

SLM-DCO-15N Sinking DC Output

The SLM-DCO-15N DC Output Module provides fifteen outputs that sink up to 1A per point from loads powered by 3.3–24 VDC for use with Synergy Logic Micro systems.

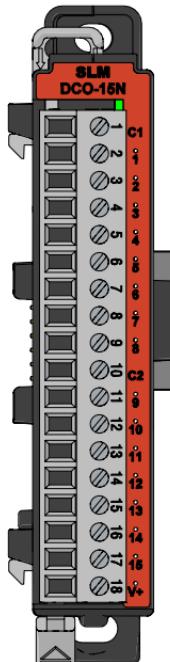


Table of Contents

Product Overview	1
Technical Specifications	2
Terminal Block Specifications	2
General Specifications.....	2
Mounting Clearances	3
Installation Procedures	4
Schematic and Wiring Diagrams.....	7
Safety Precautions.....	8
Trademark Notice.....	9
Warranty	9
Contact Information	10

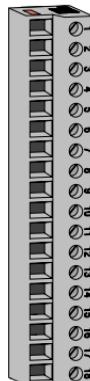
Technical Specifications

Output Specifications

Outputs per Module	15 sinking
Output Type	N-channel MOSFET, open drain
Rated Voltage	3.3–24 VDC
Operating Voltage Range	2.9–26.4 VDC
Maximum Output Current	1A per point / 8A per common
Minimum Load Current	1mA
Maximum Leakage Current	0.3 mA @ 30VDC
On Voltage Drop	0.2 VDC @ 1A
Maximum Inrush Current	4A for 50ms, 6A for 10ms
OFF to ON, ON to OFF Response	≤0.5 ms
Status Indicators	Logic Side (15 points)
Commons Per Module	2 non-isolated
Protection Circuit	Not built into module - Install protection element such as external fuse.
External Power Supply Required	12–24VDC (-15% / +20%) @ 22mA

Removable Terminal Block Specifications

Part Number	Dinkle EC381F-S1672218P
Number of Positions	18 screw terminals
Pitch	3.5 mm
Wire Range	30–16 AWG (0.051–1.31 mm ²) Solid / Stranded Conductor 3/64 in (1.2 mm) Insulation Max. 1/4 in (6–7 mm) Strip Length
Conductors	"USE COPPER CONDUCTORS, 75°C" or equivalent.
Screw Driver Width	0.1 in (2.5 mm) Maximum*
Screw Size	M2
Screw Torque	2.5 lb·in (0.28 N·m)



General Specifications

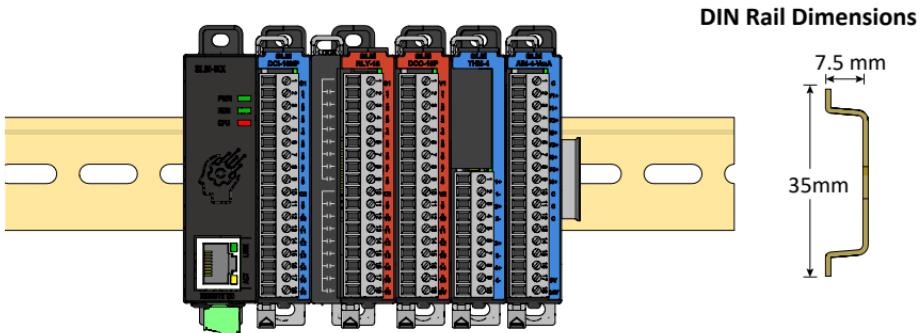
General Specifications

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Altitude	2,000 meters max
Pollution Degree	2
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Oversupply Category	II
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	1800mW
Enclosure Type	Open Equipment
Module Location	Any I/O position in a Synergy Logic Micro System
Field Wiring	Removable Terminal Block (included)
Terminal Type	18-Position Removable Terminal Block
Weight	71g (2.5 oz)
Agency Approvals	UL 61010 and UL 61010-2-201 File E139594, Canada and USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)*

*See CE Declaration of Conformance for details.

Mounting Clearances

The Synergy Logic Micro System can be secured within an enclosure or cabinet using mounting rails. Use rails that conform to DIN EN standard 50022. The rails are approximately 35mm high, with a depth of 7.5 mm.

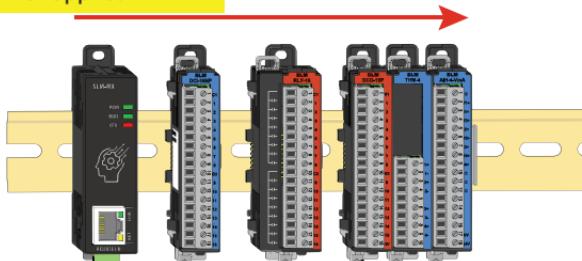


- Provide a minimum clearance of 2 inches (50mm) on all sides of the assembled system to allow proper airflow.
- Allow extra clearance for door-mounted operator panels, push buttons, lights, and other items.
- Maintain a minimum of 3 inches (76mm) of vertical clearance between the module(s) and any wire duct.
- Ensure a minimum of 7.2 inches (183mm) of vertical distance from chassis to chassis in a multiple unit installation.

Installation

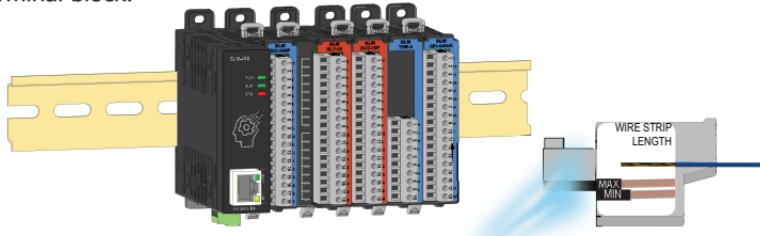
WARNING: Do not add or remove modules with field power applied.

Step One: With latch in "locked" position, align connectors on the side of each module and stack by pressing together.

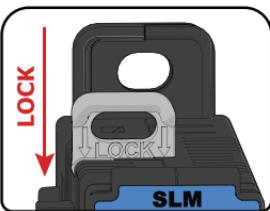
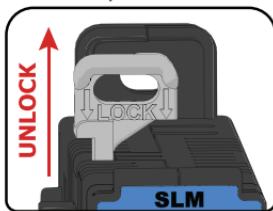


Ensure all latches are secure after modules are connected.

Step Two: Attach field wiring using the removable terminal block.



Step Three: To unstack modules, pull locking latch up into the unlocked position and then pull modules apart.



Installation

Mounting within an Enclosure:

Your selection of a proper enclosure is important to ensure the safe and proper operation of your Synergy Logic Micro System. Applications for the system vary and may require additional hardware considerations. The minimum considerations for enclosures include:

- Conformance to electrical standards
- Protection from the elements in an industrial environment
- Common ground reference
- Not exceeding the specified maximum ambient temperature
- Access to the equipment
- Security or restricted access
- Sufficient space for proper installation and maintenance of the equipment.

Mounting Position:

Mount the Synergy Logic Micro system horizontally, as shown in the cabinet illustration on the following page, to provide proper ventilation. Do NOT mount vertically, upside down, or on a flat horizontal surface.

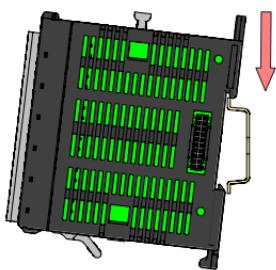
Temperature Considerations:

The Synergy Logic Micro System enclosure should be installed in an environment that falls within the specified equipment operating temperature range. If the environment temperature deviates above or below the specified operating temperature range, measures such as cooling or heating the enclosure should be taken to remain within the range specification.

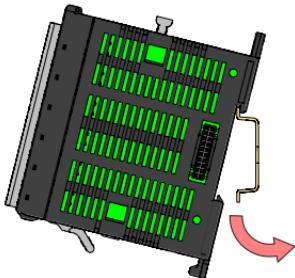
Installation

Follow the steps below to mount Synergy Logic Micro System modules onto DIN rail.

STEP 1

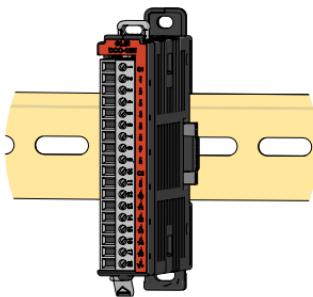


STEP 2



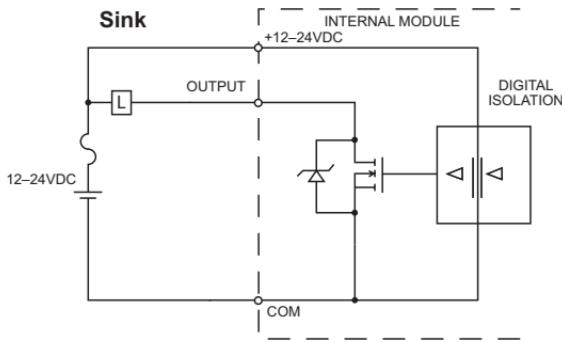
Insert DIN rail in mounting slots.

Rotate module ensuring clip snaps onto rail.

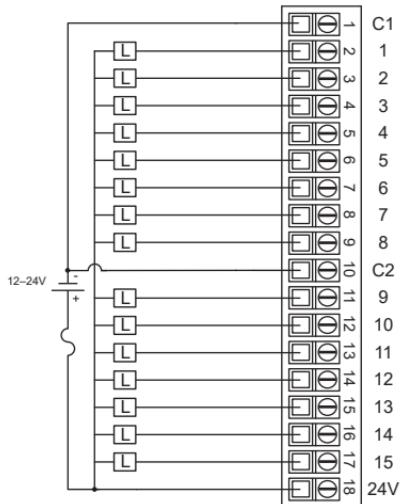


Module securely mounted on DIN rail.

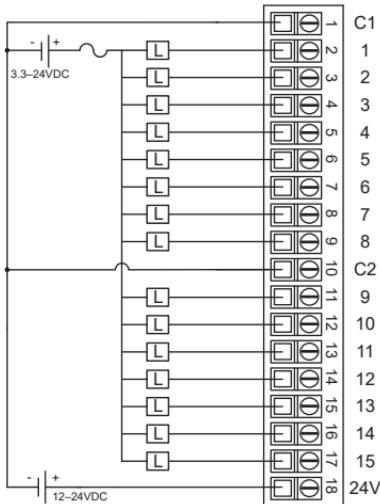
Schematic & Wiring Diagram



Single Power Source



Dual Power Source



Safety Precautions

Follow the manufacturer's guidelines for thermal management to prevent overheating.

WARNING: Thank you for choosing Synergy Logic equipment. Prior to installation or operation, carefully read this publication and any relevant materials. To mitigate potential safety risks, comply with local and national codes governing equipment installation and operation. Ensure adherence to the National Fire Code, National Electrical Code, and codes from the National Electrical Manufacturer's Association (NEMA) at a minimum. Local regulatory offices can provide additional guidance on codes and standards. Failure to comply may result in equipment damage or serious injury. Our products are not intended for High Risk Activities and do not come with a warranty for such applications. For warranty and safety details, refer to our Limited Warranty and Limitation of Liability statement which can be found at www.synergy-logic.com. For inquiries or additional information, contact us at support@synergy-logic.com. Synergy Logic reserves the right to modify products and publications without notice.

Trademarks mentioned are the property of their respective owners, and Synergy Logic disclaims any proprietary interest. Copyright© 2024, Synergy Logic. All Rights Reserved. No part of this manual may be copied, reproduced, or transmitted without the prior written consent of Synergy Logic.

Limited Warranty and Limitation of Liability

Synergy Logic, LLC ("SYNERGY") warrants to the original purchaser that products manufactured by SYNERGY are free from defects in material and workmanship under normal use and service. The obligation of SYNERGY under this warranty shall be limited to the repair or exchange of any part or parts which may prove defective under normal use and service within two years from the date of manufacture or eighteen (18) months from the date of installation by the original purchaser whichever occurs first, such defect to be disclosed to the satisfaction of SYNERGY after examination by SYNERGY of the allegedly defective part or parts. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES AND SYNERGY NEITHER ASSUMES, NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR SYNERGY, ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS. THIS WARRANTY SHALL NOT APPLY TO ANY PRODUCT OR ANY PART THEREOF WHICH HAS BEEN SUBJECT TO ACCIDENT, NEGLIGENCE, ALTERATION, ABUSE, OR MISUSE. SYNERGY MAKES NO WARRANTY WHATSOEVER IN RESPECT TO ACCESSORIES OR PARTS NOT SUPPLIED BY SYNERGY. THE TERM "ORIGINAL PURCHASER," AS USED IN THIS WARRANTY, SHALL BE DEEMED TO MEAN THAT PERSON FOR WHOM OUR PRODUCT IS ORIGINALLY INSTALLED.

In no event, whether as a result of breach of contract, warranty, tort (including negligence) or otherwise, shall SYNERGY or its suppliers be liable for any special, consequential, incidental or penal damages including, but not limited to, loss of profit or revenues, loss of use of the products or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, down time costs, or claims of original purchaser's customers for such damages.

To obtain warranty service, technical support, product inquiries and additional information, please email us at **support@synergy-logic.com**

NOTE: Do not return parts directly to Synergy Logic without first obtaining return authorization.

Unauthorized returns can result in unavoidable delays.