LCIE
Laboratoire de Moirans
Z.I. Centr'Alp
170, Rue de Chatagnon
38430 MOIRANS-FRANCE

GENERAL INFORMATION

FCCID: 2ADGA-01-EM43

1.1. Product description

PowerLogic™ EM4302 / EM4305 / EM4310 / EM4320

en es fr de it pt

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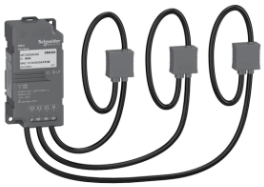


Schneider Electric

www.schneider-electric.com
EM4300; COM'X; MPM; SSL; wireless

en 7EN02-0356-00

en	Keep this document for future use.
es	Conserve este documento para futuros usos.
fr	Conservez ce document pour utilisation ultérieure.
de	Dieses Dokument ist für späteres Nachschlagen aufzubewahren.
it	Conservare questo documento come riferimento futuro.
pt	Guarde este documento para uso futuro.

1 Wireless energy meter / Medidor de energía inalámbrico / Compteur d'énergie sans fil / Funk-Energiemessgerät / Contatore di energia wireless / Medidor de energia sem fios

en
- Class 1 accuracy, active energy (3-phase with neutral)
- Quick, easy installation with 3 flexible current sensors (calibrated and permanently attached to meter)
- Rated current: 200, 500, 1000 or 2000 A
- Rated voltage inputs: 3 x 100 V L-N (173 V L-L)...277 V L-N (480 V L-L)
- Powered from L1-N voltage inputs
- DIN-rail or flat surface mounting
- Wireless communications
- Compatible with Com'X and MPM series wireless gateways

es
- Precisión de la Clase 1, energía activa (trifásica con neutro)
- Instalación rápida y sencilla con tres sensores de intensidad flexibles (calibrados y acoplados de forma permanente al medidor)
- Intensidad nominal: 200, 500, 1000 o 2000 A
- Entradas de tensión nominal: 3 x 100 V L-N (173 V L-L) a 277 V L-N (480 V L-L)
- Alimentada a partir de entradas de tensión L1-N
- Montaje sobre carril DIN o superficie plana
- Comunicaciones inalámbricas
- Compatible con las pasarelas inalámbricas de las series Com'X y MPM

fr
- Précision de classe 1, énergie active (triphasé avec neutre)
- Installation facile et rapide avec 3 capteurs de courant souples (étalonnés et fixés au compteur)
- Courant nominal : 200, 500, 1000 ou 2000 A
- Tension nominale des entrées : 3 x 100 V L-N (173 V L-L) – 277 V L-N (480 V L-L)
- Alimenté par les entrées de tension L1-N
- Montage sur rail DIN ou surface plane
- Communications sans fil
- Compatible avec les passerelles sans fil Com'X et MPM

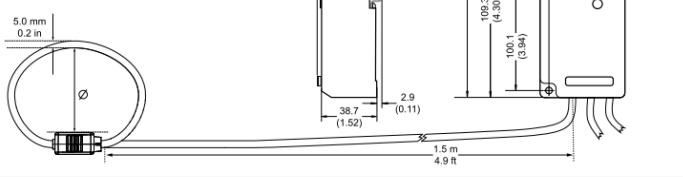
de
- Genauigkeit der Wirkenergiemessung: Klasse 1 (3-Phasen-Netz mit Neutralleiter)
- Schnelle und einfache Installation mit 3 flexiblen Stromsensoren (kalibriert und dauerhaft am Messgerät angebracht)
- Nennstrom: 200, 500, 1000 oder 2000 A
- Nennspannungseingänge: 3 x 100 V L-N (173 V L-L)...277 V L-N (480 V L-L)
- Spannungsversorgung über die L1-N-Spannungseingänge
- DIN-Schienen- oder Aufbaumontage auf ebener Oberfläche
- Drahtlose Kommunikation
- Kompatibel mit den Funk-Gateways der Reihen Com'X und MPM

it
- Precisione di classe 1, energia attiva (trifase con neutro)
- Installazione semplice e rapida con 3 sensori di corrente flessibili (calibrati e collegati in modo permanente al contatore)
- Corrente nominale: 200, 500, 1000 o 2000 A
- Ingressi tensione nominale: 3 x 100 V L-N (173 V L-L)...277 V L-N (480 V L-L)
- Alimentato da ingressi di tensione L1-N
- Montaggio su guida DIN o su superficie piana
- Comunicazioni wireless
- Compatibile con gateway wireless serie Com'X e MPM

pt
- Precisão classe 1, energia ativa (trifásico com neutro)
- Instalação fácil e rápida, com 3 sensores flexíveis de corrente (calibrados e fixados permanentemente ao medidor)
- Corrente nominal: 200, 500, 1000 ou 2000 A
- Entradas de tensão nominal: 3 x 100 V L-N (173 V L-L)...277 V L-N (480 V L-L)
- Alimentado pelas entradas de tensão L1-N
- Montagem em trilho DIN ou em superfície plana
- Comunicação sem fios
- Compatível com gateways sem fios das séries Com'X e MPM

2 Dimensions / Dimensiones / Dimensions / Abmessungen / Dimensioni / Dimensões

	Ref.	I (Amps)	Ø (mm / in)
EM4302	METSEEM4302	200	55 / 2.17
EM4305	METSEEM4305	500	55 / 2.17
EM4310	METSEEM4310	1000	125 / 4.92
EM4320	METSEEM4320	2000	125 / 4.92



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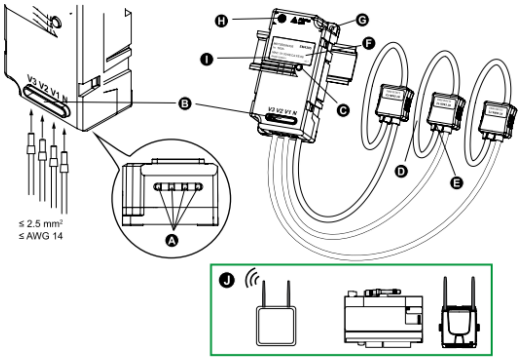
3 Description / Descripción / Description / Beschreibung / Descrizione / Descrição



en

- A Voltage inputs
- B Voltage input terminal screws
- C Status LED (red/green)
- D Flexible current sensor
- E Current sensor locking clasp
- F MAC address location
- G Mounting hole
- H Antenna location
- I Reed switch location
- J Wireless gateway / data collector

es

- A Entradas de tensión
- B Tornillos de terminal de las entradas de tensión
- C Indicador LED de estado (rojo/verde)
- D Sensor de intensidad flexible
- E Presilla de bloqueo del sensor de intensidad
- F Ubicación de la dirección MAC
- G Orificio de montaje
- H Ubicación de la antena
- I Ubicación del interruptor de láminas
- J Pasarela inalámbrica/recopilador de datos

fr

- A Entrées de tension
- B Bornes de raccordement des entrées de tension
- C Voyant d'état (rouge/vert)
- D Capteur de courant souple
- E Bride de capteur de courant
- F Emplacement de l'adresse MAC
- G Trou de montage
- H Emplacement de l'antenne
- I Emplacement de l'interrupteur à lames souples
- J Passerelle sans fil / collecteur de données

de

- A Spannungseingänge
- B Schraubklemmen am Spannungseingang
- C Status-LED (rot/grün)
- D Flexibler Stromsensor
- E Arretierklemme am Stromsensor
- F Angabe der MAC-Adresse
- G Befestigungsbohrung
- H Antenne
- I Reed-Schalter
- J Funk-Gateway/Datenerfassungsgerät

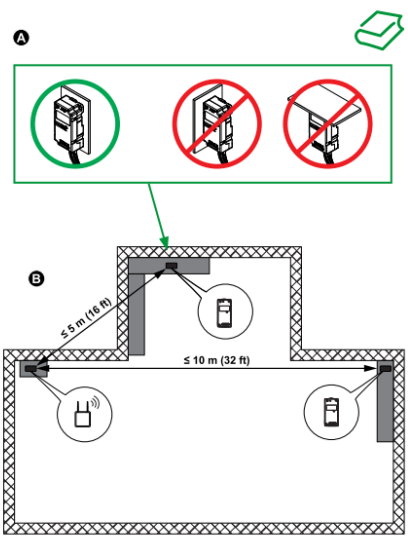
it

- A Ingressi di tensione
- B Viti terminali degli ingressi di tensione
- C LED di stato (rosso/verde)
- D Sensore di corrente flessibile
- E Fermo di chiusura sensore di corrente
- F Posizione indirizzo MAC
- G Foro di montaggio
- H Posizione antenna
- I Posizione interruttore reed
- J Gateway wireless / acquisitore dati

pt

- A Entradas de tensão
- B Parafusos dos terminais das entradas de tensão
- C LED de status (vermelho/verde)
- D Sensor flexível de corrente
- E Fecho de travamento do sensor de corrente
- F Localização do endereço MAC
- G Furo de montagem
- H Localização da antena
- I Localização do sensor Reed
- J Gateway sem fios/coletor de dados

4 Installation considerations / Consideraciones sobre la instalación / Conseils d'installation / Überlegungen zur Installation / Note sull'installazione / Considerações para instalação



en

A Layout and position of the panels in the electrical room affects the wireless range between meters and receiver. Refer to the *Schneider Electric wireless guidebook* for more information.

B Distance between wireless meter and receiver must not exceed 10 m when installed in line of sight. If there are physical barriers such as walls or panels, the distance must not exceed 5 m.

es

A La distribución y la posición de los paneles en el interior de la sala de equipos eléctricos afectan al alcance de las comunicaciones inalámbricas entre el medidor y el receptor. Consulte el manual *Schneider Electric wireless guidebook* para obtener más información.

B La distancia entre el medidor inalámbrico y el receptor no deberá superar los 10 m cuando ambos se instalen dentro del campo de visión. En caso de que existan barreras físicas como paredes o paneles, la distancia no deberá superar los 5 m.

fr

A La portée de communication sans fil entre les compteurs et le récepteur varie selon la disposition des tableaux électriques dans la salle. Reportez-vous au document *Schneider Electric wireless guidebook* pour plus d'informations.

B La distance entre le compteur sans fil et le récepteur ne doit pas dépasser 10 m en l'absence de tout obstacle. S'il y a des obstacles physiques tels que murs ou panneaux, la distance ne doit pas dépasser 5 m.

de

A Layout und Position der Schalttafeln im elektrischen Betriebsraum beeinflussen die Funkreichweite zwischen den Messgeräten und dem Empfänger. Weitere Informationen finden Sie im *Schneider Electric wireless guidebook*.

B Der Abstand zwischen dem Funkmessgerät und dem Empfänger darf bei Installation mit Sichtverbindung 10 m nicht überschreiten. Befinden sich physikalische Barrieren dazwischen, z. B. Wände oder Platten, darf der Abstand nicht größer als 5 m sein.

it

A La struttura e la posizione dei pannelli nella cabina elettrica influiscono sulla portata wireless tra contatori e ricevitore. Per ulteriori informazioni, consultare la *Schneider Electric wireless guidebook*.

B La distanza tra il contatore wireless e il ricevitore non deve essere superiore a 10 m se installati in linea visiva. Se sono presenti barriere fisiche quali pareti o pannelli, la distanza non deve essere superiore a 5 m.

pt

A O layout e a posição dos painéis na sala elétrica afetam o alcance da comunicação sem fios entre os medidores e o receptor. Consulte o *Schneider Electric wireless guidebook* para obter mais informações.

B A distância entre o medidor sem fios e o receptor não deve exceder 10 m quando instalado em linha de visada. Se houver barreiras físicas, tais como paredes ou painéis, a distância não deve exceder 5 m.

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1.2. Tested System Details

Photography of EUT

Power supply:
During all the tests, EUT is supplied by V_{nom}: 230VAC
For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply 1	☑ AC ☐ DC ☐ Battery	230VAC	-	-
Supply2	☑ AC ☐ DC ☐ Battery	3*100Vac / 3*277Vac	-	No tested

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Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply 1	AC	1	☐	☐	☑	
Supply2	AC	-	☐	☐	☐	No tested
Access1	Rogowski coil cables	1	☐	☐	☑	
Access2	Rogowski coil cables	1	☐	☐	☑	
Access3	Rogowski coil cables	1	☐	☐	☑	

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Zigbee Dongle USB	-	-	Provided by customer
Laptop	DELL LATITUDE E6430	-	-

Equipment information:

Type:	**ZIGBEE**			
Frequency band:	[2400 – 2483.5] MHz			
Sub-band REC7003:	Annex 3 (a)			
Spectrum Modulation:	☑ DSSS			
Number of Channel:	16			
Spacing channel:	5MHz			
Channel bandwidth:	2MHz			
Transmit chains:	☑ 1	☐ 2	☐ 3	☐ 4
	☑ Single antenna	☐ Symmetrical	☐ Asymmetrical	
	Gain 1: 0dBi	Gain 2: dBi	Gain 3: dBi	Gain 4: dBi
Beam forming gain:	☐ Yes: dB		☑ No	
Receiver chains	☑ 1	☐ 2	☐ 3	☐ 4
Type of equipment:	☑ Stand-alone	☐ Plug-in	☐ Combined	
Ad-Hoc mode:	☐ Yes	☑ No		
Adaptivity mode:	☐ Yes (Load Based)	☐ Off mode	☑ No	
	Clear Channel Assessment Time:		None	
	q value for Load Based Equipment:		None	
Duty cycle*:	☑ Continuous duty	☐ Intermittent duty	☐ Continuous operation	
Equipment type:	☐ Production model	☑ Prototype		

*Duty cycle maximum declared by provider is 4%.

Temperature range:	Tmin:	☐ -20°C	☐ 0°C	☑ -10°C
	Tnom:	20°C		
	Tmax:	☐ 35°C	☑ 55°C	☐ °C
Test source voltage:	☑ AC: 230 V	☐ DC:	☐ Battery: VDC / Alkaline	

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CHANNEL PLAN	
Channel	**Frequency (MHz)**
Cmin: 11	2405
12	2410
13	2415
14	2420
15	2425
16	2430
17	2435
Cmid: 18	2440
19	2445
20	2450
21	2455
22	2460
23	2465
24	2470
25	2475
Cmax: 26	2480

DATA RATE		
Data Rate (Mbps)	**Modulation Type**	**Worst Case Modulation**
0.25	O-QPSK	☑

1.1. EUT CONFIGURATION

The EUT is set in the following modes during tests with simulator / software (TestRadio_CEM / v1.4.3):
- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- The Power order sent (by Zigbee Dongle USB) for Zigbee Module is set at-9dBm.

The reception mode is activated when the EUT is power on.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart C.
Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.4. Test facility

Tests have been performed on From August 1st to 29th, 2014.

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2003 in a letter dated March 25th, 2008 (registration number 94821). This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.