

PowerLogic™ HDPM6000 I/O Module

Installation Guide

Z208142-0E
06/2022



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Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

Safety Information

Important information



Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an hazardous situation which, if not avoided, **will result in death or serious injury**.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in death or serious injury**.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury**.

NOTICE

Notice is used to address practices not related to physical injury.

Please note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety Precautions

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Submetering equipment shall not be mounted within 50.8 mm (2 in.) of any live parts including primary conductors, primary terminals, primary lugs. This requirement excludes insulated cables.
- Submeters attached to the enclosure shall not contact the panel interior insulation.
- Mounting provisions shall not be attached to any live part.
- Voltage sensing and power supply connections to the primary voltage shall have overcurrent protection.
- Do not install submetering equipment in any area where breaker arc venting exhaust gasses could be re-directed as a result of submetering equipment installation.
- This product must be installed inside a suitable fire and electrical enclosure.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Do not install this product in hazardous or classified locations.
- Read, understand and follow the instructions before installing this product.
- Turn off all power supplying equipment before working on or inside the equipment.
- Product may use multiple voltage/power sources. Disconnect all sources before servicing.
- Use a properly rated voltage sensing device to confirm that power is off.
- Do not use data from this device to confirm power is off.
- Replace all doors, covers and protective devices before powering the equipment.
- Do not exceed the product's ratings or maximum limits.
- Treat communications and I/O wiring connected to multiple devices as hazardous live until determined otherwise.

Failure to follow these instructions will result in death or serious injury.

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired.

The installer is responsible for conformance to all applicable codes.

The safety of any system incorporating this equipment is the responsibility of the assembler of the system.

Note: See IEC 60950-1:2005, Annex W for more information on communications and I/O wiring connected to multiple devices.

Protective bonding: electrical connection of accessible conductive parts or protective screening to provide electrical continuity to the means for connection of an external protective conductor.

Safety Precautions (cont.)



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

⚠ CAUTION

PRODUCT DAMAGE DUE TO ELECTROSTATIC DISCHARGE

Circuit boards and components can be damaged by static electricity or electro-static discharge (ESD). Observe the following electrostatic precautions when handling the product, and cables and components connected to the product:

- Keep static-producing material such as plastic, upholstery, carpeting, etc. out of the immediate work area.
- Store the product in ESD-protective packaging when it is not installed in the panel.
- When handling the product, or a conductive cable / an ESD-sensitive component connected to the product, wear a conductive wrist strap connected to the Ground through a minimum of 1 MΩ resistance.
- Avoid touching exposed conductors and component leads with skin or clothing.

Failure to follow these instructions can result in equipment damage.

FCC Notice

FCC PART 15 INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The user is cautioned that any changes or modifications not expressly approved by Schneider Electric could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [*] est conforme à la norme NMB-003 du Canada.

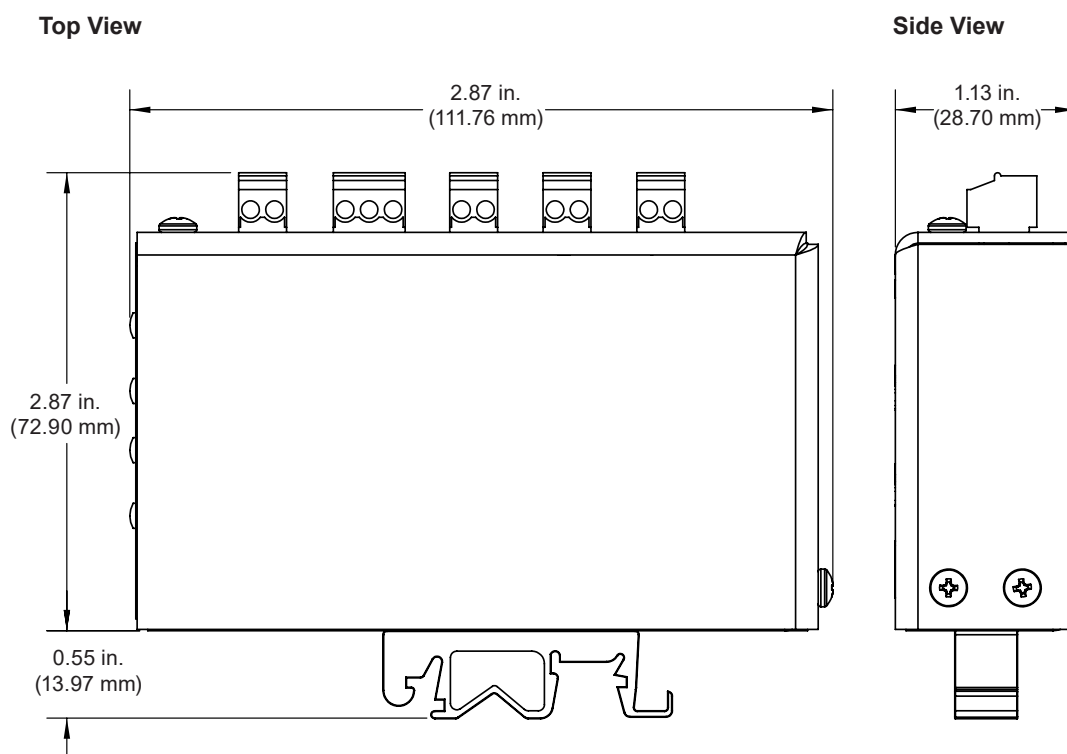
Overview

The HDPM6000 I/O Module is built on the HDPM6000 platform technology and is available to add digital and analog inputs, as well as a digital output to the connected system.

Powered by the HDPM6000 platform, the I/O Module provides two digital inputs, one analog input (10 VDC), one relay output and one CT input. The HDPM6000 head unit outputs data directly to your network and the analog/digital points can integrate with any BMS or DCIM system via Modbus TCP/IP, SNMP and BACnet/IP.

The HDPM6000 I/O Module is ideal for large critical and non-critical building applications such as data centers, industrial facilities, infrastructure and other similar environments.

Dimensions



Specifications

Electrical Characteristics		
Supply voltage	24 VDC supplied from the HDPM6000 head unit via bus port CAT6 cable	
Relay Output, Form C contact	30 VDC @ 1 A 48 VAC @ 0.5 A	
Digital inputs	5 VDC, 11 mA max supplied across dry contact input. Dry contact impedance maximum 50 ohms.	
Analog input	0 to 10 VDC, 0.05V accuracy, 0.01 V resolution	
Power supply	For the HDPM6000 head unit, use power supply module specified in HDPM6000 literature. Use <3 m power supply cable. Use <30 m shielded cable.	
Current Transformer (CT) input	UL 2808, 0 to 250mV rms signal (no shorting blocks required)	
CT options	Solid-core or split-core type current transformers	
Environmental Characteristics		
Operating temperature	-20 to 60 °C (-68 to 140 °F)	
Storage temperature	-20 to 70 °C (-68 to 158 °F)	
Relative humidity	5 to 90% non-condensing	
Maximum operating altitude	2,000 m (6562 ft.)	
Non-operating altitude	15,000 m (49213 ft.)	
Noise level	< 65 dba at six ft. (72 in.) from the HDPM6000	
Mounting location	Not suitable for wet locations. For indoor use only.	
Standards		
Description	General Standard	Reference Standard
Radiated emissions	IEC/EN 61326-1 :2020 (Industrial Electromagnetic Environment)	CISPR 11 AC port inc A1
Conducted emissions, AC port		
Conducted emissions, telecom port		
Radiated RF immunity		IEC/EN 61000-4-3
Fast transient bursts		IEC/EN 61000-4-4
Surge		IEC/EN 61000-4-5
Conducted immunity		IEC/EN 61000-4-6
Power frequency magnetic field		IEC/EN 61000-4-8
Voltage dips and interruptions		IEC/EN 61000-4-11

Mounting

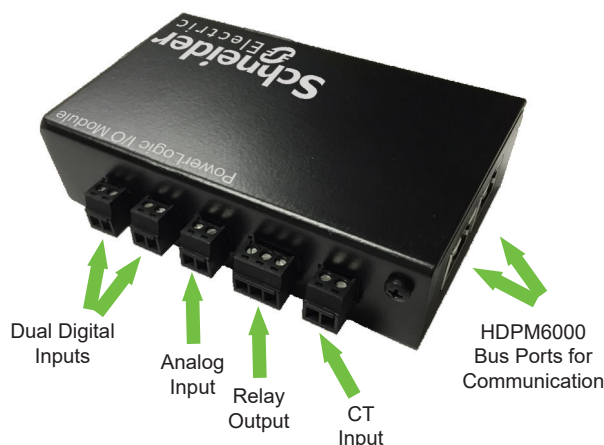
The I/O module should be mounted inside an enclosure or panel. The I/O module receives its power, voltage, reference and communications via a straight-through CAT6 cable that is connected to one of the RJ-45 connectors on the I/O module and the bus port on the HDPM6000 head unit or one of the other downstream devices supported by the head unit.

Note: CAT6 cable must be <30 m (98 ft.) in length between the HDPM6000 head unit and the first module on the bus daisy chain.

I/O Connections

The I/O Module connections (from left to right) are detailed in the table and figure below.

Input/Output	Connection
Digital Inputs	D1 +, D1-, D2+, D2-
Analog Inputs	A1+, A1-
Relay Outputs	C, NO, NC
CT Inputs	I1+ (white CT lead wire), I1- (black CT lead wire)



Current Transformers

CT Orientation

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Use only appropriately specified current sensors which provide reinforced insulation rated for the nominal voltage of the system to be measured and measurement category CAT III or CAT IV.

Failure to follow these instructions will result in death or serious injury.

NOTICE

INCORRECT POLARITY

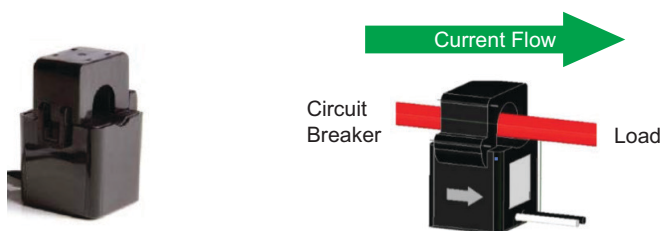
Align CT arrow to point in the direction of the power flow.

Failure to follow this instruction can result in incorrect readings.

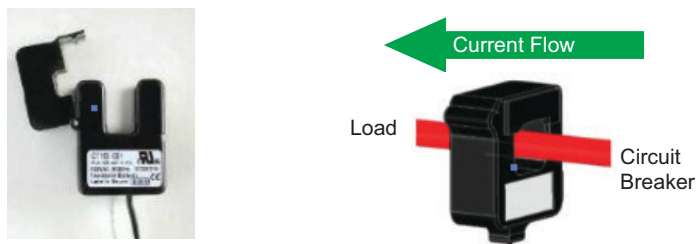
Each CT can be connected to a circuit by opening or removing the top of the CT and snapping it onto the wire that connects the power source to the load. The CT label must face the power source. Ensure that the CT is closed tightly or readings provided by the HDPM6000 head unit may be affected.

Split-Core Models

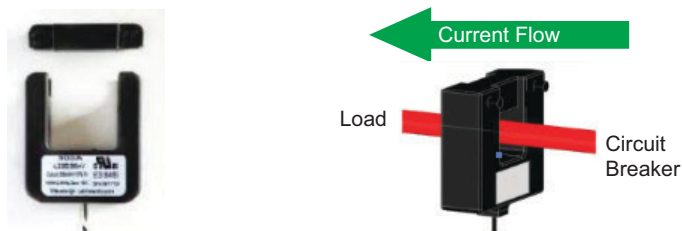
For this model CT, the arrow indicates the current flow (i.e., the label faces away from the circuit breaker).



For this model CT, the label must face the source (i.e., the label faces the circuit breaker).



For this model CT, the label must face the source (i.e., the label faces the circuit breaker).



CTs may be simply hung on the wire which they snap around. An alternative is the use of VELCRO® strips on the bottom or hinged side of the unit, to allow for ease of mounting and removal as necessary. VELCRO is non-conductive.

NOTICE

CT WIRE MISCONNECTION

- Connect white CT wire to the connector port closest to the RJ-45 connector.
- Connect black wire to second CT input.
- Paired lead wires must be kept together.
- Do not install CTs in a panel where they exceed 75% of the wiring space of any cross-sectional area within the panel.

Failure to follow these instructions can result in loss of data and damage to equipment.

Each CT output has two wires. The white and black lead wires from each CT are associated with specific ports on the I/O module. Connect the white lead wire to I1+ and the black lead wire to I1-.

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