PERTRONIC INDUSTRIES LTD

INSTALLATION DATASHEET

Solenoid Interfaces

ARCSI, ARCSI-MM, BUR-2509-10K, BUR-2509-47K, HIR-GDM-10K, HIR-GDM-47K

Overview

Pertronic Solenoid Interfaces allow analogue addressable control modules and the Pertronic Agent Release Controller to activate and supervise a wide range of solenoids.

There are two groups of solenoid interfaces:

> » **ARCSI, BUR-2509-10K, HIR-GDM-10K**: For use with the Pertronic Extinguishing Agent Release Controller, the Pertronic Loop Relay (see note pg. 2), and the Pertronic Multi-Function Loop Responder

> » **ARCSI-MM, BUR-2509-47K, HIR-GDM-47K**: For use with System Sensor modules such as the M500S or SC-6 (see note pg. 2)

These interfaces have end-of-line (EOL) resistors which allow reverse-polarity fault supervision systems to detect open-circuit faults including disconnected or open-circuit solenoids. The fault supervision system will also identify a short-circuit fault in the cabling between control module and solenoid interface, but not a short-circuit across the solenoid itself.

Operation

In the normal state (solenoid inactive), the control module applies a small reverse polarity voltage for fault supervision. To energize the solenoid, the control module applies a voltage with polarity as marked on the interface input terminals.

Above
Pertronic Solenoid Interfaces (from left): ARCSI, BUR-2509-xxx, and HIR-GDM-xxx

Below
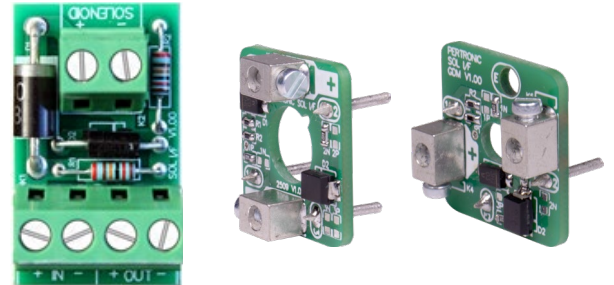*Burkert 2509 connector fitted with a Pertronic BUR-2509-xxx solenoid interface*

Typical Connection to a Pertronic Module

The diagram (below right) shows a solenoid interface connected to the "Relay 1" output (K1) of a Pertronic Loop Relay. Additional interfaces may be connected to relays 2-4. The current per Loop Relay output must not exceed 1 Amp.

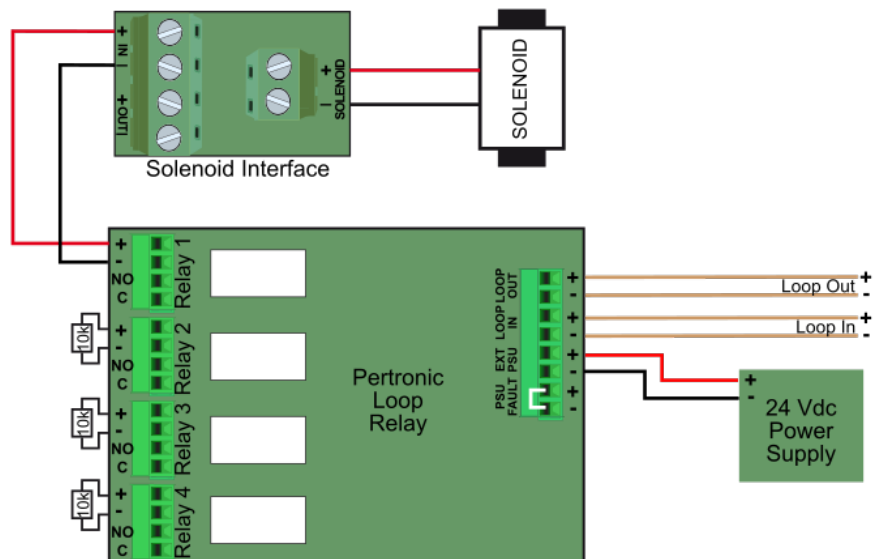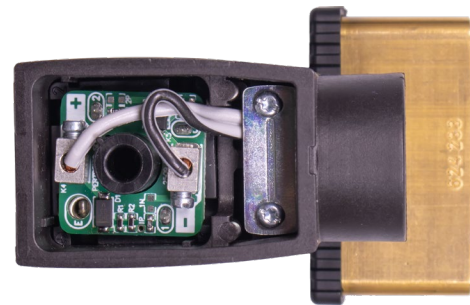Mount the solenoid interface as close as practicable to the solenoid.

The interface may also be connected to the Multi-Function Loop Responder's relay output or to the Agent Release Controller's detonate output. Please refer to the relevant technical manual for current specification and connection details.

Note that the solenoid current may exceed the analogue addressable loop current capacity. If so, an external power supply may be required, as shown in the diagram.
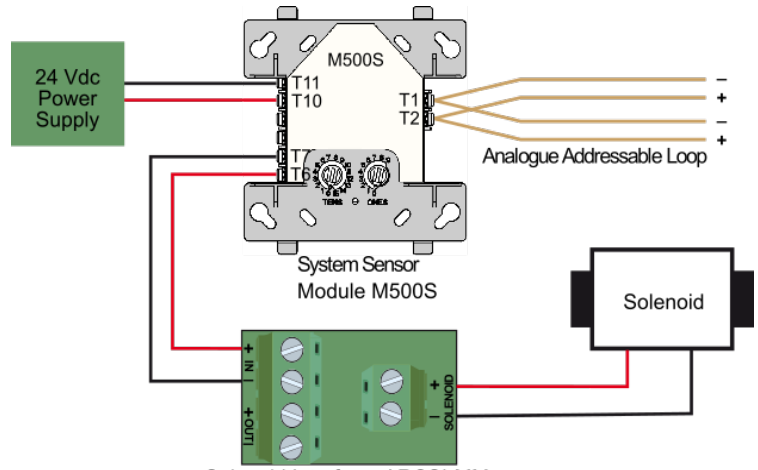
Typical Connection to System Sensor Modules

The diagram (right) shows a Pertronic Solenoid Interface (ARCSI-MM, BUR-2509-47k, or HIR-GDM-47K) connected to a System Sensor M500S Module. Mount the solenoid interface as close as practicable to the solenoid.

Note that the solenoid current may exceed the analogue addressable loop current capacity. If so, an external power supply will be required, as shown in the diagram.
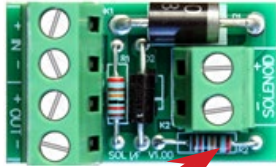
These solenoid interfaces may also be connected to System Sensor SC-6 modules.
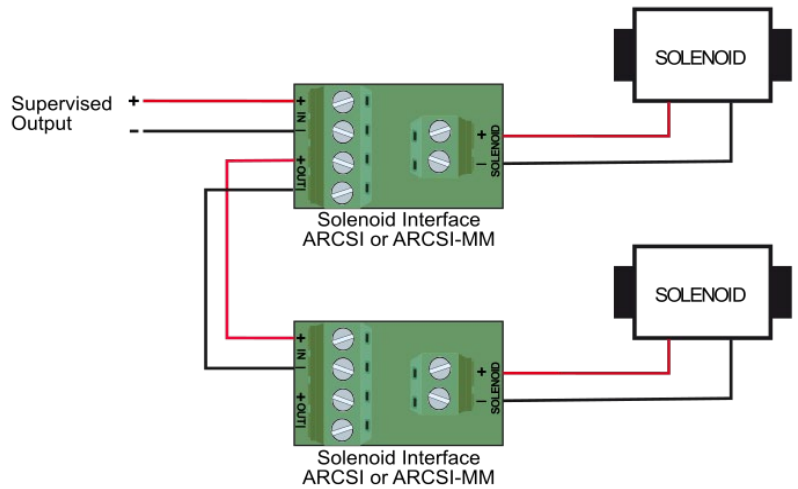
Connecting Two ARCSI or ARCSI-MM Interfaces & Solenoids in Parallel to a Single Output

Up to two solenoids may be connected in parallel (right). Each solenoid must have a separate solenoid interface. Remove resistor R2 (below right) on each interface to obtain the correct EOL resistance.

Note: BUR-2509-xxx and HIR-GDM-xxx interfaces should not be connected in parallel.

When connecting two ARCSI or ARCSI-MM interfaces in parallel, remove resistor R2 on both interfaces

Solenoid Interface Specification

Operating Voltage	0 V dc to 30 V dc
Operating Current	Up to 3 amps (see note)

Dimensions	PCB (L x W)	Overall Height
ARCSI, ARCSI-MM	20.5 x 35.5 mm	15 mm
BUR-2509-xxx, HIR-GDM-xxx	20.2 x 20.2 mm	14.5 mm

End of Line Resistor Values	
ARCSI, BUR-2509-10K, HIR-GDM-10K	10 kΩ
ARCSI-MM (2 x 120 kΩ in parallel)	60 kΩ
BUR-2509-47K, HIR-GDM-47K	47 kΩ

Notes: Usable current capacity is limited by the capacity of the control module's relay output.

Pertronic Solenoid Interfaces are not suitable for solenoids with built-in bridge rectifiers or back emf diodes. A bridge rectifier or back emf diode may prevent the interface reliably detecting an open circuit fault in the solenoid. The solenoid interface incorporates appropriate back emf protection.

Ordering Information

Product Code	Description	Product Code	Description
ARCSI	Agent Release Solenoid Interface	ARCSI-MM	Agent Release Solenoid Interface - Module Monitored
BUR-2509-10K	Solenoid I/F for Burkert 2509 Cable Plug (10k EOL)	BUR-2509-47K	Solenoid I/F for Burkert 2509 Cable Plug (47k EOL)
HIR-GDM-10K	Solenoid Interface for Hirschmann GDM Valve Connector (10k EOL)	HIR-GDM-47K	Solenoid Interface for Hirschmann GDM Valve Connector (47k EOL)