



Life Energy Motion

Product Change Notification

PCN-075_2022_1-OMTM2203401

Marking change (UKCA) + Data sheets modifications + insulation test voltage change AP and APR series – **First date code**

Machida, 17th January 2023

Based on the JEDEC Standard JESD46 standard (latest release), please kindly provide your approval for below change within 30 days.

Not for publication unless permission is granted by LEM

Dear customer,

To answer to continuous market requirement for improved performances, and in a permanent effort to improve the quality of its products, LEM intends to proceed to some modification on **AP and APR series**.

Concerned products:

**AP 100 B10; AP 100 B420L; AP 200 B10; AP 200 B420L;
AP 400 B10; AP 400 B420L; AP 50 B10; AP 50 B420L;**

**APR 100 B10; APR 100 B420L; APR 200 B10; APR 200 B420L;
APR 400 B10; APR 400 B420L; APR 50 B10; APR 50 B420L;**

we confirm you that LEM is now producing the model **AP 50 B10** according to the changes explained on the next page and from the date code **422305**.

Explanation on the date code:

- “4” means the production center, here LEM in Japan (Machida)
- “22” means the year of the production, here the year 2022
- “305” means the day of the production, here the 305th day of the year 2022 (01st November 2022)





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Changes:

➤ ***Description of the technical changes:***

Change 1: Marking change: Add UKCA marking. Layout of the full marking change due to UKCA marking adding.

Change 2: Marking for the connections identifications of the secondary connector changes from label to laser marking and Input voltage marking change from "+24V" to "24VDC".

Change 3: Data sheet modifications: UKCA logo adding + additional information of conditions of use (Relative humidity, altitude, insulation...).

RMS voltage for AC insulation test 50 Hz 1 min: Change from 5 kV to 4.13 kV.

Change 4: User guide: UKCA logo adding + Mating connector torque spec change and guideline to use it.

RMS voltage for AC insulation test 50 Hz 1 min: Change from 5 kV to 4.13 kV.

Additional information of conditions of use (insulation).

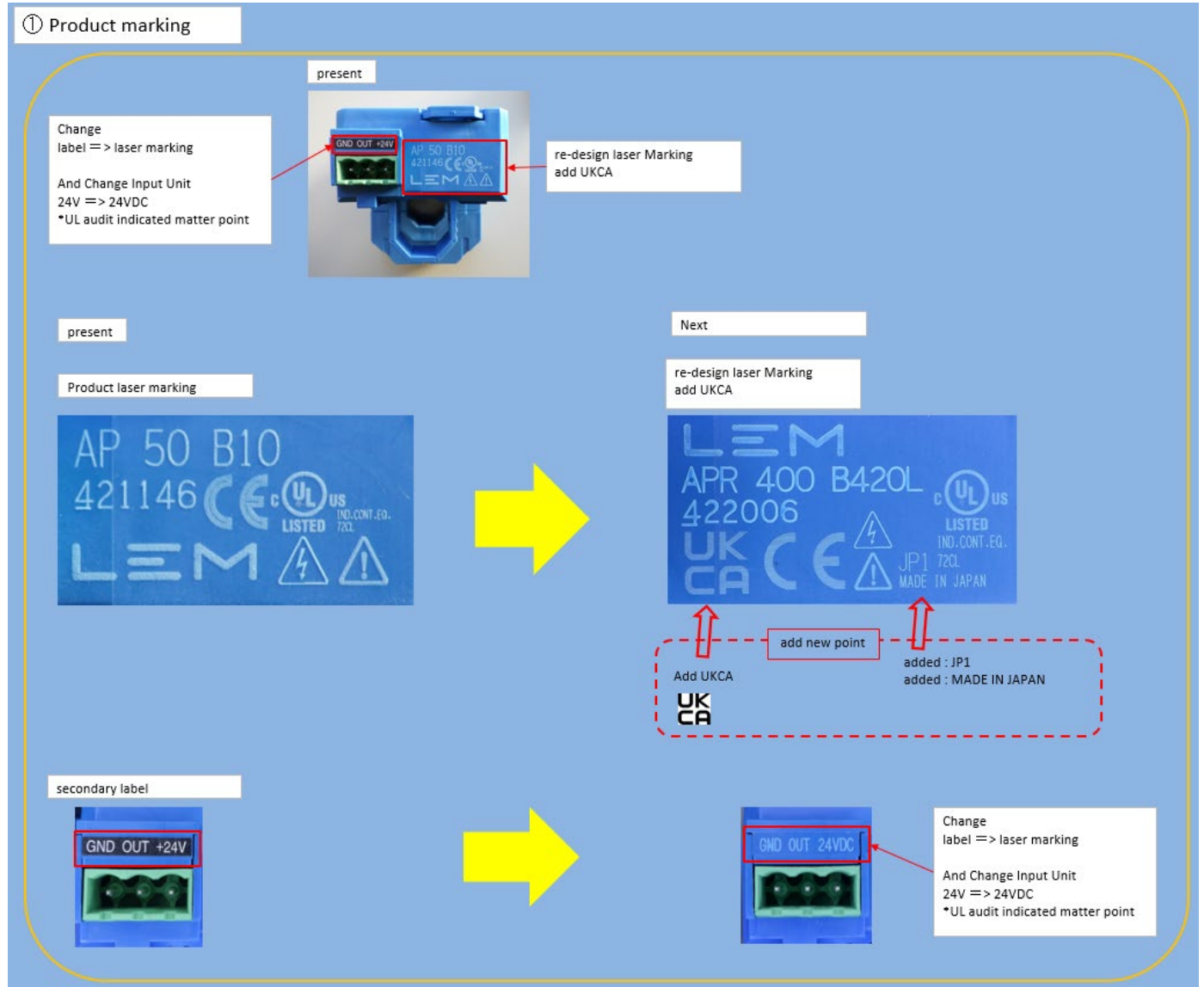
➤ ***Reasons of the technical changes:***

Changes 1 & 3 & 4: Regulation for UK for UKCA marking and customer requirement. RMS voltage for AC insulation test 50 Hz 1 min: Change from 5 kV to 4.13 kV due to UKCA and CE compliance requiring to specify the RMS voltage for AC insulation test 50 Hz 1 min when product submitted to relative humidity $\leq 85\%$ and to altitude at 2000 m. Additional information of conditions of use (Relative humidity, altitude, insulation...), mating connector guideline required by latest CE and UKCA directives.

Change 2: More sustainable marking (laser marking) and UL request.



Detailed changes as follows:



② Datasheet

Datasheet



Datasheet General data

General data		
T_a	Ambient operating temperature	-20 ... +60 °C
T_{st}	Ambient storage temperature	-20 ... +85 °C
m	Mass	90 g
IPxx	Protection degree	IP 20

Datasheet insulation spec

Insulation coordination		
U_n	Rated insulation rms voltage ¹⁾ , with IEC 61010-1 standards and following conditions: - Reinforced insulation - Over voltage category CAT III - Pollution degree PD2 - Heterogeneous field	300 V
U_a	Rms voltage for AC insulation test ²⁾ 50 Hz, 1 min	5 kV
U_p	Partial discharge extinction rms voltage @ 10 pC	1.5 kV
U_w	Impulse withstand voltage 1.2/50 μ s	6.1 kV
d_{cp}	Creepage distance	5.5 mm
d_{cs}	Clearance	5.5 mm
CTI	Comparative tracking index (Group I)	600

Notes: ¹⁾ If insulated cable is used for the primary circuit, the voltage category could be improved according to the insulation coordination given by the cable manufacturer.
For example:
Cable insulation (primary) Category
HAR 05 600 V CAT III
HAR 07 1000 V CAT III

²⁾ Between primary (completely filling the primary aperture) and secondary.

Add UKCA



Add item and comments

General data		
T_a	Ambient operating temperature	-20 ... +60 °C
T_{st}	Ambient storage temperature	-20 ... +85 °C
RH	Relative Humidity (non-condensing) ¹⁾	≤ 85 %
	Altitude above sea level (indoor use only)	2000 m
m	Mass	90 g
IPxx	Protection degree	IP 20

Note: ¹⁾ Long-term exposure to high humidity environment may affect to product reliability.

change insulation of spec and coment

Insulation coordination		
U_n	Rated insulation RMS voltage ¹⁾ , with IEC 61010-1 standards and following conditions: - Reinforced insulation - Over voltage category CAT III - Pollution degree PD2	300 V
U_a	RMS voltage for AC insulation test ²⁾ 50 Hz, 1 min	4.13 kV
U_p	Partial discharge test voltage ($q_m < 10$ pC)	1.5 kV
U_w	Impulse withstand voltage 1.2/50 μ s	6.1 kV
d_{cp}	Creepage distance	5.5 mm
d_{cs}	Clearance ¹⁾	5.5 mm
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Notes: ¹⁾ If insulated cable is used for the primary circuit, the voltage category could be improved according to the insulation coordination given by the cable manufacturer.
For example:
Cable insulation (primary) Category
HAR 05 600 V CAT III
HAR 07 1000 V CAT III

²⁾ Between primary (completely filling the primary aperture) and secondary.

¹⁾ Insulation distance between primary and secondary may be reduced at actual installation depending on type and shape of primary conductor. In such case, it is highly recommended to use insulated cable in order to maintain required insulation voltage.



③ instruction manual(user guide)

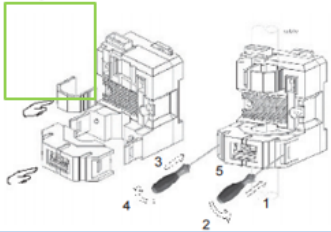
instruction manual(user guide)



userguide add connector assenbly torque spec

Mounting diagram

WARNING: Always open both side clips when removing the head of the split-core transducer. Opening only one side would cause a rotation of the head that may damage the connector. Open both clips and remove the sensor head straight from the front without rotation.

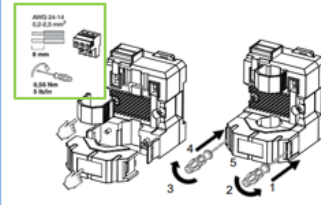


Add UKCA

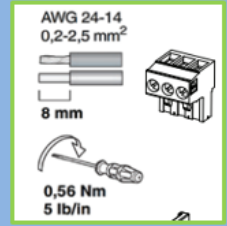


Mounting diagram

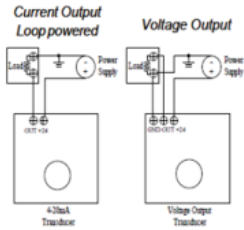
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add image

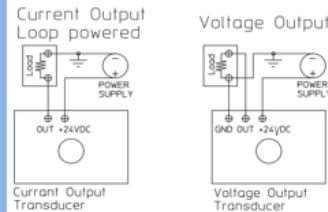


Connection diagram



Recommended fastening torque of output connection: 4.4 ... 5.3 lb/in (0.5 ... 0.6 N-m)

Connection diagram



Recommended fastening torque of output connection: 5 lb/in (0.56 N-m)

Datasheet change insulation of spec and coment

Insulation and standards

U_i Rated insulation RMS voltage, (IEC 61010-1) reinforced insulation, CAT III, PD2 300 V
If isolated cable is used for the primary circuit, the voltage category could be improved according to the following table:

Cable isolation (primary)	Category
HAR 03	300 V CAT III
HAR 05	600 V CAT III

U_a RMS voltage for AC insulation test, 50 Hz, 1 min 5 kV

IPXX Protection degree IP20

ULXX Plastic case classification UL94-V0

Insulation and standards

$U_{i, \text{ref}}$ Rated insulation RMS voltage, (IEC 61010-1) reinforced insulation, CAT III, PD2 300 V
If isolated cable is used for the primary circuit, the voltage category could be improved according to the following table:

Cable isolation (primary)	Category
HAR 03	300 V CAT III
HAR 05	600 V CAT III

Insulation distance between primary and secondary may be reduced at actual installation depending on type and shape of primary conductor.
In such case, it is highly recommended to use isolated cable in order to maintain required insulation voltage

U_a RMS voltage for AC insulation test, 1 min 4.13 kV

IPXX Protection degree IP20

ULXX Plastic case classification UL94-V0





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Impact on the product:

- On the form: YES, UKCA marking adding.
- On the fit: NO
- On the function: YES, on RMS voltage for AC insulation test 50 Hz 1 min as explained here above.
- On the reliability: NO
- On the data sheet: YES + in the user guide, as explained in this PCN letter.
- On the process: NO
- On the quality: NO

Schedule of the modification:

Start of delivery of modified product	AP 50 B10: from date code 422305 (01st November 2022)
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Sincerely yours,

Stéphane ROLLIER
Product Manager

