

# 1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No: FM13ATEX0016X**

4 **Equipment or protective system: Electronic Digital Meters, Models 03, 04, 05, 06, 07, 08 09, A1, A2, G2 and N2.**  
(Type Reference and Name)

5 **Name of Applicant: Great Plains Industries, Inc**

6 **Address of Applicant: 5252 East 36th Street North,  
Wichita, KS 67220  
United States of America**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26<sup>th</sup> February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3045394 dated 14<sup>th</sup> June 2013

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012 and EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 1 G Ex ia IIC T4 Ga Ta = -40°C to 54°C

*Damien McArdle*

**Damien Mc Ardle**  
**Certification Manager, FM Approvals Europe Ltd**

Issue date: 04<sup>th</sup> November 2020

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F ATEX 020 (Mar/2019)

Page 1 of 4

# SCHEDULE



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to EU-Type Examination Certificate No. FM13ATEX0016X

## 13 Description of Equipment or Protective System:

The Electronic Digital Meters, models 03, 04, 05, 06, 07, 08 09, A1, A2, G2 and N2 are battery powered turbine flow meters. The meters contain a turbine assembly, microprocessor and LCD readout and are designed for measuring batch or cumulative quantities of liquids including fuels. Each turbine assembly is contained in a housing made of brass, aluminium, stainless steel, nylon or PVDF plastic. The plastic versions are carbon-filled and electrically conductive. Process pressure rating varies depending on the enclosure material and construction. The display cover assembly is clear plastic and all of the electronics except for the batteries and the LCD display are completely encapsulated (the Q1, Q9 and R9 versions are conformal coated). A remote kit option is also available that permits the electronics assembly to be mounted up to 100 feet (30 meters) from the turbine assembly.

The ambient operating temperature range of Electronic Digital Meters are -40°C to 54°C. The apparatus is powered by two FDK Lithium CR12600SE 3V (GPI battery 902004-02), the Q1, Q9 and R9 versions use Energizer E92 / EN92or Duracell MN2400 Alkaline batteries connected in series. There are no other terminals for customer connection. The Q1, Q9, and R9 versions have one terminal connection for a coil.

The enclosure has an ingress protection rating of IP65.

### Model abcdefg. Electronic Digital Meter.

a = Product Identifier A1 or A2.

b = Computer Assembly 01, 02, 03, 04, 05, 06, 07, 08, 09, Q9, R9 or XX.

c = Factory Calibration G, L, Q, Z, P, B, U, M, F, I, J, O or X.

d = Time Base M, S, H, D or X.

e = Turbine Housing A025, A050, A075, A100, A150, A200, B050, B075, B100, B150, B200, N025, N100, P050, P100, S025, S050, S075, S100, S150, S200, V025, V100, X025, X050, X075, X100, X150, X200, Z050, Z100, XXXX or 0000.

f = Fitting N, I, B, T, F, X or 0.

g = Packaging A1, A2, B1, B2, B3, C1, C2, C3, C4, D1, D2, J1, J2, K1, K2, K3, K4, K5, L1, L2, L3, L4, L5, XX or 00.

### Model abcdefgh. Electronic Digital Meter.

a = Product Identifier: G2 or N2.

b = Turbine Body Material: A, B, P, S, X or Z.

c = Turbine Size: 05, 07, 10, 15, or 20.

d = Fitting Type: N, I, X, T or F.

e = Computer Assembly: 03, 04, 05, 06, 07, 08, 09, 19, Q1, Q9, R9 or XX.

f = Factory Calibration: G, L, Q, Z, P, B, U, M, F, I, J, O or X.

g = Time Base M, S, H, D or X.

h = Packaging kit: A, B, C, D or E

### Model abcd. Electronic Digital Meter.

a = Computer Assembly 03, 04, 05, 06, 07, 08 or 09.

b = Housing/Turbine Assembly A, N or S.

c = Flow Range 11, 12, 13, 30, 31, or 32.

d = Factory Cal. Units GM, LM or GMME

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to EU-Type Examination Certificate No. FM13ATEX0016X

## 14 Specific Conditions of Use:

1. All computer assemblies are to be used with GPI battery 902004-02 except Q1, Q9 and R9 versions which use Energizer E92 / EN92 or Duracell MN2400 Alkaline batteries.
2. GPI remote kit assembly 113275-1 may be used with the meter when installed in accordance with GPI Manual No. 920507-01. GPI Remote Kit Assembly 113275-10 may be used with the meter when installed in accordance with GPI Manual No. 920507-02.
3. The apparatus enclosure may contain aluminum which is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.
4. Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should only be cleaned with a damp cloth.

## 15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

## 16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

## 17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

## 18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
04 <sup>th</sup> July 2013	Original Issue.
18 <sup>th</sup> September 2013	<u>Supplement 1:</u> Report Reference: – 3045394REV130708 dated 30 <sup>th</sup> August 2013. Description of the Change: Updated ATEX Guide to include a copy of the Declaration of Conformity and Statement of Compliance.
01 <sup>st</sup> June 2016	<u>Supplement 2:</u> Report Reference: RR204786 dated 10 <sup>th</sup> May 2016. Description of the Change: Updated to EU certificate. Changes to controlled documents. Revisions "O", "I" "S" and "Q" are not an option in their model code structure. Document 125030-1 revision "A" jumps to rev "C". 125030-1 rev "B" changes are approved as well as "C"

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Date	Description
31 <sup>st</sup> October 2016	<u>Supplement 3:</u> Report Reference: Project ID 3059125 dated 25 <sup>th</sup> October 2016. Description of the Change: Changed to taller threads and end fittings for process sealing. Documents updated.
29 <sup>th</sup> August 2017	<u>Supplement 4:</u> Report Reference: Project ID RR210552 dated 28 <sup>th</sup> August 2017. Description of the Change: Minor changes to dimensions of housing, adhesive and edit to manual. Documents updated.
21 <sup>st</sup> November 2018	<u>Supplement 5:</u> Report Reference: RR216090 dated 20 <sup>th</sup> November 2018. Description of the Change: Minor documentation updates related to housing dimensions and secondary decal documents.
14 <sup>th</sup> January 2019	<u>Supplement 6:</u> Report Reference: RR216812 dated 07 <sup>th</sup> January 2019. Description of the Change: Minor documentation updates.
17 <sup>th</sup> April 2019	<u>Supplement 7:</u> Report Reference: RR218240 dated 27 <sup>th</sup> March 2019. Description of the Change: Update to marking plate and manual to reflect change to Notified Body number. Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.
31 <sup>st</sup> January 2020	<u>Supplement 8:</u> Report Reference: RR221853 dated 30 <sup>th</sup> January 2020. Description of the Change: Added a feature to the turbine housings which will allow a mount for future options: Addition of 1 new drawing and revisions to 21 drawings.
04 <sup>th</sup> November 2020	<u>Supplement 9:</u> Report Reference: PR457103 dated 3 <sup>rd</sup> November 2020.. Description of the Change: Updated for new computer display assemblies Q1, Q9 and R9. Relocated the rotation sensing coil. Updated standard to EN IEC 60079-0:2018. Updated Specific Conditions of Use. Changed to T4, Ta=54°C

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# Blueprint Report

**Great Plains Industries Inc (1000002150)**

**Class No 3610**

**Original Project I.D. 3045394**

**Certificate I.D. FM13ATEX0016X**

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
113044	AB	HOUSING TURBINE (2')	3045394
113071	J	PROBE	3045394
113086	F	COIL	3045394
113136	AY	PACKAGING/ASSEMBLY 1-50 GPM	457103
113137	AU	PACKAGING/ASSEMBLY 30-300 GPM	457103
113138	U	Assembly Computer (GPI-9)	3045394
113139	J	ASSEMBLY LO-FLO TURBINE	RR221853
113140	R	ASSY, TURBINE 1"	RR221853
113141-1	R	ASSEMBLY, 2 " TURBINE(ALUM/NPT)	457103
113141-3	R	ASSEMBLY, 2 " TURBINE(ALUM/ISO)	457103
113141-5	R	ASSEMBLY, 2 " TURBINE(ALUM/BSPP)	457103
113142-11	C	Assembly, 03A, 1" Turbine, ENP	RR221853
113142	T	ASSEMBLY, 1 " TURBINE	RR221853
113145-05	-	Decal, Battery Warning	457103
113145	B	Decal, Battery Warning	3045394
113147-11	H	CASTING, HOUSING, TURBINE	RR221853
113147	E	HOUSING, TURBINE	RR221853
113148-01	E	Decal, ATEX	457103
113148-02	B	Decal, ATEX (Remote)	457103
113160-01	B	HOUSING, TURBINE ALUM.A1 2"NPT	RR204786
113160-02	B	HOUSING, TURBINE ALUM.A1 2"ISO	RR204786
113160-03	B	HOUSING, TURBINE ALUM.A1 2"BSPP	RR204786
11318101	D	Assembly Circuit (GPI-9)	RR204786
11318201	J	Assembly PCB. (GPI-9)	RR204786
11318301	E	Printed Circuit Board (GPI-9)	3045394
11318401	D	GPI-9 Schematic Diagram	3045394
113209	D	RETAINER	3045394
113211	L	HOUSING INNER	3045394
113230	G	HOUSING COMPUTER	3045394
113260	K	DUST COVER	457103
113264-20	-	DUST COVER ASSEMBLY	457103
113264	G	DUST COVER ASSEMBLY	3045394
113273-10	-	SENSOR MODULE ASSY	457103
113273	D	SENSOR MODULE ASSY	3045394
113275-10	-	ASSEMBLY, REMOTE KIT	457103
113275	F	ASSEMBLY, REMOTE KIT	3045394
113301	T	Housing Turbine (1" Plastic)	RR221853
113310-5	M	DECAL	3045394
113318-1	C	Decal, Caution, EDM Inst.	3045394
113409-12	N	Cover Casting	3045394
113409-13	P	Cover, Casting	3045394
113409-4	P	Cover, Machined_	3045394
113409-5	P	_Cover, Machined	3045394
113700-01	D	Meter, 03A31GM-Methanol	457103
113710-01	B	Housing, Turbine, 1" NPT, ENP	RR221853
125003	L	ASSEMBLY, TURBINE	457103
125004	AH	PACKAGING, ASSEMBLY INDUSTRIAL	457103
125005	M	ASSEMBLY, TURBINE	457103

125010-11	V	HOUSING, TURBINE (1/2") CASTING	457103
125010-1	T	HOUSING, TURBINE (1/2") NPT	457103
125010-2	T	HOUSING, TURBINE (1/2") ISO	457103
125020-11	T	HOUSING TURBINE (3/4") CASTING	457103
125020-1	P	HOUSING TURBINE (3/4") NPT	457103
125020-2	P	HOUSING TURBINE (3/4") ISO	457103
125020	M	HOUSING TURBINE (3/4")	RR204786
125021	AG	LABEL, PRINTED	457103
125030-11	R	Housing, TURBINE (1") CASTING	457103
125030-1	R	Housing, TURBINE (1") NPT	457103
125030-2	R	Housing Turbine (1") ISO	457103
125040-11	V	ASSEMBLY, TURBINE (1 1/2") CASTING	457103
125040-1	T	ASSEMBLY, TURBINE (1 1/2") NPT	457103
125040-2	T	ASSEMBLY, TURBINE (1 1/2") ISO	457103
125050-11	V	ASSEMBLY, TURBINE (2") CASTING	457103
125050-1	T	ASSEMBLY, TURBINE (2") NPT	457103
125050-2	T	ASSEMBLY, TURBINE (2") ISO	457103
125085-01	C	ASSEMBLY, COIL	457103
125086-01	C	ASSEMBLY, COIL	457103
125088-01	-	PRINTED CIRCUIT BOARD (MODULES)	457103
125160-01	A	RISER,MACHINED (CLOSED)	457103
125160-11	A	RISER (CLOSED)	457103
125208-01 thru -9	U	PACKAGING, ASSEMBLY INDUSTRIAL	RR221853
125210-1	G	HOUSING, TURBINE (1/2-INCH PIT)	RR221853
1252181	E	ASSEMBLY, Turbine (1/2" P.I.T.)	RR221853
1252182	E	ASSEMBLY, Turbine (1/2" P.I.T.)	RR221853
1252183	E	ASSEMBLY, Turbine (1/2" P.I.T.)	RR221853
1252184	E	ASSEMBLY, Turbine (1/2" P.I.T.)	RR221853
1252301	H	HOUSING, PIT 1" TURBINE	RR221853
1252381	G	ASSEMBLY TURBINE (1" PIT), NPT	RR221853
1252382	G	ASSEMBLY TURBINE (1" PIT), ISO	RR221853
1252383	G	ASSEMBLY TURBINE (1" PIT), NPT (NO COVERPLATE)	RR221853
1252384	G	ASSEMBLY TURBINE (1" PIT), ISO (NO COVERPLATE)	RR221853
125261-01	B	Adapter 90 Deg display	3045394
125410-01	C	Housing, Aluminum 1/2", NPT	3045394
125410-02	C	Housing, Aluminum 1/2", ISO	3045394
125410-11	B	Housing, Aluminum 1/2" (Casting)	3045394
125412-01	D	HOUSING_TURBINE (1/2"NPT/ALUM)	457103
125412-02	D	HOUSING_TURBINE (1/2"ISO/ALUM)	457103
125422-01	D	HOUSING_TURBINE (3/4"NPT/ALUM)	457103
125422-02	D	HOUSING_TURBINE (3/4"ISO/ALUM)	457103
125432-01	C	HOUSING_TURBINE (1"NPT/ALUM)	457103
125432-02	C	HOUSING_TURBINE (1"ISO/ALUM)	457103
125440-01	E	Housing, Aluminum 1 1/2", From bar stock NPT	457103
125440-02	E	Housing, Aluminum 1 1/2", From bar stock ISO	457103
125450-01	D	Housing, Aluminum 2", From bar stock NPT	457103
125450-02	C	Housing, Aluminum 2", From bar stock ISO	457103
125460	M	Packaging/Assembly (Aluminum & Brass)	457103
125604-01	F	ASSY, HOUSING 1" FLANGED	457103
125605-01	F	ASSY, HOUSING 1 1/2" FLANGED	457103
125606-01	F	ASSY, HOUSING 2" FLANGED	457103
125607-01	B	HOUSING, FLANGED, 1"	457103
125608-01	B	HOUSING, FLANGED, 1 1/2"	457103
125609-01	B	HOUSING, FLANGED, 2"	457103
125610	M	PACKAGING/ASSEMBLY (SANITARY)	457103
125614-01	D	HSG, 1/2" METER, 3/4" SANITARY FLNG	457103

125614-11	B	HSG, 1/2" METER, 3/4" SANI FLNG (CAST)	457103
125615-01	D	HSG, 3/4" METER, 1" SANITARY FLNG	457103
125615-11	B	HSG, 3/4" METER, 1" SANI FLNG (CAST)	457103
125616-01	D	HSG, 1" METER, 1 1/2" SANITARY FLNG	457103
125616-11	B	HSG, 1" METER, 1 1/2" SANI FLNG (CAST)	457103
125617-01	D	*HSG, 1 1/2" METER, 2" SANITARY FLNG	457103
125617-11	B	*HSG, 1 1/2" METER, 2" SANI FLNG (CAST)	457103
125618-01	D	*HSG, 1 1/2" METER, 2" SANI FLNG (CAST)	457103
125618-11	B	*HSG, 2" METER, 2 1/2" SANI FLNG (CAST)	457103
125629	M	PACKAGING/ASSEMBLY (FLANGED)	457103
145172-11	D	HOUSING, COMPUTER (Q9)	457103
145178-03	-	DECAL, FACE, 2-B Q9 (FLOMEC)	457103
145178-04	-	DECAL, FACE, 2-B Q9, SM WIND (GPI)	457103
145179-02	A	SCHEMATIC, PCB (Q9)	457103
145179-03	A	ASSEMBLY, PCB (Q9)	457103
145179-04	A	PRINTED CIRCUIT BOARD (Q9)	457103
145179-05	A	ASSEMBLY, CIRCUIT (Q9)	457103
145195-01	A	ASSEMBLY, COMPUTER, 2-B (Q9)	457103
902004-33	B	Battery 1.5V/ALKALINE (AAA SIZE)	457103
9020042	C	Battery	3045394
920507-01	C	ATEX Guide	3045394
920507-02	-	ATEX Guide	457103