

INSTALLATION MANUAL

vibro-meter®

Pressure measurement chains using  
CPxxx piezoelectric pressure sensors



**This document contains important information about products that are intended for use in potentially explosive atmospheres.**

Document reference MACP/E  
Edition 15 – January 2023

## REVISION RECORD SHEET

Edition	Date of issue	Written by / modified by	Description	Signature
1	Nov 23/05	R. Arnaud	Original edition in English language: • new concept of installation manual, • new corporate identity.	RA
2	Jan 16/06	R. Arnaud	Correction on page 5-5 (Grounding of the unit)	RA
3	Mar 09/06	R. Arnaud	Addition of the ATEX certificates (translated in EN-FR-DE)	RA
4	May 02/06	R. Arnaud	Modification of the cable mounting procedures. Modification of the illustrations Fig 3.3 and 3.5	RA
5	Sep 25/08	S. Trono	Restructuring to put in line with CA-CE manual Ex certificates and wiring diagrams updated	ST
6	31.Mar.2010	Peter Ward	General revision. Ex certificates and wiring diagrams updated due to new “Ex nA” certificates for the CP10x, CP103, CP11x, CP21x, CP23x and IPC704.	PW
7	22.07.2013	Peter Ward	Added the GSI127 galvanic separation unit (5 Installing galvanic separation units) and updated the mechanical diagrams (1 Introduction to CPxxx-based pressure measurement chains) and the electrical diagrams (7 Electrical connections). Updated the Ex certificates. Clarified CP5xx mounting requirements.	PW
8	06.03.2014	Peter Ward	Clarified the permitted installation areas for the GSI122, GSI124 and GSI127. Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6. Also updated Appendix B: ATEX certifications: updated PTB 01 ATEX 1061 U, removed TÜV 03 ATEX 2153 X, and added PTB 02 ATEX 1125.	PW
9	12.09.2014	Peter Ward	Added a note to 5.3 Replacing a GSI124 galvanic separation unit with a GSI127, clarifying that cable lengths might have to be adjusted. Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6. Updated Appendix B: ATEX certifications: updated PTB 01 ATEX 1061 U, LCIE 02 ATEX 6108 X, LCIE 02 ATEX 6107 X, LCIE 02 ATEX 6236 X, LCIE 02 ATEX 6106 X, LCIE 02 ATEX 6105 X, LCIE 10 ATEX 1001 X, LCIE 10 ATEX 3039 X, LCIE 05 ATEX 6033 X and LCIE 02 ATEX 6085 X. Updated Appendix C: cCSAus certifications: updated 1202198, 1636189, 2312330, 1545315, 1699234 and 1243981, and added 70001999. Updated Appendix D: IECEx certifications: updated IECEx LCI 12 0009X, IECEx LCI 10.0007X and IECEx LCI 11.0066X. Updated Appendix E: KGS certifications: added 14-GA4BO-0134X.	PW

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10	19.02.2015	Peter Ward	<p>Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6.</p> <p>Updated Appendix A: ATEX certifications: updated LCIE 09 ATEX 1042 X, LCIE 09 ATEX 1041 X, LCIE 09 ATEX 1045 X, LCIE 09 ATEX 1040 X, LCIE 09 ATEX 1039 X and LCIE 09 ATEX 1027 X.</p> <p>Updated Appendix C: cCSAus certifications: updated 2312330.</p> <p>Updated Appendix D: IECEx certifications: added IECEx LCIE 14.0042X and IECEx LCIE 13.0053X and updated IECEx LCI 10.0014X.</p> <p>Updated Appendix E: KGS certifications: replaced 12-GA4BO-0394X with 14-GA4BO-0473X.</p> <p>Updated old Appendix E: NEPSI certifications: added GYJ14.1047X.</p>	PW
11	29.10.2018	Peter Ward	<p>Changed all Vibro-Meter® product names to not use spaces in order to be consistent with the latest product naming convention.</p> <p>Added a statement that Meggitt SA product certifications and warranties are valid only for products purchased directly from Meggitt SA or an authorised distributor (see IMPORTANT NOTICES).</p> <p>Added important safety-related information (see Hot surfaces and the risk of burning and Replacement parts and accessories).</p> <p>Removed most ABA15x industrial housing information (as no longer available – replaced by ABA17x industrial housings).</p> <p>Removed most GSI124 galvanic separation unit information (as no longer available – replaced by the GSI127 galvanic separation unit).</p> <p>Removed all CP5xx piezoelectric pressure sensor information (as no longer available – being replaced by CP7xx piezoelectric pressure sensors).</p> <p>Updated 2.2.3 Mounting procedure to include tightening torque values and information for CPxxx piezoelectric pressure sensors (see Table 2-1).</p> <p>Updated 5 Installing galvanic separation units to clarify that a GS127 should be installed vertically but can be installed right-side-up or upside-down (inverted) (see 5.2.1 Mounting procedure).</p> <p>Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-4, Figure 7-5 and Figure 7-6).</p> <p>Added information on cleaning a CPxxx-based pressure measurement chain (see 8.3 Cleaning).</p> <p>Added end-of-life product disposal information (see 9 End-of-life product disposal).</p> <p>Updated the Energy product return procedure and form to be consistent with the Meggitt Vibro-Meter® website (see 10 Service and support).</p> <p>...</p>	PW

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11 (cont.)	29.10.2018	Peter Ward	<p>...</p> <p>Updated Appendix B: ATEX certifications:            Added PTB 98 ATEX 3101 U (ABA161).            Added BVS 15 ATEX E 112 U and Presafe 14 ATEX 5378 U (ABA17x).            Removed LCIE 09 ATEX 1040 X (CP216).            Removed LCIE 10 ATEX 1001 X and LCIE 10 ATEX 3039 X (CP5xx).            Added LCIE 17 ATEX 1004 X and LCIE 17 ATEX 3003 X (CP7xx).            Removed LCIE 02 ATEX 6093 X (GSI122).            Removed LCIE 05 ATEX 6033 X (GSI124).            Updated LCIE 13 ATEX 3037 X (GSI127).            Removed PTB 02 ATEX 1125 (cable fitting/stuffing glands).            Added LCIE 02 ATEX 0038 U, LCIE 03 ATEX 0033 U, PTB 98 ATEX 3130, PTB 11 ATEX 1007 X, SIRA 10 ATEX 1224 X, SIRA 10 ATEX 1225 X, SEV 15 ATEX 0151 and SEV 15 ATEX 0152 X (cable fitting/stuffing glands).</p> <p>Updated Appendix C: cCSAus certifications:            Updated cCSAus 1202198 (CP11x).            Updated cCSAus 1636189 (CP23x).            Removed cCSAus 2312330 (CP5xx).            Added cCSAus 70124133 (CP7xx).            Removed cCSAus 1545315 (CE134 and GSI122).            Removed cCSAus 1699234 (GSI124).            Updated cCSAus 70001999 (GSI127).            Updated cCSAus 1243981 (IPC704).</p> <p>Updated Appendix D: IECEx certifications:            Added IECEx PTB 08.0003U (ABA160, JB116 and JB118).            Added IECEx PTB 08.0005U (ABA161).            Added IECEx BVS 16.0026U and IECEx PRE 14.0042U (ABA17x).            Removed IECEx LCI 10.0014X (CP216).            Removed IECEx LCI 10.0007X and IECEx LCI 11.0066X (CP5xx).            Added IECEx LCIE 16.0054X (CP7xx).            Removed IECEx LCI 06.0010X (GSI124).            Updated IECEx LCIE 13.0026X (GSI127).            Added IECEx LCI 10.0009U, IECEx PTB 03.0000, IECEx PTB 11.0019X, IECEx SEV 15.0018, IECEx SEV 15.0019 X, IECEx SIR 07.0009X and IECEx SIR 07.0010X (cable fitting/stuffing glands).</p> <p>Updated Appendix E: KGS certifications:            Added KGS 17-GA4BO-0552X (CP21x).            Removed KGS 14-GA4BO-0134X (CP5xx).            Added KGS 17-GA4BO-0325X (GSI127).            Removed old Appendix E: NEPSI certifications:            Removed NEPSI GYJ12.1449X (CP23x).            Removed NEPSI GYJ14.1047X (CP502 and CP505).            Removed NEPSI GYJ12.1451X (GSI124).            Removed NEPSI GYJ12.1450X (IPC704).            ...</p>	PW

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11 (cont.)	29.10.2018	Peter Ward	<p>...</p> <p>Updated new Appendix F: TIIS certifications:            Removed TIIS TC18375 (CP103).            Added TIIS TC20980 (CP103).            Added TIIS TC20981 (CP103).            Added TIIS TC20431 (CP237).            Added TIIS TC20448 (CP515).            Added TIIS TC21012 (CP515).</p> <p>Added Appendix H: EA9C RU certifications:            Added TC RU C-CH.MW06.B.00134 (ABA160, CP10x, CP11x, CP21x, CP23x, GSI12x, IPC704 and JB11x).</p>	PW
12	26.03.2019	Peter Ward	<p>Added the ABA17x industrial housings (see 1.2.7 ABA17x and ABA160 industrial housings, 4 Installing junction boxes, industrial housings and signal conditioners).</p> <p>Added the IPC707 signal conditioner (see Equipment installed in potentially explosive atmospheres, 1.2.5 IPC707 signal conditioner, 4 Installing junction boxes, industrial housings and signal conditioners), a reference to the <i>IPC707 signal conditioner safety manual</i> (see Related documentation and publications) and information on configuring an external monitoring and/or protection system for operation with an IPC707 (see 6 Configuring an external monitoring system). Also updated the mechanical diagrams (see 1 Introduction to CPxxx-based pressure measurement chains) and the electrical diagrams (see 7 Electrical connections) accordingly.</p> <p>Updated Appendix B: ATEX certifications:            Added LCIE 18 ATEX 3026 X and LCIE 18 ATEX 1012 X (IPC707).</p> <p>Updated Appendix C: cCSAus certifications:            Added cCSAus 70198728 (IPC707).</p> <p>Updated Appendix D: IECEx certifications:            Added IECEx LCIE 18.0023X (IPC707).</p> <p>Updated Appendix E: KGS certifications:            Added KGS 18-GA4BO-0548X and KGS 18-GA4BO-0549X (IPC707).</p> <p>Updated Appendix F: TIIS certifications:            Removed TIIS TC20448 and TIIS TC21012 (CP515).</p>	PW
13	18.11.2019	Peter Ward	<p>Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-1, Figure 7-2 and Figure 7-3).</p> <p>Updated Appendix F: TIIS certifications:            Updated TIIS TC20431 (CP237).</p> <p>Updated to use the latest Meggitt brand identity.</p>	PW

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14	10.05.2022	Peter Ward	<p>Added 3.2.2 Soft-line “low-noise” cable minimum bend radius to provide information on the minimum bend radius for cables with flexible stainless-steel protection tubes.</p> <p>Updated 4.4.2.1 Grounding to remove any specific recommendations as operation of an IPC707 signal conditioner either with or without a direct electrical connection to ground (GND) results in equivalent electromagnetic (EMC) performance.</p> <p>Updated Figure 4-5 to use the latest IPC707 signal conditioner and MA130 DIN-rail mounting adaptor drawing.</p> <p>Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-1, Figure 7-2 and Figure 7-3).</p> <p>Updated the Energy product return procedure and form to be consistent with the Meggitt vibro-meter® Energy website (see 10 Service and support).</p> <p>Added new Appendix A: Tightening torque values for cable fittings in order to provide the recommended tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings.</p> <p>Updated Appendix B: ATEX certifications:            Added ITS 16 ATEX 101335 X and ITS 16 ATEX 101336 X (cable fittings / stuffing glands).            Updated PTB 01 ATEX 1061 U (ABA160, JB116 and JB118) and PTB 98 ATEX 3101 U (ABA161).            Updated LCIE 18 ATEX 1012 X and LCIE 18 ATEX 3026 X (IPC707).            Updated SEV 15 ATEX 0151 and SEV 15 ATEX 0152 X (cable fittings / stuffing glands).            Removed LCIE 02 ATEX 6085 X and LCIE 09 ATEX 1027 X (IPC704).            Removed SIRA 10 ATEX 1224 X and SIRA 10 ATEX 1225 X (cable fittings / stuffing glands).</p> <p>Updated Appendix C: cCSAus certifications:            Removed cCSAus 1243981 (IPC704).</p> <p>Updated Appendix D: IECEx certifications:            Added IECEx ITS 16.0011X and IECEx ITS 16.0012X (cable fittings / stuffing glands).            Updated IECEx PTB 08.0003U (ABA160, JB116 and JB118) and IECEx PTB 08.0005U (ABA161).            Updated IECEx BVS 16.0026U (ABA17x).            Updated IECEx LCIE 18.0023X (IPC707).            Updated IECEx PTB 11.0019X, IECEx SEV 15.0018 and IECEx SEV 15.0019X (cable fittings / stuffing glands).            Removed IECEx LCI 06.0009X and IECEx LCIE 13.0053X (IPC704).            Removed IECEx SIR 07.0009X and IECEx SIR 07.0010X (cable fittings / stuffing glands).</p> <p>Updated Appendix E: KGS certifications:            Removed KGS 12-GA4BO-0396X (IPC704).</p> <p>Added Appendix G: UK certifications:            Added CML 21 UKEX 2540 X and CML 21 UKEX 4541 X (CE134).            Added CML 21 UKEX 4542 X (GS1127).            Added CML 21 UKEX 2543 X and CML 21 UKEX 4544 X (IPC707).</p> <p>...</p>	PW

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14 (cont.)	10.05.2022	Peter Ward	... Updated Appendix H: EAЭC RU certifications: Added EAЭC RU C-CH.AД07.B.02998/21 (ABA17x). Added EAЭC RU C-CH.AД07.B.03025/21 (CP103, CP21x, CP23x and CP7xx). Added EAЭC RU C-CH.AД07.B.03008/21 (GSI127). Added EAЭC RU C-CH.AД07.B.00357/20 (IPC707). Removed TC RU C-CH.MШ06.B.00134 (ABA160, CP10x, CP11x, CP21x, CP23x, GSI12x, IPC704 and JB11x).	PW
15	16.01.2023	Peter Ward	Updated Appendix F: TIIS certifications: Updated TIIS TC 20431 (CP237). Updated Appendix H: EAЭC RU certifications: Added EAЭC RU C-CH.AД07.B.04681/22 (IPC707). Removed EAЭC RU C-CH.AД07.B.00357/20 (IPC707). Added Appendix I: CNEx / CCC Ex certifications: Added CNEx 21.2783X (CP23x). Added CCC Ex 2022312310000425 (IPC707). Updated CCC Ex 2022312310000425 (IPC707).	PW

	Department	Name	Signature	Date
Technical content approved by	ATEX Manager	Pascal Kornatko	PK	12.01.2023
	Engineering (Electronics)	Hans-Peter Aeby	H-PA	16.01.2023
	Product Line Management	Frédéric Micco	FM	16.01.2023
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