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Certificate of Conformity

Certificate num.	Registration date	V	ersion	Valid until	
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Product designation

Ampac, EvacU Elite with Bosch PRAESENSA, Emergency Warning Control and Indicating Equipment (EWCIE) fitted with Public Address and Voice Alarm (PAVA) system

(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Bosch Security Systems Pty Ltd

Suite 2.01, Level 2, 21 Solent Circuit, BAULKHAM HILLS, NSW, AUSTRALIA, 2153

Registrant

Bosch Security Systems Pty Ltd Suite 2.01, Level 2, 21 Solent Circuit, BAULKHAM HILLS, NSW, AUSTRALIA, 2153

Producer Ampac Pty Limited 7 Ledgar Road, BALCATTA, WA, AUSTRALIA, 6021

Conformance criteria and evaluation

The Ampac, EvacU Elite with Bosch PRAESENSA, Emergency Warning Control and Indicating Equipment (EWCIE) fitted with Public Address and Voice Alarm (PAVA) system has been evaluated and verified as conforming with the relevant requirements of the following criteria.

- 1. Australian Standard AS 4428.16:2020, 'Fire detection, warning, control and intercom systems -Control and indicating equipment Part 16: Emergency warning control and indicating equipment'.
- 2. Australian Standard AS 4428.4:2016, 'Fire detection, warning, control and intercom systems -Control and indicating equipment Part 4: Emergency intercom control and indicating equipment'.
- 3. Australian Standard AS 7240.4:2018, 'Fire detection and alarm systems Part 4: Power supply equipment (ISO 7240-4:2017, MOD)'.

This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices .and consumer protection legislation and regulations.
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Issued by

Kaj Loh Executive Officer – ActivFire Scheme





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Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. All parts of the EWCIE/EICIE are mounted in a single enclosure or adjacent enclosures.
- ii. All parts of the PAVA system are mounted within a licked enclosure or cabinet, using a method/lock other than the 003 keylock.
- iii. The EWCIE/EICIE enclosure is fitted with the labels as described in this report to meet the Marking requirements of Section 17.
- iv. The EWCIE/EICIE and PAVA system are installed and maintained as recommended by the manufacturer.
- v. The EWCIE/EICIE and PAVA system are used with a power supply that conforms with AS 7240.4.
- vi. The ASS63HPA, 150 W high power amplifier module was only evaluated and verified as conforming to AS 4428.16:2020.
- vii. The EWCIE/EICIE and PAVA system were not evaluated for operating temperatures exceeding 40 °C.
- viii. The PAVA system microphones supplied by the PRA-CSL and PRA-CSLW are not to be used for emergency purposes.

Producer's description

Ampac EvacU Elite EWCIE:

The Ampac EvacU Elite is an Emergency Warning Control and Indicating Equipment (EWCIE) with an integrated Emergency Intercom System (EICIE).

The system is designed to receive input signals from a fire detection system then broadcast and facilitate the orderly evacuation of a building in the event of a fire or emergency situation.

The Ampac EvacU Elite supports a high-level interface to an Ampac FireFinderPlus in a combination or individual cabinets. Low level interface is available for third party fire detection systems via hardwired inputs.

Each cabinet size supports a number of universal rack frame assemblies, touch screen graphical user interfaces, power supplies and module cards.

The cabinet is available in two cabinet sizes: 13U and 24U. The 24U cabinet can accommodate 5 universal racks and the 13U cabinet can accommodate 2 universal racks.

The primary (GUI) graphical touchscreen user interface incorporates the menu system, common and individual controls and indicators for emergency zones. Secondary graphical user interfaces support additional individual controls and indicators for emergency zones as required. The 13U cabinet supports 3 GUIs and the 24U cabinet supports 7 GUIs.

Bosch PRESENSA PAVA system:

The Bosch PRESENSA is a Public Address and Voice Alarm (PAVA) system that provides audio for music or messaging to every area of the building and is controlled via graphical user interface on the call station touchscreen, or via personalized software on a tablet or PC.

The Bosch PRESENSA uses IP-connectivity and a smart power concept with integrated redundancies to provide a PAVA system that is suited for centralized of decentralized topologies.

Ampac, EvacU Elite with Bosch PRAESENSA:

The Bosch PRAESENSA PAVA system components are provided as additional Ampac EvacU Elite EWCIE components which allows the combined EWCIE to be distributed in multiple geographic locations. At a cabinet adjacent to the Ampac EvacU Elite, at least two Bosch PRAESENSA PAVA system fibre transceivers are required to provide redundant transmission paths to distributed Bosch PRAESENSA PAVA system components.

At each location where Bosch PRAESENSA PAVA system amplifiers (PRA-AD604 and/or PRA-AD608) are to provide connection for emergency zones, a Bosch PRAESENSA PAVA system System Controller (PRA-SCL) and Power Supply (PRA-MPS3) is required, along with appropriate Bosch PRAESENSA PAVA system networking equipment. Bosch PRAESENSA PAVA system Emergency call stations (PRA-CSLx) provide analogue audio input to the Bosch PRAESENSA PAVA system from the EvacU Elite for the purposes of transmission live speech and test tones. The PRA-CSLx does not provide mandatory controls or indicators for the EWCIE.

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Technical specification

The following details are a representative extract of the technical specification for the Ampac, EvacU Elite with Bosch PRAESENSA, Emergency Warning Control and Indicating Equipment (EWCIE) fitted with Public Address and Voice Alarm (PAVA) system and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

Schedule of components and/or assemblies

Ampac EvacU Elite:

The following is a schedule of validated components and/or assemblies of the certified/listed equipment.

Variant			_		Mandatory /	Hardware	Software
Туре	Ide	ent	Description		optional	version / issue	version
Board	BRD63	LPA1-A	Dual 25 W ampl	ifier	Optional	5	1.0.35.0
	BRD63	LPA1-B	Single 50 W amp	olifier	Optional	5	1.0.35.0
	ASS63HPA *	BRD63HD C1-A BRD63HP A1-A	150 W high power amplifier*	HPA DC-DC converter High powered amplifier board	Optional	3	1.0.9.0
	BRD63	ABB1-A	Amplifier backpl	lane	Mandatory	1	N/A
	BRD63I	PDB1-A	Power distributi	on	Mandatory	1	N/A
	BRD630	CPU1-A	Distribution CPL	J	Mandatory	7	1.4.4.25
	BRD63	CPUx-B	Distribution CPU for use with PAIC		Mandatory	1	1.04.12
	BRD63	GUI1-A	Graphical user in	nterface card - primary	Mandatory	4	1.2.2.6
	BRD63	NIC1-A	Network interfa	ce card	Optional	5	1.0.6.1
	BRD63	GUI-B	Graphical user in	nterface card - secondary	Optional	4	1.0.8.14
	BRD63	MIC1-A	Multi-Purpose in	nput card	Optional	4	1.1.0.5
	BRD63N	AOC1-A	Multi-Purpose o	output card	Optional	4	1.1.0.4
	BRD63	ILC1-A	Quad radial line	card	Optional	5	1.0.15.0
	BRD63	LILC1-A	Dual loop line ca	Dual loop line card		4	1.0.9.0
	BRD63	NICxB	Public Address Interface Card – HLI Bosch PRAESENSA		Mandatory	11.004	1.00.07
PSU	BRD63	PCC1-A	Power control card - primary		Mandatory	10	1.1.1.3
	RCB-16	500-24	Power supply m	Power supply module - 27V 1600 W		N/A	N/A
	BRD63	PCC1-B	Power control c	ard - secondary	Optional	10	1.1.1.3
WIP	ASS63	WIPM	Primary WIP Ha	ndset	Optional	1	N/A

Note: "*" indicates that the module was only evaluated and verified to conform to AS 4428.16:2020.

Bosch PRAESENSA PAVA system:

The following is a schedule of validated components and/or assemblies of the certified/listed equipment for the

Variant			Mandatory /	Hardware	Software
Туре	Ident	Description	optional	version / issue	version
	PRA-CSLx	PRAESENSA Emergency call station	Mandatory	01/0	1.5
	PRA-SCL	PRAESENSA System Controller	Mandatory	01/0	1.0
	PRA-MPS3	PRAESENSA Multi-function power supply	Mandatory	01.0x	1.0x
_ .	PRA-AD604	PRAESENSA 4 Channel 600 W amplifier	Optional	01/0	1.0
Part	PRA-AD608	PRAESENSA 8 Channel 600 W amplifier	Optional	01/0	1.0
num.	PRA-EOL	PRAESENSA End of line device	Mandatory	01/0	1.0
_	PRA-SFPLX	PRAESENSA Fibre Transceiver Single-mode	Optional	-	-
	PRA-SFPSX	PRAESENSA Fibre Transceiver Multi-mode	Optional	-	-
	PRA-ES8P2S	PRAESENSA Network Switch	Mandatory	01/0	1.0

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Schedule of optional functions with requirements

AS 4428.16:2020:

The following schedule of AS 4428.16:2020 optional (or optional required) functions with requirements have been validated for the appropriate EWCIE grade as nominated.

Opt	ion	Grade 1
1.	Indications:	
	a. Alarm signals (Cl 7.2)	Provided
	b. Alert signal (Cl 7.3)	Provided
	c. Indication of the emergency warning condition (CL 7.5)	Provided
	d. Audible signal of alarm signal reception (Cl 7.6)	Provided
2.	Controls:	
	a. Delay before emergency warning condition (Cl 7.7)	Provided
	b. Phased evacuation for multi-zoned systems (Cl 7.8)	Provided
	c. Silencing the emergency warning condition from the emergency detection system (Cl 7.9.1)	Not provided
	d. Silencing the emergency warning condition with a manual control (Cl 7.9.2)	Provided
	e. Reset of the emergency warning condition from the emergency detection system	Not Provided
	f. Reset of the emergency warning condition with a manual control (Cl 7.10.2)	Provided
3.	Outputs:	
	a. Output to fire alarm devices (Cl 7.11)	Provided
	b. Emergency warning condition output signal (Cl 7.12)	Provided
4.	Disabled condition (Cl 9)	Provided
5.	Test condition and indication (Cl 10)	Provided
	a. Automatic/manual mode control (Cl 11.1)	Provided
	b. Manual control to networked EWCIE (Cl 11.2)	Provided
	c. Individual emergency zone controls (Cl 12.1)	Provided
	d. All emergency zone control (Cl 12.2)	Provided
6.	Interface to external device(s) (Cl 13)	Not provided
7.	Emergency microphone (Cl 14)	Provided
	a. Ready-to-talk indicator	Provided
8.	Redundant power amplifiers (Cl 15.15)	Not Provided
	a. Dry heat, steady state test (operational) (Cl 18.9)	40 °C*

Note: "*" indicates that due to the Bosch PRASENSA not being evaluated to clause 18.9, the Ampac, EvacU Elite with Bosch PRAESENSA was not evaluated for operating temperatures exceeding 40 °C.

AS 4428.4:2016:

The following schedule of AS 4428.4:2016 optional (or optional required) functions with requirements have been validated.

Opt	ion	
1.	Fault warning condition:	
	a. External silencing of the EICIE fault condition (Cl 8.8)	Provided
2.	Zone cleared condition (Cl 9)	Provided
3.	Controls:	
	a. Manual control for networked EICIE (Cl 10)	Provided
	b. Manual controls of EICIE (Cl 11)	Provided
	c. WIP group call control (Cl 11.2)	Provided
	d. Interface to external control device(s) (Cl 12)	Not provided
4.	Integrity of transmission paths:	
	a. Paths to remote power supplies (Cl 13.5.4)	Provided
5.	Operational	
	a. Dry heat, steady state test (operational) (Cl 16.6)	40 °C*

Note: "*" indicates that due to the Bosch PRASENSA not being evaluated to clause 18.9, the Ampac, EvacU Elite with Bosch PRAESENSA was not evaluated for operating temperatures exceeding 40 °C.

AS 7240.4:2018:

The following schedule of AS 7240.4:2018 optional (or optional required) functions with requirements have been validated.

Option		
1.	Impact (operational) (Cl. 6.8)	Provided
2.	Vibration, sinusoidal (operational) (Cl. 6.9)	Provided
3.	Vibration, sinusoidal (endurance) (Cl. 6.12)	Provided
4.	Dry heat steady state (operational) (Cl 6.13)	Provided

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Schedule of properties/characteristics

The following schedule is an extract of physical and operational properties/characteristics of the certified/listed equipment.

Ampac EvacU Elite general:

Parameter	24U Floor Mount Enclosure	13U Wall / Floor Mount Enclosure		
Dimensions	1800 mm (H) × 650 mm (W) × 380 mm (D) 900 mm (H) × 650 mm (W) × 380 mm (D)			
External operating voltage	230 VAC (operating ra	ange 195 to 253 VAC)		
Max No. of emergency zones	51	12		
Max No. of WIP handsets	10	24		
Max No. of nodes	64			
Max No. of alarm inputs	m inputs 512			
Max No. of RPCs per node	8 (100 m CAT5/6 daisy chain)			
Amplifier sizes	Dual 2	5 Watt		
	50 V	Vatt		
	150 Watt with integ	rated 4-way splitter		
Graphical user interfaces	7	3		
Universal Rack Frame	5	2		
Temperature	-5 °C to +50 °C			
Humidity	5% to 95% no	n-condensing		

Ampac EvacU Elite graphical user interface:

Parameter	Detail
Display screen	9-inch TFT LCD 800 × 480 with LED backlight and resistive touch screen
Microphone	600Ω with capsule monitoring
Emergency intercom headset	Electret capsule with 150 Ω speaker
USB support	Host (USB memory stick) and Device (mini-USB) connection
SD Card support	Yes
HLI (to 3 rd party FDCIE/Graphics)	1 × RJ45 connector with isolated RS 485
Ethernet support	2 × RJ45 with proprietary power and transformer isolation (not for general use)
Current consumption	0.185 amps (quiescent) and 0.207 amps (active)

Ampac EvacU Elite amplifier card:

Parameter	Dual 25 Watt	50 Watt 150 Watt		
Amplifier	Class D amplifier with 2 × 25 Watt	Class D amplifier with 1 × 50 Watt	Class D amplifier with 150 Watt	
Ampliner	independent audio outputs	independent audio outputs	audio power and 4 audio outputs	
Audio output 1	N/A	N/A	150 Watt (max)	
Audio output 2 to 4	N/A	N/A	75 Watt (max) – total of 150 Watt	
Audio output 2 to 4			per card	
Distortion	<= 0.1% @ 25 Watt × 2	<= 0.1% @ 50 Watt × 1 <= 0.3% @ 150 Watt × 1		
Frequency response	400 Hz to 10 kHz ± 1 dB w.r.t 1 kHZ		300 Hz to 10 kHz ± 1 dB w.r.t 1 kHZ	
	200 Hz to 12 kHz	150 Hz to 12 kHz ± 3 dB w.r.t 1 kHZ		
SNR	>=70%			
Speaker circuit monitoring	DC, nominal 47 kΩ			
Max drive voltage		100 V _{RMS} @ full load		
Max output current	2 × 0.250 Amps	0.500 Amps 1.500 Amps		
Max cable size		2.55 mm ^{2 Note 1}		
Input	2 × Audio streams @ 32 kHz 16-bit audio	Audio streams @ 32 kHz 16-bit audio		
No. of rack slots		2		
Current consumption	0.102 Amps (quiescent) and 2.47	0.097 Amps (quiescent) and 2.33	0.100 Amps (quiescent) and	
	amps (full audio load)	amps (full audio load)	7.500 Amps (full audio load)	

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Ampac EvacU Elite power	supply equipment:					
Parameter		13U-RCB-1600	24U-RCB-1600			
Nominal mains operating vo	oltage	230 V 16 A 50/60 Hz	230 V 16 A 50/60 Hz			
Output voltage		21.0 Vdc to 29.0 Vdc	21.0 Vdc to 29.0 Vdc			
Cabinet output power ratin	g. Pa. max	1800 W	2700 W			
	6, , , ,	(2 PSU modules)	(3 PSU modules)			
Cabinet output power ratin	g, Pb, max	2400 W	3600 W			
		(2 PSU modules)	(3 PSU modules)			
Ripple and noise voltage		<1%	<1%			
Maximum battery circuit re	sistance, Rmax	30 milliohms	20 milliohms			
		(2 PSU modules)	(3 PSU modules)			
Minimum battery capacity		2 x 12 V, 24 Ah	2 x 12 V, 24 Ah			
Bosch PRAESENSA genera	ıl:					
Parameter		v	alue			
Operating Temperature		-5 t	o 50 °C			
Storage and transport temp	erature	-301	to 70 °C			
Humidity (non-condensing)		5	- 95%			
Case Material		Steel				
Case Colour		RA	L9017			
Ingress protection		IP30				
Network interface – Etherne	et	100BASE-T	X, 1000BASE-T			
Bosch PRAESENSA amplif	iers:					
Parameter		v	alue			
Output Voltage, max		100 V				
Power Output		6	00W			
Minimum resistive load		16.	7 ohm			
Maximum capacitive load		:	2 uF			
Frequency response – full to 20 Hz to 20 kHz	o no load regulation,	< (0.2 dB			
Total Harmonic distortion + to 20 kHz	Noise (THD+N), 20 Hz	< 0.5% (rated power)				
Signal-to-noise ratio, 20 Hz	to 20 kHz	< 0.1% (6dB below rated power)				
Bosch PRAESENSA power	supply equipment:					
Parameter		v	alue			
Nominal mains operating vo	oltage	102 -	264 Vac			
Output voltage						
48 Vdc outputs (1-3)	46 Vdc	to 50 Vdc			
24 Vdc output		23 Vdc	to 25 Vdc			
PoE output (1-2)		44 Vdc	to 57 Vdc			
Lifeline DC outpu	uts (1-3)	9 Vdc	to 18 Vdc			
Cabinet output power ratin	g	(Pa max/ P	Pb max/ Pmin)			
48 Vdc outputs (1-3)	264 W/2	264 W / 0 W			
24 Vdc output		16.8 W/1	L6.8 W/ 0 W			
PoE output (1-2)		15.4 W / 1	15.4 W / 0 W			
Lifeline DC outpu	uts (1-3)	12.6 W /	12.6 W / 0W			
Maximum battery circuit re	sistance, Rmax					
230 Ah battery		7.1 m	nillionms			
180 Ah battery		8.6 m	ninionms			
140 Ah battery		9.8 m	illionms			
LUU AN Dattery		11 m				
winimum pattery capacity		2:	SU AII			

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Supplementary information

Schedule of relevant articles

The following schedule is an extract of articles significant and/or related as evidence of conformity.

Reference			Data issued		
Туре	Ident.	Title / description	(or date validated)	Source	
	XF3515/R1	Evaluation and Verification of Conformity of the AMPAC, EvacU Elite Emergency Warning Control and Indicating Equipment, fitted with Bosch Praesensa PAVA components	17-Oct-2023		
	CSBA0060/R1	Verification of conformity of the AMPAC, EvacU Elite Emergency Warning Control and Indicating Equipment to the requirements of AS 4428.4:2016 and AS 7240.4:2018	11-Jul-2023	CSIRO Fire Systems Laboratory, AU.	
	XF3544/R2	Evaluation for Conformity of the AMPAC, EvacU Elite Emergency Warning Control and Indicating Equipment, combined with 150 Watt High Powered Amplifier to the requirements of AS 4428.16:2020	6-Feb-2023		
	171201096-019- Ver1.00	telefication TEST REPORT Based on: ISO 7240-4:2017 AS 7240-4:2018 PRAESENSA Power Supply Equipment PRA MPS3	6-May-2020		
Report	171201096-022 Ver1.00	telefication TEST REPORT ISO 7240-16:2007 No 171201096-022 Ver. 1.00 Bosch Public Address and Voice Alarm System Praesensa	23-Mar-2020	Telefication B.V., NL	
	TE-P114712- 1001 Issue 1	BRE Global Test Report Technical evaluation of the Ampac 13U EvacU ^{Elite} and 24U EvacU ^{Elite} emergency warning control and indicating equipment, emergency intercom control and indicating equipment and power supply equipment to the requirements of AS 4428.16:2015, AS 4428.4:2016, AS 7240.4:2018 and selected clauses from AS 4428.16:2020 and EN 50130-4:2011+A1:2014	11-May-2022	BRE Global Ltd, UK	
	SW-P114712- 1001 lssue:1	BRE Global Test Report Software Evaluation of the AMPAC 13U & 24U EvacU Elite Emergency Warning CIE with Emergency Intercom CIE and Power Supply Equipment to the requirements of Clause 16 in AS 4428.16:2020, Clause 14 in AS 4428.4:2016 and Clauses 5.8 & 9.2 in AS 7240.4:2018	8-Apr-2022		
Certificate	966d Issue:01	LPCB Certificate of Product Approval Ampac Pty Ltd Products: Control and Indicating Equipment 13U EvacU Elite Cabinet 24U EvacU Elite Cabinet Standards: AS 4428.16:2020 AS 7240.4:2018 AS 4428.4:2016	26-Apr:2022	Loss Prevention Certification Board, UK	

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Ref	erence		Data issued		
Туре	ldent.	Title / description	(or date validated)	Source	
Manual	MAN3137-1	AMPAC Adavanced Warning Systems EvacU ^{Elite} Emergency Warning & Intercom System (EWIS) Install, Commission and User Manual (MAN3137-1 EvacU Elite Install Commission and User Manual .pdf)	10-Mar-2022		
Product data	PDS 6350-0001-7	AMPAC Adavanced Warning Systems EvacU ^{Elite} (PDS6350-0001-7 EvacU Elite.pdf)	Ampac Pty Ltd 17-Mar-2022 WA, AU	WA, AU	
sheet PDS 6350 HPA150V	PDS 6350- HPA150W	AMPAC Adavanced Warning Systems 150 Watt Amplifier Card (PDS6350-HPA150W EvacU Elite 150 Watt Amplifier Card.pdf)	2-May-2022		
Configuration manual	202106231349	BOSCH PRAESENSA Public Address and Voice Alarm System Configuration manual 2021.06.23 V1.40 PRAESENSA 1.40 (PRAESENSA_Configurat_Configuration_Manual_enUS_18014473303379595.pdf)	23-Jun-2021		
Installation manual	202106231304	BOSCH PRAESENSA Public Address and Voice Alarm System Installation manual 2021-06-23 V1.40 PRAESENSA 1.40 (Praesensa_Installation_Manual_enUS_74793894027.pdf)	23-Jun-2021	Bosch Security Systems B.V., NL	
Data sheet	202103101629	BOSCH PRA-MPS3 Multifunction power supply, large PRAESENSA 202103101629 V9 March 10, 2021 (PRA_MPS3_Data_sheet_enUS_76035367307.pdf)	11-Mar-2021		