



EC-Type Examination Certificate

(1)

(2)

Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

(3) EC-Type Examination Certificate Number:

FTZÚ 09 ATEX 0178X

(4) Equipment or protective system: **Intrinsically Safe Bi-directional Signal Transmitter
type APS24Ex and an R24 terminator**

(5) Manufacturer: **MM Group, s.r.o.**

(6) Address: **Veveří 20/1378, 735 64 Havířov – Prostřední Suchá, Czech Republic**

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

(8) The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

09/0178 dated 12. 08. 2009

(9) Compliance with Essential Health and safety requirements has been assured by compliance with:

EN 60079-0 : 2006; EN 60079-11 : 2007; EN 50303 : 2000

(10) If the sign „X“ is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. 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 following:

 **I M1 Ex ia I**

This EC-Type Examination Certificate is valid till:

24. 08. 2014

Responsible person:

Date of issue: 24.08.2009


Dipl. Ing. Šindler Jaroslav
Head of certification body



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**Physical Technical Testing Institute
Ostrava-Radvanice**

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 09 ATEX 0178X**

(15) Description of Equipment or Protective System:

The APS24Ex transmitter is designed to collect data (both analogy and binary electric signals) from devices located in a hazardous area and to transmit them into other intrinsically safe circuits. The device as well enables sending of commands into actuators located in the hazardous area. The APS24Ex transmitter is powered from an intrinsically safe power supply. The connection to the associated apparatus is made via a bus CAN, 485 or another by means of the separators MM5060..., MM5061... with galvanic separation of input and output circuits.

The apparatus comprises one printed circuits board housed in a stainless steel enclosure which affords it a degree of protection IP54.

External connection is made via plugs and sockets.

The APS24Ex transmitters can be connected in parallel, non-connected pins X1 and X2 are terminated by the R24 terminator.

Input/output parameters:

Connectors X1 and X2, supply and bus CAN, 485 or other

PIN	INPUTS				OUTPUTS				
	U _i	P _i	C _i	L _i	U _o	I _o	P _o	C _o	L _o
2 - 1	13,2 V	-	0,7 uF	0 mH	13,2 V	*	-	**	*
3 - 4	13,2 V	1,4 W	0,7 uF	0 mH	13,2 V	*	0,552 W	**	*

* - values I_o and L_o are identical to values prescribe for used supply source
 ** - permitted value C_o for this circuit depends on C_o permitted for supply source connected to connectors X1, X2 (PIN 1 and PIN 2) and is equal to value C_o of supply source decreased by 0,7 uF.

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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 09 ATEX 0178X**

(15) Description of Equipment or Protective System:

Connectors X3 to X8, supply output and signal inputs

PIN	INPUTS				OUTPUTS				
	U _i	P _i	C _i	L _i	U _o	I _o	P _o	C _o	L _o
2 - 1	-	-	-	-	13,2 V	*	-	**	*
2 - 7	-	-	-	-	13,2 V	*	-	**	*
2 - 3	13,2 V	3,0 W	0	0	13,2 V	*	-	**	*
2 - 4	13,2 V	-	0	0	13,2 V	13,9 mA	46 mW	25 uF	10 mH
2 - 5	13,2 V	-	0	0	13,2 V	0,107 mA	0,36 mW	25 uF	10 mH
2 - 6	13,2 V	-	0	0	13,2 V	70 mA	231 mW	25 uF	10 mH

* - values I_o and L_o are identical to values prescribe for used supply source
** - permitted value C_o for this circuit depends on C_o permitted for supply source connected to connectors X1, X2 (PIN 1 and PIN 2) and is equal to value C_o of supply source decreased by 0,7 uF.

Ambient temperature: T_a = -20°C to +80°C

(16) Report No.: 09/0178

(17) Special conditions for safe use:

The cable for external circuit connections must be of type which complies with requirement of clause 4.8.4.1 of EN 50303:2000.

(18) Essential Health and Safety Requirements:

Essential health and safety requirements of Directive 94/9/EC are covered by standards mentioned in (9), according which the product was verified and in the manufacturer's instruction for use.

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**Physical Technical Testing Institute
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(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 09 ATEX 0178X**

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List of documentation:

<i>Documentations:</i>	<i>Date:</i>
• Technical condition, description (7 pages)	18.06.2009
• Ex assessment (drawings MM APS24Ex 00-00-16, -17, -18, -19)	18.06.2009
• Drawings No.:	
MM APS24Ex 00-00-01	18.06.2009
MM APS24Ex 00-00-01A	18.06.2009
MM APS24Ex 00-00-01B	18.06.2009
MM APS24Ex 00-00-02	18.06.2009
MM APS24Ex 00-00-03	18.06.2009
MM APS24Ex 00-00-04	18.06.2009
MM APS24Ex 00-00-05	18.06.2009
MM APS24Ex 00-00-06	18.06.2009
MM APS24Ex 00-00-07	18.06.2009
MM APS24Ex 00-00-08	18.06.2009
MM APS24Ex 00-00-09	18.06.2009
MM APS24Ex 00-00-10	18.06.2009
MM APS24Ex 00-00-11	18.06.2009
MM APS24Ex 00-00-12	18.06.2009
MM APS24Ex 00-00-13	18.06.2009
MM APS24Ex 00-00-14	18.06.2009
MM APS24Ex 00-00-15	18.06.2009
MM APS24Ex 00-00-16	18.06.2009
MM APS24Ex 00-00-17	18.06.2009
MM APS24Ex 00-00-18	18.06.2009
MM APS24Ex 00-00-19	18.06.2009
MM APS24Ex 00-00-20	18.06.2009
MM APS24Ex 00-00-21	18.06.2009

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