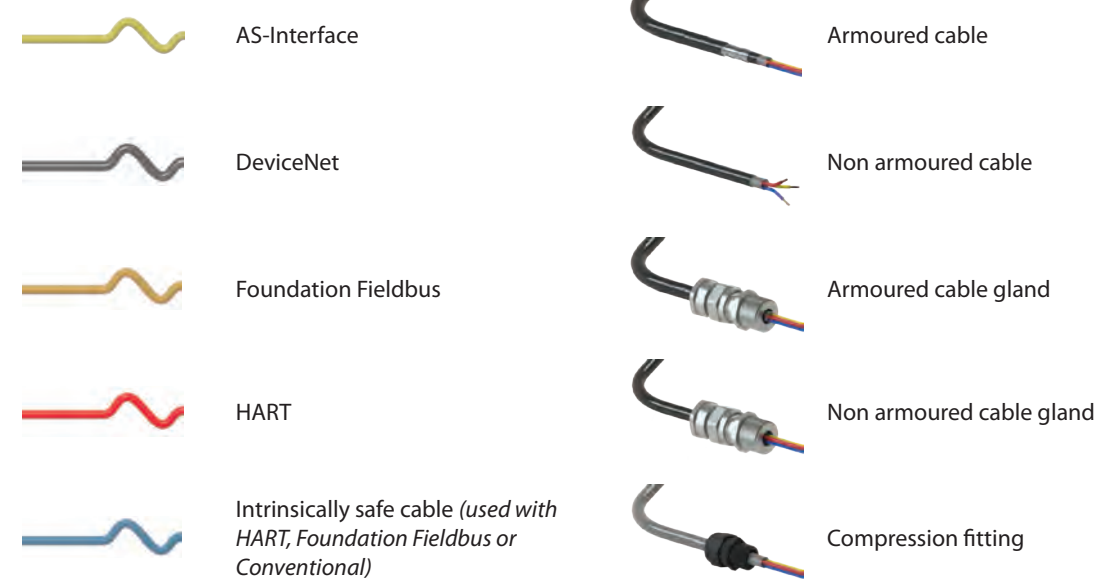


Protocol	Topology	Max distance ¹	Max # devices	Cabling
	Not limited	100 m (328 ft) 300 m (984 ft) Additional distance with multiple parallel repeaters. Tuners and terminators available for special extensions.	31 per network (62 per network with 2.1 Rev and extended addressing)	Unshielded, untwisted 2-wire for data and power (16 AWG is preferred).
	Trunk/drop	500 m @ 125 Kbit/s ⁴ 250 m @ 250 Kbit/s ⁴ 100 m @ 500 Kbit/s ⁴	62	(2) 2-wire with shield (5-wire bundle)
	Trunk with branching or chicken foot	1900 m (6200 ft) 120 m spur ⁵ Using FISCO 1000m	32 (16) ⁶	Shielded twisted pair
	Hart handheld	n/a	1	Direct connection
	4-20 mA multiplexer	3,048 m (10,000 ft)	15	Twisted shielded cable

Legend



IEC wiring guidelines*

Intrinsically Safe (IS) systems Ex ia Zone 0, 1 & 2

- Conduit/cabling**
- Use only insulated cable and conductors (test voltage > 500 VAC).
 - Separate IS cables from non-IS with spacing (at least 50 mm) or other means (shielding, screens, metal housing).
 - Identify with light blue color unless shielded or metal sheathed cable.
 - Cable capacitance and inductance must be considered.
 - Barriers (associated apparatus) limit voltage and current.
- Connections**
- Use glands or compression fittings suitable for particular cable and compatible with enclosure.
 - Quick connectors may be acceptable.
- Field instrument components**
- Field instruments must be classified as simple (non-energy storing) or IS (IS apparatus).
 - IS devices must be approved per FISCO or entity concept.
 - Parameter matching using entity concept:

IS apparatus	Associated apparatus
Lowest V _{max} in segment	> Voc
Lowest I _{max} in segment	> I _{sc}
Lowest P _{max} in segment	> Pt
C _{total} (field devices+cable)	< Ca
L _{total} (field devices+cable)	< La

- Parameter matching using FISCO is same as entity concept except cable and device Li & Ci may be ignored (must be within established FISCO values).
- Special notes**
- Instrument wiring may be manipulated while energized.
 - Protected drop connectors are recommended since bus performance will be affected by short circuit on the spur.

* Reference IEC60079-14. Guidelines are general in nature and not meant to be comprehensive. Typically they are supplemented at the national level in order to describe detailed practices which are unique to each country.

Flameproof system Ex d Zones 1 & 2

- Conduit/cabling**
- Rigid metal conduit or steel intermediate conduit may be used. (Not illustrated)
 - Stopping boxes with special compound must be used not more than 50 mm from the flameproof enclosure wall.
 - Standard cables may be used but cross sectional area may not be greater than 40% of conduit.
 - Armoured and non armoured cable with robust construction may be used, consisting of extruded inner bed to prevent gas propagation and tough rubber or synthetic sheath.
 - Cable glands rated Ex d and specifically designed for cable type (armoured or non armoured) must be used not more than 50 mm from the flameproof enclosure wall.

- Connections**
- Fittings must be flameproof approved.
- Field instruments**
- Complete apparatus must be flameproof approved.

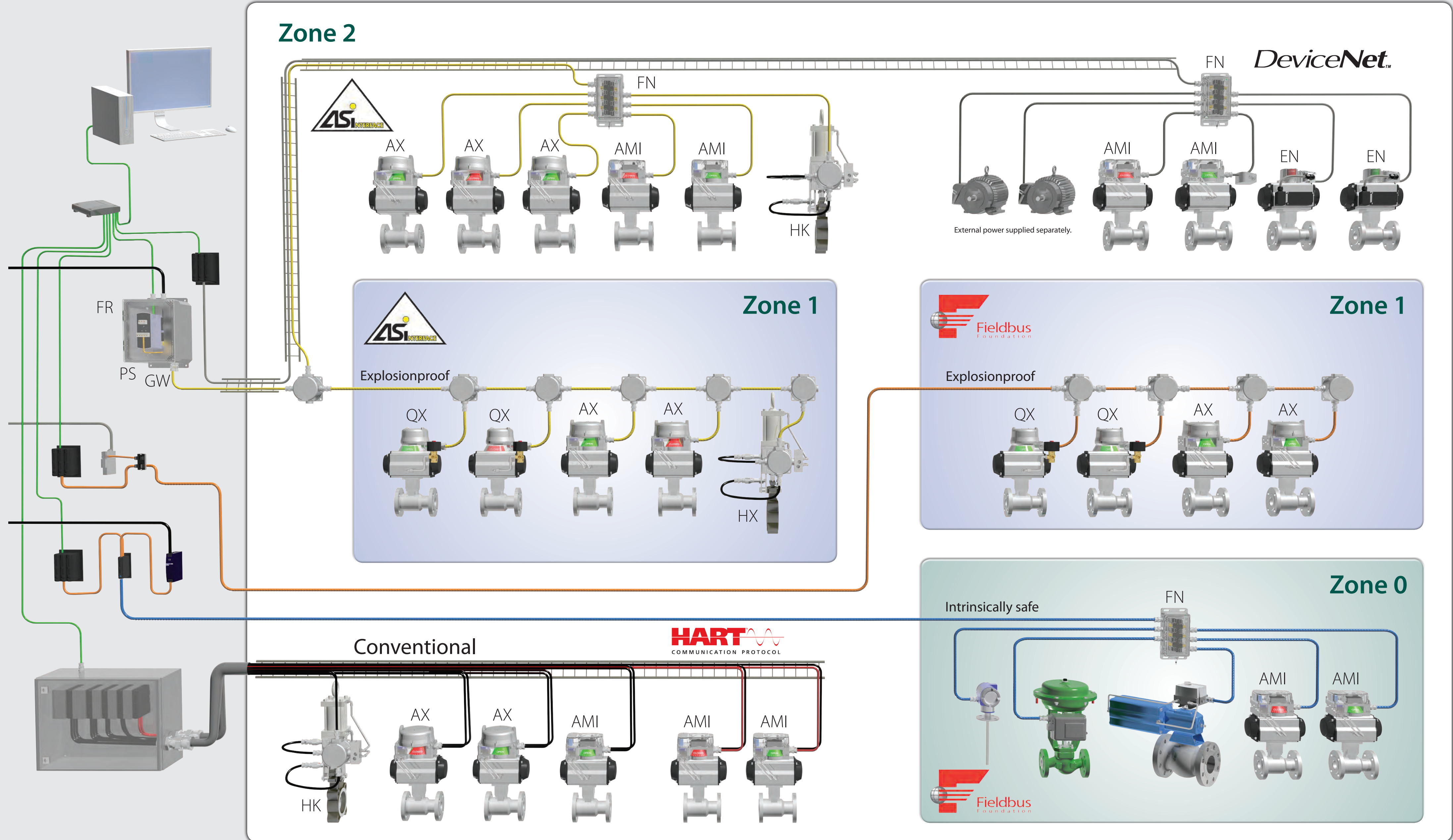
- Special notes**
- Ex e cabling practices and fittings may be used if the terminal compartment is approved to that standard.
 - Power must be removed before opening enclosures.

Nonincendive equipment used in flameproof system Ex n Zone 2 only

- Conduit/cabling**
- Same as flameproof.

- Connections**
- Same as flameproof.

- Field Instruments**
- Approved for use as nonincendive (nonsparking) devices by certified approval agencies.

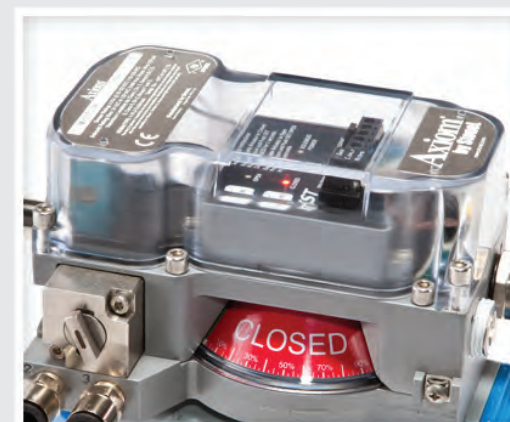


Protection concepts shown are for illustration purposes. Final acceptance of installation including wiring practices is subject to the authority having jurisdiction.

Axiom AX



Axiom AMI



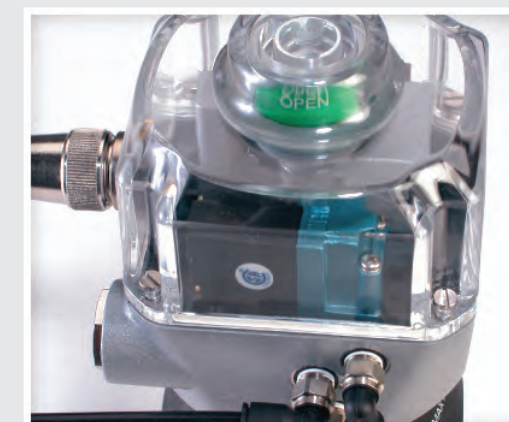
Eclipse EN



Quartz QX



Prism PM



Hawkeye HK/HX



FieldLink

