Newson Gale
HOERBIGER Safety Solutions

UK

Earth-Rite® MULTIPOINT II

Static Earth Monitoring System

Customer Supplied Cable Specifications and Approved Cable Parameters



ATEX UKCA C SP US IECEx KCs CCC

The safety of any system incorporating the equipment referred to in this manual is the responsibility of the installer of the system.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Any warranty is made void if the equipment is not installed, or used, in accordance with the manufacturers instructions.

GENERAL

The installation must be in accordance with the manufacturer's guidelines.

It is recommended that the transfer or mixing operation is interlocked with the contacts of the Earth-Rite MULTIPOINT II unit. This will ensure that the operation is stopped if the earth connection is inadvertently lost.

ATEX/IECEx

The installation shall be carried out by suitably trained personnel in accordance with the relevant sections of IEC 60079 and EN 60079.

All cables entering the Power Supply Unit, must be connected through approved cable glands in accordance with EN 60079-14.

IF YOU HAVE ANY QUERIES REGARDING THE ABOVE POINTS THEN PLEASE CONTACT NEWSON GALE, OR THEIR APPROVED DISTRIBUTOR, WITHOUT DELAY.

Maximum Cable Length Considerations for the Earth-Rite MULTIPOINT II Intrinsically Safe Circuits

The Intrinsically Safe cables connected to the Earth-Rite MULTIPOINT II are restricted in length by three I.S. Parameters, namely C (capacitance), L (inductance) and the L/R ratio. The cable parameters correspond to the output parameters of the equipment (Co, Lo & Lo/Ro).

The IEC code of practice (IEC 60079-14) suggests practical maximum cable parameters, for C, L and the L/R ratio, as 200pf/m, 1µH/m and 30 µH/ohm respectively. However, cable manufacturers generally publish specific data for their cables.

This data can be used by the installer, in conjunction with the table below, to determine the maximum allowed cable length.

Consideration must also be given to the resistance of the cable loops as the Earth-Rite MULTIPOINT II monitors to a maximum resistance of 10 ohm per channel.

In addition, all installations must be carried out in accordance with any relevant national standards and requirements.

For operational purposes, the cable between the Power Supply Unit and the Monitoring Unit should be no more than 200m in length.

Cable resistance values

The resistance figure shown should be multiplied by 2 to give the loop resistance.

Length	Cable Size and Type	Ohms
100m	of 1.0mm sq copper cable has a resistance of	1.73
100m	of 1.5mm sq copper cable has a resistance of	1.13
100m	of 2.5mm sq copper cable has a resistance of	0.69
100m	of 4.0mm sq copper cable has a resistance of	0.43

Earth-Rite MULTIPOINT II - Customer Supplied Cable Specification – ATEX/IECEx

Recommended Specification

Typical Installation – using Newson Gale Clamps, Cables etc for Plant-Item Connections

Cable from Earth-Rite MULTIPOINT II Monitoring Unit to the Earth-Rite MULTIPOINT II Marshalling Box
0.75mm^2 multi-core Cable with blue sheath or identifier (IS Circuit).

Cable from Earth-Rite MULTIPOINT II Monitoring Unit to Earth-Rite MULTIPOINT II Power Supply Unit
0.75mm^2 4-core Cable with blue sheath or identifier (IS Circuit). [Maximum Length: 200m]

Cable from Earth-Rite MULTIPOINT II Monitoring unit to Site Static Earthing Bar/Tape
4mm^2 single-core cable with green sheath.

Cable from the Site Static Earthing Bar/Tape to the Earth-Rite MULTIPOINT II Marshalling Box
4mm^2 single-core cable with green sheath.

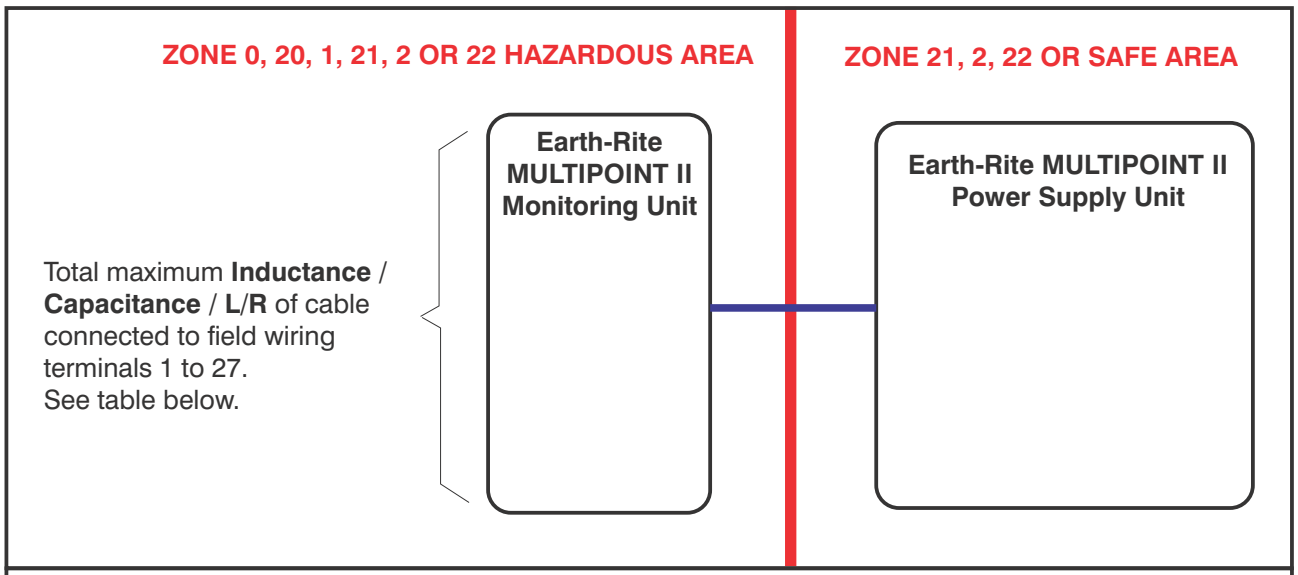
Cable from the Earth-Rite MULTIPOINT II Marshalling Box to each Remote Indicator Station
1.0mm^2 5-core Cable with blue sheath or identifier (IS Circuit).

Cable from Earth-Rite MULTIPOINT II Power Supply Unit to the Pump/Mixer/etc control circuit
1.5mm^2 2 core cable + Protective Earth Conductor (PE)

Cable from Supply to the Earth-Rite MULTIPOINT II Power Supply Unit
1.5mm^2 2 core cable + Protective Earth Conductor (PE)

Insulation of cables connected to the Power Supply Unit
All cables connected to the non-Intrinsically Safe terminals of the Power Supply Unit shall have adequate insulation to suit the voltage and the environmental conditions. The insulation for all cables should be rated to at least 500V.

Approved Cable Parameters



Gas Group	IIC & IIIC	IIB & IIIB	IIA & IIIA
External Capacitance (PSU to Monitor Unit)	1.5uF	9.9uF	39uF
External Inductance (PSU to Monitor Unit)	208uH	833uH	1667uH
External Lo/Ro (PSU to Monitor Unit)	29.1uH/ohm	117uH/ohm	234uH/ohm
External Capacitance (Monitor Unit field wiring terminals) Co	1.5uF	9.9uF	39uF
External Inductance (Monitor Unit field wiring terminals) Lo	1022uH	4088uH	8175uH
External Lo/Ro (Monitor Unit field wiring terminals) Lo/Ro	68uH/ohm	272uH/ohm	544uH/ohm

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NG UK MPII Cable Spec 280323 R3