, for example the cable is being tensed.

Connection with the 24V external input terminal block (FLV-TCC1EP is excluded.)

•When supplying input voltage (12 V) from the applicable camera, connecting this terminal block is not necessary.
•When not supplying external input voltage (24 V) from this terminal block, a voltage of 12 V is automatically supplied via the camera connection cable.

24V external input terminal block	Terminal No.	Signal name	Description
(-)(+) 1 2	1	DC24V(-)	OV input for external power supplies
	2	DC24V(+)	24V input for external power supplies

OFF

external power supply input

[Important] Keep the power supply wire as short as possible,(Max.30m)
Wire the external power supply independently on other devices. If wiring it equally with other devices or with the same duct, this power supply is influenced by electromagnetic induction, so that the sensor might malfunction or be damaged. Avoid the cable and terminal block from being vibrated or shocked.

Do not install the devices loading the terminal block constantly, for example, the cable being tensed.

Sequence to turn ON power when using

a 24V external power supply (FLV-TCC1EP is excluded.)

When supplying the power to the lighting controller (FLV-TCC \square) from an external input power supply (24V), make sure to turn 0N the power supply to the product first or at the same time with the image sensor controller (FH or FZ5). If you reverse this order, the image sensor controller will supply voltage (12V) to the product the camera to startup the product. Therefore, the product recognizes the power supply from the camera, so lighting greater than 7.5W will

•If the external power input is provided first to the FLV-TCC, the external power input will be recognized.

external power supply input	OFF —		
FH or FZ5 power supply input	ON OFF —	! !	
	input to the FLV-TCC e external power supp		er input to the FH or FZ5 is provided at ecognized.

FH or FZ5 power supply input Note: The external power supply of the FLV-TCC is recognized when the external power supply input reaches approximately 20V. If the external power supply input starts extremely slowly and the external supply power recognition does not reach approximately 20V before switching on, it will not be possible to recognize the external power supply.

If power input to the FH or FZ5 is supplied first, The product recognizes the power supply from

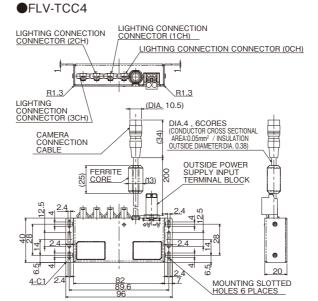
tile carriera, so it	Briting Breater triair 7.	OVV WIII HOLDE P	OSSIDIO.
FLV-TCC external power	ON OFF		
supply input	ON	i	•
FH or FZ5 power supply input	OFF —		

Dimensions (Unit:mm)

●FLV-TCC3HB

CAMERA CONNECTION CABLE

FERRITE CORE



Tightening torque: M2: 0.15N · m

LIGHTING CONNECTOR (1CH)

(DIA. 10.5)

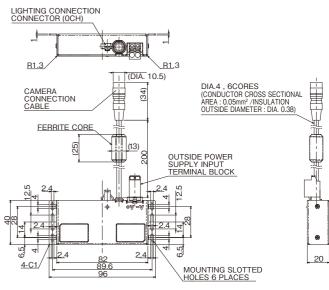
SPOT LIGHTING CONNECTOR (OCH)

DIA.4 , 6CORES (CONDUCTOR CROSS SECTIONAL AREA:0.05mm², INSULATION OUTSIDE DIAMETER:DIA.0.38)

MOUNTING SLOTTED HOLES 6 PLACES

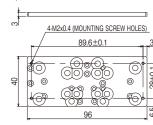
Tightening torque: M2: 0.15N · m

●FLV-TCC1



Tightening torque: M2: 0.15N · m

·Camera mount plate (provided)

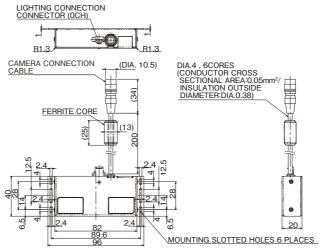


Suitability for Use

Omron Companies shall not be responsible for conformity with any standards. codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS. AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

●FLV-TCC1EP



Tightening torque: M2: 0.15N · m

