

MDG-0X Dose Rate Meters



MDG-0X Dose rate meters are suitable for measuring gamma dose rate or dose equivalent from very low levels corresponding to natural background up to units of Gy/h or Sv/h. They can be used as area gamma monitors with local or remote indication in host systems.

Purpose

MDG-0X meters are intended for the measurement of dose rate in a range from very low levels corresponding to natural background up to the units of Gy/h or Sv/h.

They can be used as a part of a large monitoring system with remote centralized indication, or in connection with the local display unit as an autonomous monitor, which provides the data indication locally at the place of measurement.

For various possibilities see the figure on next page.

The MDG-0X meter's communication interface and protocol can be customized to specific applications and customers' needs.

Description

The MDG-0X dose rate meters are equipped with one or two GM tubes and a microprocessor controller with auxiliary circuitry, and all elements are encapsulated in a waterproof cylindrical case.

The signals coming from the detector are processed in the controller, converted to measured value and compared with two programmable alarm levels. The values measured and the status of the meter is transferred via a standard RS-485 interface into the host system or to a local display unit. Exceeding of the alarm levels is signalized.

An alarm slave unit can be connected to the MDG-0X dose rate meter through potential-free switching contacts or the RS-485 interface.

Main Advantages

- Variety of measurement ranges available for different applications
- Use in indoor and outdoor locations

- Two programmable alarm levels
- Possibility of direct alarm slave unit connection and direct connection to host system (see diagram)
- Local cyclic memory (optional)
- Possibility of various outputs (RS-485, RS-232, pulse rate...)

Standards and Certification

The MDG-0X meters has the following type approvals and certifications:

▪ Radiation Protection Instrumentation

IEC 60532: Installed dose rate meters, warning assemblies and monitors – X and gamma radiation; type approved in European Union by the Czech Metrological Institute (ČMI).

▪ Electromagnetic compatibility (EMC)

ČSN EN 55022, ČSN EN 61000-6-2, ČSN EN 61326-1

Optional accessories

- Holder for mounting of the MDG-0X unit to wall or other support.
- External check source for periodic checks of the response. Check source holder to keep the defined position between the source and detector is also available.
- Internal check source for periodic checks of the response (controlled from local display unit or host system). Enables automatic periodic checks with the archiving and reporting of results.
- The data collected can also be stored in the meter's local cyclic memory (FIFO).
- Special internal module generating output pulses compatible with SEJVAL (AKRB-3) Radiation monitoring system

Possible applications



ASU Alarm slave unit



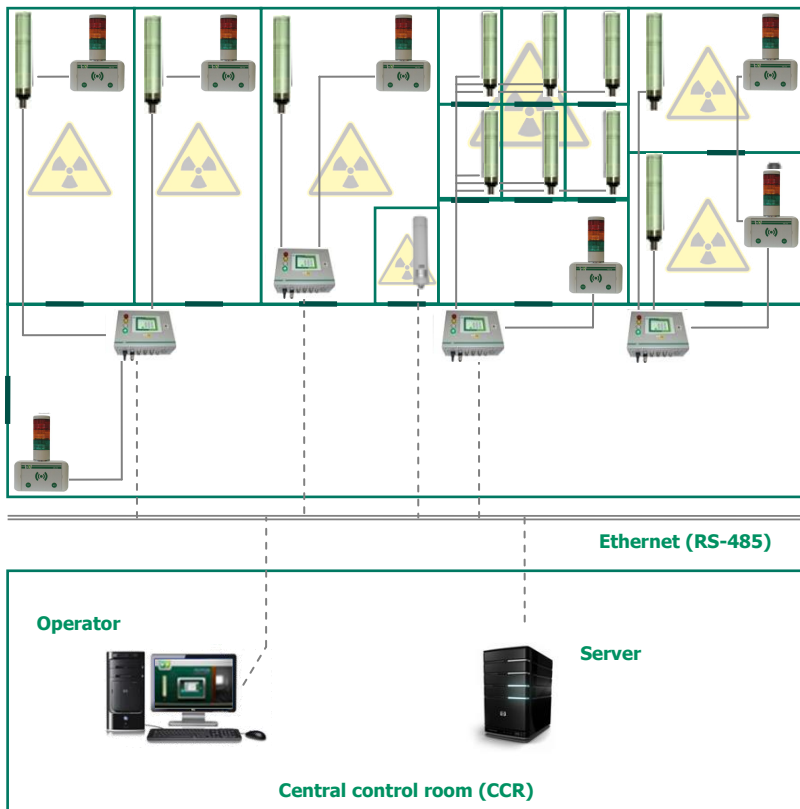
LZJ Local display unit



MDG dose rate meter



Controlled area



Operational conditions

The MDG-0X dose rate meters are resistant to harsh weather conditions. They should be protected against the aggressive corrosive environment (i.e. acids, organic solvents, etc.).

Following parameters are valid for all types of MDG-0X dose rate meters.

Operational temperature	-25 ~ +50 °C
	-13 ~ +122 °F

Operational relative humidity (non-cond.)	max. 95%
---	----------

Operational pressure	86 kPa ~ 106 kPa
----------------------	------------------

Electrical Specification

Power supply	24 VDC / 5 W
--------------	--------------

Electrical protection	IP 66
-----------------------	-------



LZJ-22 Local Display Unit

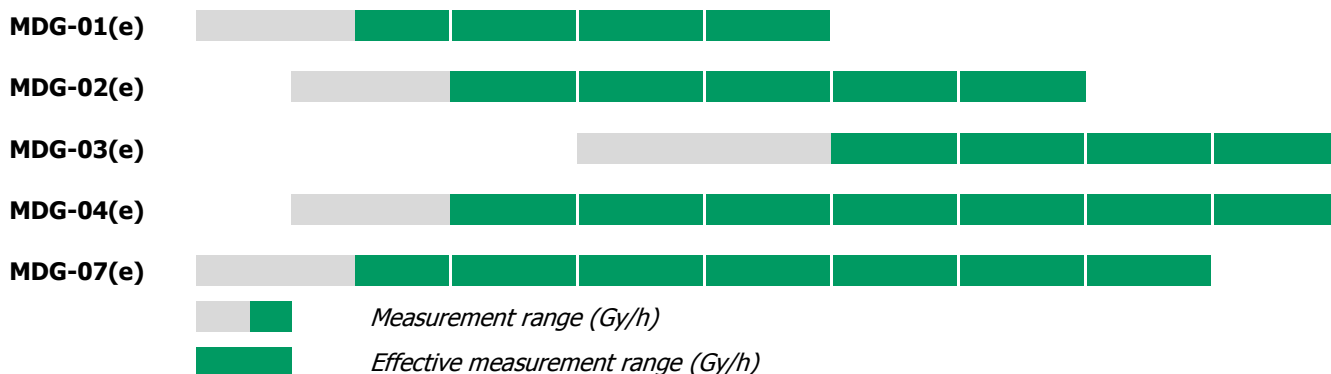


ASU-50 Alarm Slave Unit

Specification

Meter	MDG-01	MDG-02	MDG-03	MDG-04	MDG-07
Type	K0735	K0102	K0103	K0104	K0802
Measurement capability					
[Gy/h]	2E-8 ~ 1E-3	1E-7 ~ 1E-1	1E-5 ~ 1E1	1E-7 ~ 1E1	2E-8 ~ 1E0
[rad/h]	2E-6 ~ 1E-1	1E-5 ~ 1E+1	1E-3 ~ 1E3	1E-7 ~ 1E3	2E-6 ~ 1E2
Effective measurement range					
[Gy/h]	5E-7 ~ 1E-3	1E-6 ~ 1E-1	1E-3 ~ 1E1	1E-6 ~ 1E1	5E-7 ~ 1E0
[rad/h]	5E-5 ~ 1E-1	1E-4 ~ 1E+1	1E-1 ~ 1E3	1E-4 ~ 1E3	5E-5 ~ 1E2
Meter	MDG-01e	MDG-02e	MDG-03e	MDG-04e	MDG-07e
Type	K0921	K0622	K0623	K0624	K0804
Measurement capability					
[Sv/h]	2E-8 ~ 1E-3	1E-7 ~ 1E-1	1E-5 ~ 1E1	1E-7 ~ 1E1	2E-8 ~ 1E0
[rem/h]	2E-6 ~ 1E-1	1E-5 ~ 1E+1	1E-3 ~ 1E3	1E-7 ~ 1E3	2E-6 ~ 1E2
Effective measurement range					
[Sv/h]	5E-7 ~ 1E-3	1E-6 ~ 1E-1	1E-3 ~ 1E1	1E-6 ~ 1E1	5E-7 ~ 1E0
[rem/h]	5E-5 ~ 1E-1	1E-4 ~ 1E+1	1E-1 ~ 1E3	1E-4 ~ 1E3	5E-5 ~ 1E2
Energy capability	50 keV ~ 1.5 MeV				
Effective energy range	55 keV ~ 1.25 MeV	80 keV ~ 1.5 MeV	80 keV ~ 1.5 MeV	80 keV ~ 1.5 MeV	50 keV ~ 1.25 MeV
Detector type	1 x GM-tube	1 x GM-tube	1 x GM-tube	2 x GM-tube	2 x GM tube
Power consumption	1.5 VA	1.5 VA	1.5 VA	2 VA	2 VA
Dimensions (Ø x l)	65 x 438 mm (2.56 x 17.25 in)	65 x 277 mm (2.56 x 10.83 in)	65 x 277 mm (2.56 x 10.83 in)	65 x 383 mm (2.56 x 15.08 in)	65 x 562 mm (2.56 x 22.13 in)
Weight	about 1 kg (2.2 lb)	about 0.7 kg (1.54 lb)	about 0.7 kg (1.54 lb)	about 0.8 kg (1.8 lb)	About 1.2 kg (2.4.lb)

2E-8 1E-7 1E-6 1E-5 1E-4 1E-3 1E-2 1E-1 1E0 1E1



Models and Accessories

Type	Description
K0735	MDG-01 dose rate meter – basic configuration, output via RS-485
K0921	MDG-01e dose rate meter – basic configuration, output via RS-485
K0102	MDG-02 dose rate meter – basic configuration, output via RS-485
K0622	MDG-02e dose rate meter – basic configuration, output via RS-485
K0103	MDG-03 dose rate meter – basic configuration, output via RS-485
K0623	MDG-03e dose rate meter – basic configuration, output via RS-485
K0104	MDG-04 dose rate meter – basic configuration, output via RS-485
K0624	MDG-04e dose rate meter – basic configuration, output via RS-485
K0802	MDG-07 dose rate meter – basic configuration, output via RS-485
K0804	MDG-07e dose rate meter – basic configuration, output via RS-485
Optional Accessories	
<ul style="list-style-type: none"> ▪ Support for MDG-0X mounting on a wall or other support ▪ External radionuclide check source ▪ Internal radionuclide check source ▪ Local cyclic memory (FIFO) 	
Related Products	
K0743	LZJ-22 local display unit which displays and archives the data measured and indicates if preset alarm levels are exceeded
K0830	ASU-50 Alarm slave unit with strong acoustic signalling and 3 lights for visual signalling (red / yellow / green)



Flexible solutions

www.vf.eu

Contact address		Your supplier
<p>Czech Republic VF, a.s., Svitavská 588 CZ 679 21 Černá Hora tel. +420 516 428 611 fax +420 516 428 610 info@vf.eu</p>	<p>Slovak Republic VF, s.r.o., M. R. Štefánika 9 SK 010 02 Žilina tel. +421 415 072 411 fax +421 415 072 410 info@vf.eu</p>	