OMRON	Warning Symbols	Precautions for Safe Use	Precautions for Correct Use This Instruction Manual describes only the minimum setting operations required when using the SBM for the first time.
	Minor electric shock, fire, or Product failure may occasionally occur. Do not	 Installation and Storage Environment Store the Product at an ambient temperature of –25 to 65°C and relative humidity of 25% to 90%. 	1 nis instruction Manual describes only the minimum setting operations required when using the S8M for the first time, and understand the S8M User's Manual, and be sure you understand the S8M sufficiently before attempting to set any paran Mounting
S8M		 Poor heat dissipation resulting from improper installation conditions may occasionally deteriorate or damage internal parts. Do not use 	• Mounting Direction Standard Mounting (Fig.4) OK
Digital Multicircuit Protector	being supplied or immediately after power is turned OFF.	any mounting method other than a standard one. 3. Internal parts may occasionally be deteriorated or broken. Do not use	Horizontal Mounting (Fig.5) Incorrect Other mounting directions Incorrect
	 Fire may occasionally occur. Tighten terminal screws to the specified torque. Power input terminals M4 1.08 N•m (9.6 in. lb.) 	the Product in conditions exceeding the derating (in portion of the derating curve). 4. Surrounding air temperature for UL 508 listing and UL60950-1	Mounting Space
EN INSTRUCTION MANUAL	Branch output terminals M3.5 0.8 to 1.0 N•m (7.2 to 8.8 in. lb.) • Minor electric shock, fire, or Product failure may occasionally occur. Do not	Recognition: 50°C 5. Use the Product where the relative humidity is 25% to 85%.	The long-term reliability of the SBM can be increased by installing it properly and sufficiently considering head diss Install the SBM so that the air flow circulates around it, because the SBM is designed to radiate h means of natural air circulation. Side-by-side mounting of two or more SBM Protectors is possible. The switching mode power s
hank you for purchasing the S8M. This Instruction Manual	allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.	 Do not use the Product where it would be subjected to direct sublight. Do not use the Product where it would be subjected to the possibility of penetration of liquid, foreign substance, or corrosive gas. Do not use the Product where it would be subjected to shock or vibration. A device such as a contact breaker may be a vibration source. Set the Product as far as possible from possible sources of shock or vibration. Additionally, install a PFP-M End Plate on each end of the Product. 	Side-by-side mounting of two or more S8M Protectors is possible. The switching mode power s connected to inputs and any other sources of heat, however, must be separated as shown in
escribes the functions, performance, and application methods equired to use the S8M.	The Product is damaged. Do not incorrectly connect the polarity of power input terminals.	8. Do not use the Product where it would be subjected to shock or vibration. A device such as a contact breaker may be a vibration source. Set the Product as far as possible from possible sources of shock or vibration.	*4. 20 mm min
Make sure that a specialist with a knowledge of electrical systems operates the S8M.	Suitability for Use	9. II the Product is used in an area with excessive electronic hoise, be	Derating Curve (fg.7) The ambient temperature that S8M can be operating is limited by the maximum output current of one branch terminal on ordinary current condition.
Read and understand this Instruction Manual, and be sure you	OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.	sure to separate the Product as far as possible from the noise sources. 10. Cutoff performance is guaranteed according to the ambient operating temperature. Use the Product within the derating range shown in Cfg2.	Note: If natural air circulation is limited, use forced air cooling to prevent overheating.
understand the S8M sufficiently before attempting to use it. eep this Instruction Manual close at hand and use it for reference	Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.	 Installation and Wiring Minor electric shock during operation may occasionally occur. Always attach the terminal cover when using the S8M. 	Selecting Input Voltage Input voltage range: 19.2 to 26.4 VDC Notes:
uring operation.	Know and observe all prohibitions of use applicable to this product. NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OPPOPERTY UNITIES TO A DRIVEN A DRIVEN AS A WHOLE IN A DRIVEN AS A DRIVE	2. Minor fire may possibly occur. Ensure that input and output terminals	 The S8M provides abnormal voltage protection. All branch outputs will be cut off if the input v exceeds 28.8 VDC. This function, however, does not protect loads and internal parts from voltage in all cases. Be sure the input voltage is within the cited range.
	OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR	are wired correctly. 3. Increases in the temperature of internal parts resulting from heating of wiring materials may result in deterioration or damage to parts. Use	 The S8M provides abnormal voltage protection. All branch outputs will be cut off if the input v exceeds 28.8 VDC. This function, however, does not protect loads and internal parts fror voltages in all cases. Be sure the input voltage is within the rated range. Outputs may be cut off by the abnormal voltage protection with loads that generate reverse peak electromotiv 3.4 voltage drop will occur in the S8M. Consider the voltage drop at the output.
	SYSTEM. See also product catalog for Warranty and Limitation of Liability.	wiring materials suitable to the current being used. The following wiring materials, torque and strip length are recommended to prevent heating	Input Power Supply Selection
	Contact address	and possible fires in wiring materials. Terminals Wire size Wire type Torque Strip length	Notes: 1. The S8M requires power to operate and thus consumes power. When selecting the power s be sure to include the approximately 10 W of power consumption for the S8M. 2. The overcurrent protection characteristics of the power supply connected to the input sin cause a voltage drop, resulting in cutoff.
MRON CORPORATION All Rights Reserved	OMRON Corporation Europe/Middle East Asia/Africa/Russia 中国 Shiokojii Horikawa, Shimogyo-ku, OMRON Europe B.V. 欧姆龙自动化 中国 有限公司	AWG14 (cross-sectional area out to the contract of the contrac	If the capacity of the input power supply is too small compared with the load, the overconstruction characteristics of the power supply can cause the failure of S8M operating or a
1618639-7D	Kyoto, 600-8530 Japan Wegalaan 67-69, 2132 JD Phone: 86-21-5037-2222 Hoofddorp, The Netherlands 香港	Power input terminals do 2081mm ²) x 2 (same type), Solid, 1.08NMB to AWC14 x 1 for internal wiring Stranded (9.6 in.lb.) 10mm Branch output aVG20 to AWC16 (cross-Solid, 0.8 to 0.8 to 1.0NM 6 to	by voltage drop occasionally. 4. If the input power supply starts or stops too slowly, the overcurrent protection characteris the power supply can cause the failure of S8M operating or a cutoff by voltage drop occasi
detailed operating instructions, refer to the S8M User's Manual	OMRON ELECTRONICS LLC Phone: 31-23-56-81-300 欧姆館 音港 自動化有限公司 Phone: 1-847-843-7900 Fax: 31-23-56-81-388 Phone: 852-2375-3827 OMRON CANADA INC. Web site: www.eu.omron.com 台灣	Branch output AWG20 to AWG16 (cross- sectional area of 0.517 to terminals sectional area of 0.517 to 1.309mm ²) Stranded 87.2 to Stranded 87.2 to	Cutoff Performance There are two types of cutoff current characteristics: Standard detection and Instantaneous det Initial setting is Standard detection. (Fig.3). Refer to User's Manual (SGTC-701) for details of s
t. No. SGTC-701).	Phone: 1-416-286-6465 GERMANY 台灣歐姆施股份有限公司 Phone: 886-2-2715-3331	Other AWG26 to AWG18 (cross- sectional area of 0.129 to 0.923 mm ² (0.923 mm ²) 10mm	Notes: 1. When the tripping alarm output operates, always remove the cause of the output first and then reset the 2. When using a load with a fixed power operated, the \$\$M may cause a cutoff when the power supply is turns
Conformance to EC Directives	OMRON ELECTRONICS LTD. Phone: 49-2173-6800-0 Phone: 44-1908-258, FRANCE OMRON Electronics Korea	4. It is conceivable that internal parts may be deteriorated or damaged.	3. Tolerance of current tripping alarm threshold is ±0.3A. Startup Delay
fer to the catalogue and this instruction manual for details on the operating ndition for EMC-compliance.	OMRON ELECTRONICS S.A.S. Phone: 82-2-519-3988 Phone: 0-825-825-679 AUSTRALIA	Do not repeatedly perform cutoff or recovery operations more than necessary. 5. Do not push more than 100 N of force to the terminal block when	To prevent cutoffs caused by large surge currents when the equipment starts, the S8M has a delay that disables the cutoff operation for 70 ms after the semiconductor relay turns ON.
Key to Warning Symbols	OMRON ELECTRONICS S.P.A. Phone : 39-02-32681 Phone: 61-2-9878-6377	tightening screws. 6. Be sure to remove the sheet covering the Product during installation	Note: The startup delay will not operate when a relay or other device is used for ON/OFF control output side of the S8M, so a cutoff operation may occasionally occur.
Indicates a potentially hazardous situation which, if not avoided,	OMRON ELECTRONICS IBERIA S.A.U.	before turning ON the power. 7. The S8M operate by DC input. Do not connect AC input to Power input terminals.	Dielectric Strength Test The S8M is designed to withstand 500 VAC for 1 minute between I/O terminals, all output terminals, all Input signal terminals, and all communications terminals of the S8M.
AUTION may result in minor or moderate injury or in property damage.	Phone : 34-913-777-900 Phone: 65-6-547-6789	(3) Dielectric Strength Tests	Notes: 1. The SRM may possibly be damaged from the impulse voltage if a testing device switch is used to abrunt
		Power input terminals and Branch output terminals are not isolated. Do not perform dielectric strength tests or other insulation appraisal testing between inputs and outputs.	or shut off 500 VAC. Increase the applied voltage gradually using the voltage adjustment on the testing 2. Always short the specified terminals so that the voltage is applied to all of the terminals at the sam External Trinning Input
	Dpening Branch output Cover Nomenclature Power input terminals (+V), (–V) M4	Safety Standards	External Tripping Input When using the external tripping input, always confirm the application methods described User's Manual (SGTC-701) before designing the system. Tripping Jaco Querty, Jaco Querty, and Quert Department Output
Tripping alarm output (TRP) Alarm output (ALM)	Branch output terminals (+V), (-V) M3.5 Status indicators (red, green)	According to EN 50178 (i.e., VDE 0160)	Tripping Alarm Output, Alarm Output, and Over Temperature Output Open collector outputs: 30 VDC max, 50 mA max., residual voltage when ON: 2 V max., le current when OFF: 0.1 mA max.
Over-temperature output (TMP) External tripping input (TRG)	Tripping alarm output (+, –)	Power input terminals and Branch output terminals are not isolated. Overvoltage Category III Device: Protection Class III	Display Note:
	Alarm output (+, –) Over-temperature output (+, –)	Atomospheric Conditions: 3K3 CSA Level 5	The voltage detection function monitors the voltage at the power supply input terminals. Me the voltage at the branch output terminals to confirm that the output voltage is correct. Connections to the SBM
	External tripping input (+, –) Seven-segment display	According to UL508 Use a single isolated limited voltage source with maximum	It is possible to connect S8M like below. (Fig.8) Series connections, such as connecting an S8M to the output of another S8M, are not possible. (Fig
	Unit indicators (V, A, kh, °C, s, and outputs 1, 2, 3, 4)	20 Amp over-current protection for each positive supply wire. A Listed or Recognized Component power supply with an output current limited to 20 Amp or less provides acceptable over-current	Backup Device Connections Observe the following precautions when using a backup device, such as one from OMRON's S8T S Notes:
	Mode Key Up Key	 Description of the standard structure in the structure in the	 When connecting a backup device to an S8M branch output, the backup current will be supplied to branches through internal circuits and it is conceivable that internal parts may be deteriorated or dama
	Down Key	 "WARNING" and "Risk of Fire or Electric Shock. Do not interconnect output terminations." 	the same time. When using a backup device with the S8M, connect the backup device to the power inpu 2. When connecting a backup device to the S8M input side, the backup time will be shorter than r due to internal power consumption. Always confirm the backup time when using a backup devi
	er is hooked at the Communications terminals (RD, SD, SG)	According to UL60950-1 • Use SELV power supply. The load and temperature in the end use application shall	Plating material of the Terminals Plating material of the terminals (Tripping alarm output, Alarm output, Over-current output, External t
	. Hold the cover as Note: The S8M-CP04 does not have communications terminals.	not exceed the ratings of the connected power supply or the S8M-CP04 Series which ever is lower.	input and Communications terminals) are gold plated Note: 1. Insufficient electrical contact may possibly occur. Using the same materials of wire is recommended to prevent malcon
	Operating Math	ada and Eurotiana	
Part Names and Functions	Setting Mode	ods and Functions	Clearing the Peak Output Currents
No. Name Function	Setting Mode is used to set S8M parameters. The various parameters can be selected as shown below.	The following operations can be used to force branch outputs to turn ON and outputs can be turned ON or OFF individually or together. For the seven-segment display and unit indicators , in indicates that	
Power Input Terminals (+V), (–V) Connect to the input line.	The current at which a branch output is cut off. Setting range: 0.5 to 4.0 A (RS Models: 0.5 to 3.8 A) The branch output will be cut off if the value set bare is	indicator is lit and indicates that the display or indicator is flashing. 1. Turning ON/OFF Individual Branch Outputs	
Branch Output Terminals (+V), (-V) Connect to the load lines. Up to four branch outputs can be connected.	exceeded.	The following display will appear when Test Mode is entered and the Up and D and (2)) can be used to select the branch output. Set the branch output number	
Status Indicators (Red, Green) Indicate the connection and cutoff status for each branch output. Cutoff:	\otimes $(1) \otimes$	confirming the number on the mode indicators, and then turn ON the output. The ON/OFF (connected/cut off) status of the branch outputs can be confirmed	d on the status
Status Indicators (Red, Green) status for each branch output. Cutoff: Red, Connected: Green (See note 1.)	Dominant Alian Theodat The current at which an alarm is output. Setting range: 0.5 to 4.0 A (RS Models: 0.5 to 3.8 A) An alarm will be output if the value set here is exceeded.	indicators. An indicator will light green if the output is connected normally. Waiting for connection (tranch output 1 is OFF)	1 2 3 4 V A kh s $2 1 2 3 4 V A kh$
Output (transistor OFF) when the error cutoff operation			Clearing completed.
functions. (See note 2.)	(a) Undervotage Alium Value 30 Undervotage Alium Value The detection value for a voltage drop at which an alarm		ation executed)
Alarm Output (+, -) Output (transistor OFF) when a set value for alarm detection is	is output.	1 2 3 4 V A kh S Charges after the Waiting for cutoff	■ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
exceeded. (See note 2.)	An alarm will be output if the voltage drops below the		
Ovtput (transistor OFF) when a set value for over-temperature detection is exceeded. (See note 2.)			ch S for 3 s Set value saved (flighters for 3 s)
The cutoff operation can be executed	(1) Demotiate Atam Vater Demotiate Atam Vat	1 2 3 4 V A kh s	
External Tripping Input (+, -) with an externally input signal.	An alarm will be output if the voltage rises above the	2. Turn ON/OFF All Branch Outputs	1 2 3 4 V A kh
Seven-segment Display Displays measured values and set values.	Since Arm Value Set here.	The Up and Down Keys (👻 and 🛞) can also be used to select all branch ou The ON or OFF display will appear. Use the Mode Key to execute the operation	Alarm Indication
V Lit when the input voltage is being displayed.	Setting range: 0.0 to 99.0 kh	The all branch outputs will be conne Mode Key () is press in this statu	ected if the The S8M displays alarms according to the parameters set in Setting Mode.
A Lit when the output current is being displayed. Plashes when the peak current is being displayed.	The alarm will be disabled if the alarm value is set to 0.0.	Mode Key ((@)) is press in this statu Confirm that the status indicators for outputs light green.	
kh Lit when the operating time is being displayed. Unit Indicators (Orange) Lit when the temperature is being displayed.	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	1 2 3 4 V A kh s	0.5 s Nothing displayed
Lit when setting the sequence	Setting range: 25 to 80°C	\otimes $\langle \zeta \rangle \otimes$	
Lit or flashing when displaying	here is exceeded.	The all branch outputs will be cut off Key ((((((((((((((((((((((((((((((((((((1 2 3 4 V A kh s 1 2 3 4 V A kh
1 ~ 4 branch output information. (See note 3.)		Confirm that the status indicators for outputs go OFF.	r all branch Use the following table to determine the alarm type. 0.5 s
Mode Key Used to change the parameter being displayed or to reset the	Refer to the User's Manual (SGTC-701), if the run time clearing is required.	1 2 3 4 V A kh s	Display Alarm Output status A10 Abnormal voltage tripping Al branch outputs out off
peak hold current value. Used to move to different		Run Mode After connecting the required branch outputs in Test Mode, enter Run Mode t	to confirm that A20 Overvoltage alarm No output at off
Up Key setting modes or to increase a set value.	Setting Parameters	input voltages, output currents, and other values are correct. The Up and Do and (A) can be used to check the following information. For the unit indicators , initiates that the indicator is lit and indi	A21 Undervoltage alarm No outputs cut off 1 2 3 4 V A kh A22 Overcurrent alarm No outputs cut off 1 2 3 4 V A kh
Used to move to different	Parameters are set as shown below. After setting all required parameters, go to Test Mode.	indicator is flashing. (1) Input Voltage Display	A23 Run time alarm No outputs cut off A30 Over-temperature No outputs cut off
set value.	Current Tripping Threshold Use With the set value.	The input voltage is monitored and o	Resetting Alarms
Reset Key (RST) Used when connecting branch outputs for cutoff operation. (See note 4.)			When an alarm is displayed, remove the cause of the alarm and then press the Key (^{RST}) for at least 3 s. The following display will appear and the alarm will be
Communications Terminals (RD, SD, SG)	Atternokey 1 2 3 4 V A kh s → 1 2 3 4 V A kh s	$\begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 \\ \end{bmatrix} \begin{pmatrix} A & kh \\ s \\ \end{bmatrix}$	Note: The over-temperature output will automatically be reset when the temperature output will automatically be reset when the temperature output will automatically be reset manually.
1. Detailed display methods show Status Indicators in Operating Methods	1 2 3 4 V A kh s 3 1 2 3 4 V A kh s 1 2 3 4 V A kh s 1 2 3 4 V A kh s	(2) Outmut Current Discider for Branch Chatruit 1	
and Functions. 2. Configured from independent circuits, and either sinking or sourcing	Atter flaatving bet state flaatving bet state flaatving bet state flaatving bet state	(2) Output Current Display for Branch Output 1 The output current for a branch output	ut is displayed.
applications are possible. 3. Indicators 1 to 4 will not light except when the current is being displayed.	Ď. J. J .		Run Mode is returned to automatically when the a
			Alarms cannot be reset for the first 15 s after they o
4. Press for 3 s to enable operation.	■ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	1234 <u>X</u> A_kh s	
	1 2 3 4 V A kh s Mode Selection Menu	$\textcircled{\begin{tabular}{c} \hline \hline$	Status Indicators
4. Press for 3 s to enable operation. 5. Except for the S8M-CP04. Initial Settings When First Using the S8M	1 2 3 4 V A kh s Mode Selection Menu When the required parameters have been set in Setting Mode, Test Mode can be entered from the Mode Selection Menu after pressing the Up + Down Keys (©+☉) for 3 s. The following	(3) Peak Output Current Diploy for Branch Output 1 The peak output current for a branch	Status Indicators The status indicators light according to the branch output status as described h output is Lit green Normal connection status
4. Press for 3 s to enable operation.	1 2 3 4 V A kh s Mode Selection Menu When the required parameters have been set in Setting Mode, Test Mode can be entered from	(a) Faik Output Current Display for Branch Output 1 The people output it current for a branch	Status Indicators The status indicators light according to the branch output status as described by Lit green Normal connection status Flashing green Connection status y status during the startup sequence t currents for Lit red







