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AGILE-CORE®
Distributed Edge Architecture

FMP Receiver - Power Distribution Module, 1U - 2kW



AGILE-CORE® Power Distribution Module (PDM) Front View

OVERVIEW

The AGILE-CORE® Power Distribution Module (PDM) is a component in the Class 4 Fault-Managed Power system. When the PDM (also referred to as the receiver) is paired with an AGILE-CORE® FMP Transmitter using Strandwise™ cable, a Fault-Managed Power system (FMPS) is formed (see diagram). The PDM converts Fault-Managed Power to 57 Vdc low voltage power for IEEE network switches, lighting power controllers and other accessories. The circuit between the transmitter and receiver is a Fault-Managed Power (FMP) circuit and is installed as a Class 4 circuit according to NFPA 70, National Electrical Code (NEC) 2023 and 2026, Article 726. If a fault occurs on the FMP line between the transmitter and receiver (such as a person contacting the conductors) power is disconnected; reducing the risk of fire, equipment damage and personal injury.

FEATURES

- Safely receives Fault-Managed Power and converts it to 57 Vdc
- 2,016 W combined total output, 1 - 2 FMP input channels
- Three main outputs (OP1 - OP3) with on/off circuit breakers
- Five-circuit accessory output (1 A / 2 A circuits)
- Constant current limiting output protection
- DC-OK LED indicators for ease of troubleshooting
- Plug-and-play pluggable terminals for faster installation
- Fanless, convection cooled 1U form factor
- UL 1400-1, UL 62368-1 and CAN/CSA-C22.2 No. 62368-1 listed

APPLICATIONS:

- Smart Building PoE Switches (IEEE 802.3bt) & GPON ONTs
- Lighting Power Controllers & X-PoE Lighting
- 5G Small Cell, DAS, & D-RAN Radios
- Building Controls, Security & Access Control
- Industry 4.0 Control Racks & Cabinets
- Rail & Transit

NOTE

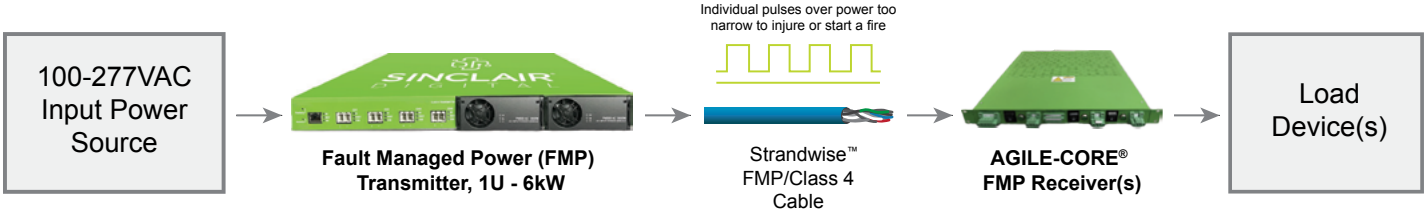
For Class 4 compliance, the AGILE-CORE® PDM receiver must be used with compatible Sinclair® Digital transmitters and Class 4 listed cables.

The following is the list of compatible transmitters, cables and receivers to create a Class 4 system to be installed under National Electrical Code (NEC) 2023 and 2026, Article 726.

Transmitter: TS4-FMP-ACUNV-6K-01
Cable: Any UL 1400-2 listed Class 4 cable is required.
Receiver: PDM-FMP-MW2000-F3

Scan the QR code for more information.

DIAGRAM



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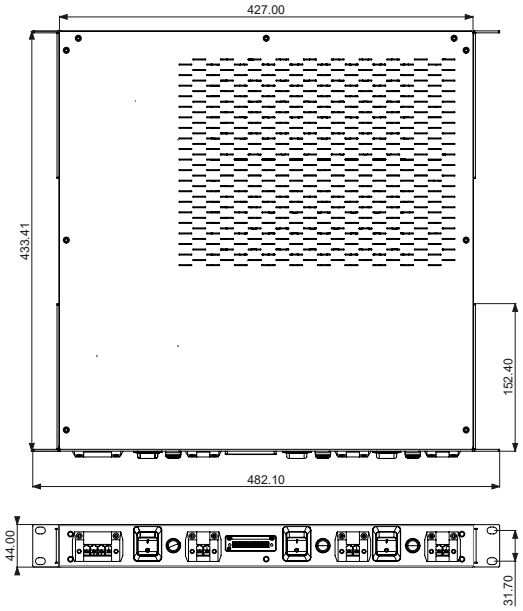
SPECIFICATIONS

TYPE	PARAMETER	PDM-FMP-MW2000-F3	NOTES
Input	Voltage	310 - 350 Vdc (336 Vdc nominal)	Fault-Managed Power from AGILE-CORE® Transmitter only (TS4-FMP-ACUNV-6K-01).
	Number of Input Channels	1 - 2	Two input channels are required for loads above 1,260 W.
	Input Power per Channel	1,260 W (VA) @ 336 Vdc; up to 3.75 A max	
	Input Connector	4-position pluggable, COMBICON PC 4, 7.62 mm pitch (header MFN: 1840573)	[See page 6]
	Input Wiring Size	18 - 12 AWG recommended (24 - 10 AWG accepted)	Use copper conductors only. Larger conductors are recommended for long cable runs.
Output	Voltage	57 Vdc	
	Number of Output Channels	4	Main outputs OP1 - OP3 plus Accessory channel
	Total Output Power	2,016 W (VA) @ 57 Vdc; up to 35.4 A max	Combined total load rating of channels 1 - 3 and Accessory channel.
	Output Channel 1	Up to 20 A max; 1,008 W (VA) @ 57 Vdc max channel power	On/off circuit breaker
	Output Channels 2 & 3	Up to 20 A max per output; 1,008 W (VA) @ 57 Vdc max combined power	On/off circuit breaker on each channel
	Output Channel 4 (Accessories)	Circuits 1 & 2: 114 W @ 57 Vdc; up to 2 A Circuits 3, 4, 5: 57 W @ 57 Vdc; up to 1 A	Shared with main outputs [See page 4]
	Output Protection	Constant current limiting with delay shutdown after 3 seconds	Re-power on to recover.
	Output Connectors	2-position pluggable (OP1 - OP3); 10-position pluggable (Accessories)	Included [See page 3]
Indicators	LED Indicators	DC-OK, one per main output (OP1 - OP3)	[See page 7]
Environment	Operating Temperature	-20 °C (-4 °F) to 50 °C (122 °F)	Derate after 40 °C with 1U spacing [See page 3 for temperature derating curve].
	Storage Temperature	-20 °C (-4 °F) to 70 °C (158 °F)	
	Humidity	20% to 70% RH Non-condensing	
	Environmental Space	Indoor use only	
Mechanical	Dimensions (W x D x H)	427.0 x 433.4 x 44.0 mm (16.81 x 17.06 x 1.73 in) 482.1 mm (18.98 in) wide with rack ears	Fits 1RU 19” (482.6 mm) and 23” (584.2 mm) racks [See page 3]
	Weight	18.5 lbs	
	Enclosure	Powder coated steel, green	
	Cooling	Fanless, convection cooled	
Approvals	Safety	UL 1400-1 UL 62368-1 CAN/CSA-C22.2 No. 62368-1	
	EMC	FCC Part 15 Subpart B Class A	
	Other	CE, RoHS, REACH	
Box Contents	Included Parts	[See page 3]	

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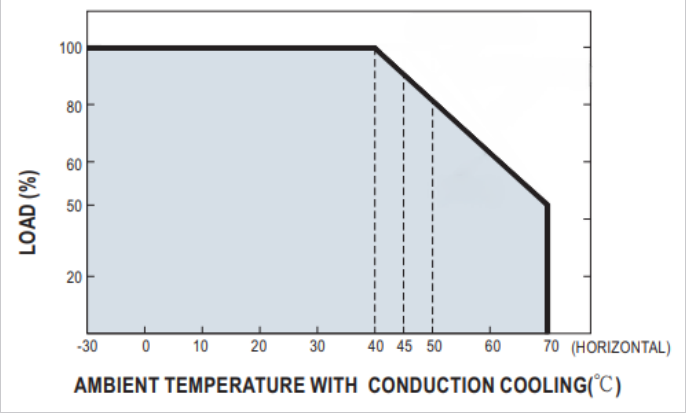
DETAILED DIMENSIONS



PDM-FMP-MW2000-F3

All dimensions in mm. Chassis width 427.00 mm; overall width with rack ears 482.10 mm.

TEMPERATURE DERATING CURVE



Derate after 40 °C with 1U spacing between adjacent units. See installation instructions on page 7 for more information.

PDM-FMP-MW2000-F3 INCLUDED PARTS LIST

- 1x PDM-FMP-MW2000-F3 Power Distribution Module
- 1x FMP Input Plug, 4-position (CH1 / CH2)
- 3x Main Output Plugs, 2-position (OP1 - OP3)
- 1x Accessory Output Plug, 10-position
- 4x Rack Mounting Brackets



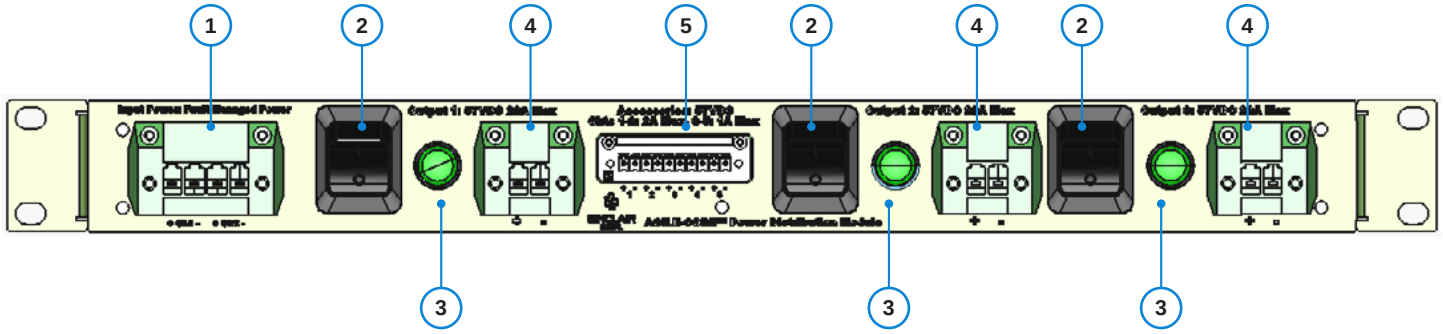
Input plug | Output plug | Accessory plug | Brackets

Contact Sinclair® Digital for transmitter pairing and system design information.

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AGILE-CORE® PDM Front Panel



1 Fault-Managed Power Input Port

(2) FMP input channels (CH1, CH2) on a 4-position pluggable connector. Connect each channel to one output channel of a listed AGILE-CORE® FMP Transmitter. One channel supports up to 1,260 W; use both channels for loads above 1,260 W.

Pin	Description
1	CH1 DE Input Pos(+)
2	CH1 DE Input Neg(-)
3	CH2 DE Input Pos(+)
4	CH2 DE Input Neg(-)

Pins numbered left to right as viewed from the front, per front panel marking.

2 Output Circuit Breakers

Each main output (OP1 - OP3) has an on/off circuit breaker. Use the breaker to switch the output off before connecting or servicing loads. If a breaker trips, remove the cause of the overload or short circuit before resetting.

3 DC-OK LED Indicators

One green DC-OK LED for each main output. LED information is provided on page 7 of this quick start guide.

4 Main DC Outputs (OP1 - OP3)

57 Vdc outputs on 2-position pluggable connectors (+ / -), for PoE switches, lighting power controllers and other high-power loads.

5 Accessory Output (Channel 4)

Five 57 Vdc accessory circuits on a 10-position pluggable connector. Each accessory circuit draws from, and counts against, the main output channel it is shared with.

Circuit	Max	Shared With	Switching
1, 2	2 A / 114 W	Output CH 1	Unswitched
3	1 A / 57 W	Output CH 1	Switched
4	1 A / 57 W	Output CH 2	Switched
5	1 A / 57 W	Output CH 3	Switched

Unswitched circuits stay energized when the Output CH 1 breaker is off. Switched circuits follow the breaker of the channel they share.

6 Grounding Stud (Rear Face)

The grounding stud is located on the rear face of the PDM (not shown). See the “Grounding” section on page 6.

Output Power Budget	Max Power @ 57 Vdc	Max Output Current
Output Channel 1 (OP1 + Accessory circuits 1 - 3)	1,008 W	20 A (OP1)
Output Channels 2 & 3 combined (OP2 + OP3 + Accessory circuits 4 - 5)	1,008 W	20 A per output
Total, all outputs	**2,016 W**	**35.4 A**

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WARNING! AVERTISSEMENT!

Ensure that the unit and the FMP input circuit are de-energized before contacting any exposed conductors. Up to 350 Vdc is present on the FMP input and inside the unit while running.
Assurez-vous que l'unité et le circuit d'entrée FMP sont hors tension avant de toucher des conducteurs exposés. Jusqu'à 350 Vdc est présent sur l'entrée FMP et à l'intérieur de l'unité pendant le fonctionnement.

Do not open the unit. There are no serviceable parts within the unit.
N'ouvrez pas l'appareil. Il n'y a aucune pièce réparable dans l'unité.

AGILE-CORE® PDM inputs are intended to be powered by AGILE-CORE® TS4 FMP Transmitter products only. Do not connect any other power source to the PDM inputs.
Les entrées du module PDM AGILE-CORE® sont destinées à être alimentées uniquement par les émetteurs AGILE-CORE® TS4 FMP. Ne raccordez aucune autre source d'alimentation aux entrées du PDM.

The voltage rating of the transmission wiring between AGILE-CORE® TS4 Transmitter and PDM Receiver(s) must be a minimum of 450 Vrms. The minimum wire gauge is 18 AWG copper conductors.
La tension nominale du câblage de transmission entre l'émetteur AGILE-CORE® TS4 et le(s) récepteur(s) PDM doit être d'au moins 450 Vrms. Le calibre de fil minimum est de 18 AWG, conducteurs en cuivre.

Do not connect or disconnect the FMP input plug while the circuit is energized or under load.
Ne branchez pas et ne débranchez pas la fiche d'entrée FMP lorsque le circuit est sous tension ou en charge.

Splice connections on the input of the receiver are to be made within a UL listed junction box if installed within concealed spaces or where the splice may come in contact with a flammable material.
Les connexions d'épissure à l'entrée du récepteur doivent être effectuées dans une boîte de jonction homologuée UL si elles sont installées dans des espaces cachés ou là où l'épissure peut entrer en contact avec un matériau inflammable.

Line conductors cannot be separated by more than 8 inches.
Les conducteurs de ligne ne peuvent pas être séparés de plus de 8 pouces.

The total load connected to all outputs must not exceed 2,016 W. For indoor use only.
La charge totale raccordée à toutes les sorties ne doit pas dépasser 2 016 W. Pour usage intérieur seulement.

Concerned industries should practice accurate assessment and recording of direct stray currents to gauge and control any adverse effects.
Les industries concernées doivent procéder à une évaluation et à un enregistrement précis des courants vagabonds directs afin d'évaluer et de contrôler tout effet indésirable.

This equipment is not suitable for use in locations where children are likely to be present.
Cet équipement ne convient pas à une utilisation dans des endroits où des enfants sont susceptibles d'être présents.

FCC CAUTION

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Note: 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.

WARRANTY STATEMENT

There are no serviceable parts within the AGILE-CORE® Power Distribution Module. Disassembling or modifying the unit and/or factory attached cables will void the warranty.

SYMBOLS

Hazardous Voltages present when energized. Do not open the unit while it is energized.



PROTECTIVE EARTH REQUIREMENTS

Caution: All AGILE-CORE® PDM units must have a protective earth grounding connection, made at the rear-face grounding stud, to a facility earth connection for safe operation.
Attention : Toutes les unités AGILE-CORE® PDM doivent avoir une connexion de mise à la terre de protection, réalisée au goujon de mise à la terre situé à l'arrière de l'unité, avec une connexion de mise à la terre de l'installation pour un fonctionnement sûr.



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INSTALLATION INSTRUCTIONS

CAUTION / ATTENTION

Input and Output wiring and over-current protection must be installed in accordance with all local and national electrical codes and requirements.

Le câblage d'entrée et de sortie et la protection contre les surintensités doivent être installés conformément à tous les codes et exigences électriques locaux et nationaux.

CAUTION / ATTENTION

Ensure the transmitter output channels feeding the PDM are disabled or de-energized prior to making input connections.

Assurez-vous que les canaux de sortie de l'émetteur alimentant le PDM sont désactivés ou hors tension avant d'établir les connexions d'entrée.

NOTE

After making/terminating input and output connections, ensure that there are no bare contacts or conductors. Conductors must be properly insulated from contact.

The FMP input is de-energized by disabling the corresponding output channels at the AGILE-CORE® FMP Transmitter, or by disconnecting the transmitter from its input power source.

GROUNDING

Bond the PDM chassis to the facility earth or to the grounded equipment rack using the grounding stud on the rear face of the unit. 10 AWG copper wire is recommended. Make the ground connection before connecting FMP input power.

FMP INPUT CONNECTIONS & WIRING

The AGILE-CORE® PDM uses a 4-position pluggable screw-terminal connector (COMBICON PC 4, 7.62 mm pitch) for its two FMP input channels. 18 - 12 AWG wire is recommended. Larger conductors are recommended for long cable runs. Use copper conductors only.

Input Conductor Installation:

1. Strip conductors by 7 mm (0.28"). Ferrules may be used on stranded conductors.
2. Fully insert each conductor into the correct pin location based on the table on page 4. Observe polarity.
3. Tighten the terminal screw with a slotted screwdriver to 0.5 - 0.6 N·m (4.4 - 5.3 lb-in).
4. Pull on each conductor to ensure it is secure.
5. Insert the plug into the PDM input header and tighten the flange locking screws.

INPUT CONNECTOR DATA

Parameter	Value
Connector system	COMBICON PC 4, 7.62 mm pitch
Header MFN	Phoenix Contact 1840573
Positions	4 (2 FMP channels)
Rated current / voltage	20 A / 630 V
Accepted wire gauge	24 - 10 AWG
Recommended wire gauge	18 - 12 AWG
Strip length	7 mm (0.28")
Tightening torque	0.5 - 0.6 N·m (4.4 - 5.3 lb-in)
Locking	Screw flange

The input connector has no switching capability. Never plug in or unplug the connector while energized or under load.

DC OUTPUT CONNECTIONS & WIRING

Main outputs OP1 - OP3 use 2-position pluggable connectors marked + / -. Accessory circuits 1 - 5 use a single 10-position pluggable connector marked +1- through +5-. All output plugs are included.

Size output conductors for the output rating and connected load in accordance with the NEC. 12 AWG copper is recommended for main outputs OP1 - OP3. Keep output cable runs as short as practical to limit voltage drop at 57 Vdc.

Switch the output circuit breakers OFF before connecting or disconnecting loads. Accessory circuits 1 and 2 are unswitched and remain energized while the PDM is powered.

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INSTALLATION INSTRUCTIONS (CONT.)

PHYSICAL INSTALLATION

The AGILE-CORE® PDM is designed to be rack-mounted in a 1RU space in 19" (482.6 mm) or 23" (584.2 mm) racks using the provided rack-mount brackets. The PDM is fanless and convection cooled; do not block ventilation openings.

Follow the instructions below for rack-mount installations:

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Install the equipment in an environment compatible with the maximum ambient temperature of 50 °C (122 °F).

B) Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained.

Note: Allow 1U separation between the PDM and adjacent equipment. Output must be derated above 40 °C ambient (see page 3).

START-UP PROCEDURE

1. Verify the PDM chassis is grounded, FMP input polarity is correct, and all output circuit breakers are OFF.
2. Enable the corresponding output channels at the AGILE-CORE® FMP Transmitter. The transmitter channel LEDs will step through Boot-up, Pre-charge DE and Pre-charge Load before Normal Operation (see the Transmitter Quick Start Guide, page 9).
3. Switch ON the output circuit breakers one at a time and confirm the DC-OK LED for each output illuminates.
4. Verify each connected load powers up.
5. Confirm total connected load is within the 2,016 W system rating (1,008 W for CH 1; 1,008 W combined for CH 2 & 3) using the transmitter web interface.

DC-OK LED CODES

LED PATTERN	STATE	NOTE
GREEN ON	Output OK	57 Vdc is present on the corresponding main output (OP1, OP2 or OP3).
OFF	No output	Output breaker is OFF or tripped, output is in protective shutdown, or FMP input is not present.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	TROUBLESHOOTING
All DC-OK LEDs off	No FMP input power	Check transmitter channel LED fault code Check FMP wiring, polarity and connections Check cable length & gauge
One DC-OK LED off, breaker ON	Overload - protective shutdown	Output shuts down after 3 s in current limit Remove overload or short, then re-power to recover
One DC-OK LED off, breaker OFF	Breaker switched off or tripped	Check for overload or short on that output Remove fault, then reset breaker
Accessory circuit not powering device	Overload or shared channel off	Check load against circuit rating (1 A / 2 A) Check breaker of the shared output channel
Transmitter reports Overload (4 blinks)	Load exceeds available power	Reduce load on the PDM outputs Connect second input channel for loads above 1,260 W
Transmitter reports Temperature (5 blinks)	Ambient too high	Reduce ambient temperature or load (derate above 40 °C) Improve rack airflow / 1U spacing

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