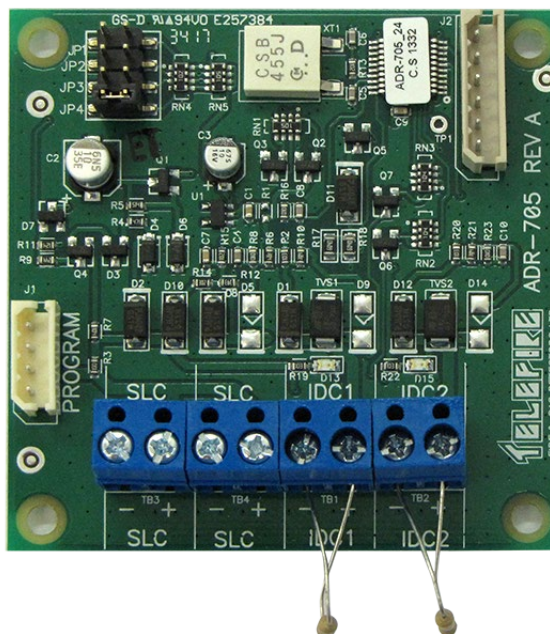


ADR-705

Addressable Dual Switch Interface Module

Technical Manual

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Note

The terms “**Trouble**” as used in NFPA 72 guideline and UL standards and “**Fault**” as used in EN 54 standards are used interchangeably throughout this manual.

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Note

Do not install, operate, and maintain this ADR-705 before fully reading this manual.

1 Introduction

The ADR-705 switch input module interfaces between the Telefire's control panels and a non-powered initiating device such as a presostat, alarm switch, valve switch, sprinkler flow switch, extinguishing gas flow switch, flooding switch, or a supervisory switch.

The module is powered by the SLC and does not require 24Vdc input.

The module's input is supervised for short, open, alarm, and normal status. The end-of-line device is a 100K Ω resistor. Configuration jumpers allow the selection of operation mode to be without short supervision (i.e., a short is considered as an alarm or activation) or with short supervision (i.e., a 3.9K Ω resistance is considered an alarm or activation, while a short is considered as a trouble condition).

The module is intended to be installed close to the switch it supervises (in the same room or up to 10m) without short supervision; and up to 100m with short supervision. The End of Line device is a 100K Ω resistor.

The ADR-705 includes an onboard indicating LED that flashes when addressed by the control panel and latches on upon alarm.

The ADR-705 module is supervised by the control panel and communicates with it via the SLC.

2 Compatibility

2.1 Control Panels

The ADR-705 is compatible with Telefire's ADR-7000 and ADR-3000 control panels.

2.2 Devices

The ADR-705 is compatible with Telefire's TFT-2800 Flooding Switch.

It is compatible with devices that were approved by Telefire and the relevant authorities.

3 Installation

The location of initiating devices should be as per the relevant standards and guidelines and requirement of the authorities having jurisdiction.

3.1 Pre-Installation Planning

3.1.1 Capacity Planning

Ensure that the control panel has two consecutive free addresses for the ADR-705.

3.1.2 Cabling Planning – Wire Characteristics' Effect on System Performance

The following table shows the effect of wiring characteristics on system performance:

Characteristic	Effect on SLC	Effect on IDC
Electric resistance	Minimal	Minimal
Capacitance	High	No affect
Inductance	High	Minimal
Mechanical Strength	High	High

Table 1 Wire Characteristics' Effect on System Performance

3.1.3 Cabling Planning – Signaling Line Circuits (SLC)

The ADR-705 connects to the control panel via a two-wire cable 20 – 12 AWG (cross section of 0.8mm² to 3.3mm²). Twisted-pair cable is recommended.

Cable type			Max SLC Length
AWG	Dia. (mm)	Cross Section. (mm ²)	
20	0.812	0.518	570
19	0.912	0.653	710
18	1.024	0.823	900
17	1.15	1.04	1,125
16	1.291	1.31	1,425
15	1.450	1.65	1,800
14	1.628	2.08	2,275
13	1.828	2.62	2,875
12	2.053	3.31	3,625

Table 2 Selecting SLC Wires

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Note

Notify the operator or the security personnel that the system will be temporary disconnected before adding devices to the control panel.

3.1.4 Cabling Planning – Initiating Device Circuit (IDC)

The ADR-705 connects to the initiating device via a two-wire cable 20 – 12 AWG (cross section of 0.5mm² to 3.3mm²). The initiating device should be no farther than 100m is configured for short supervision, or no more than 10m, same-room installation without short supervision.

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Note

When the ADR-705 is configured without supervision for shorts (JP2 open), the IDC line is limited to the same room and no longer than 10m.

3.2 Installation

Connect the initiating device to the ADR-705 using a 20 – 12 AWG (cross section of 0.5mm² to 3.3mm²).

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Note

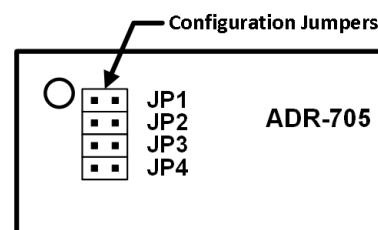
When the ADR-705 is configured without supervision for shorts (JP2 open), the IDC line is limited to the same room or no farther than 10m.

3.2.1 ADR-705 Configuration

The ADR-705 has four configuration jumpers that allow for customization of the way it operates.

JP1	JP2	JP3	JP4	ADR-705 operating mode
			X	Flow switch, NO, without short supervision ¹
		✓	X	Flow switch, NC, without short supervision ¹
	✓		X	Flow switch, NO, with short supervision ²
	✓	✓	X	Flow switch, NC, with short supervision ²
✓		X	X	Do not use
✓	✓		X	Flooding sensor with short supervision ²
X	X	X		Single address only, IDC 2 is not operational
X	X	X	✓	Two consecutive addresses

	Jumper disconnected
✓	Jumper connected
X	Either connected or disconnected



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Table 3 ADR-705 configuration

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Note

When the ADR-705 is without short supervision (JP2 is open) the IDC lines are limited to a distance of no more than 10m and in the same room as the ADR-705. A short is considered as activation.

3.2.2 ADR-7000, SAVER-7000, and GUARD-7 Configuration

Define the ADR-705 as a switch (Reset Switch; Silence; Disconnect; Supervisory; Abort; Release; Alarm Matrix; or Fan FC)

3.2.3 ADR-3000 Configuration

Define the ADR-705 as **Push_Button** when it is connected to a flow switch. Configure it as a **Supervisory_Switch** when it is connected to a supervisory device or a flooding sensor. Please see the ADR-3000 technical manual for additional information on device configuration and matrix activations.

¹ When the ADR-705 is without short supervision (JP2 is open) the IDC lines are limited to a distance of no more than 10m and in the same room as the ADR-705. A short is considered as activation.

² When the ADR-705 is with short supervision (JP2 is connected) the IDC is limited to 100m. A short is considered as a fault, and resistance of 3.9K is considered activation.

3.2.4 Location

The ADR-705 should be installed in a closed location. Avoid exposure to outdoor environment to prevent high humidity or dust or air pollution.

Mount the ADR-705 in an AIB-800 box on a solid wall at a height that will have comfortable access to connecting the cables and where it is possible to supervise and clearly see the LED indicators. Ensure that cable length limitations are met.

3.2.5 Connecting input (IDC) and SLC lines

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Note

Measure the wiring to ensure there are no shorts before connecting the wiring to the ADR-705.

Connecting or adding modules to the control panel shall be done when all power to the control power (AC and batteries) is disconnected.

Connect the input device and SLC cable. Move the adr-705's EoL resistor to the device being monitored.

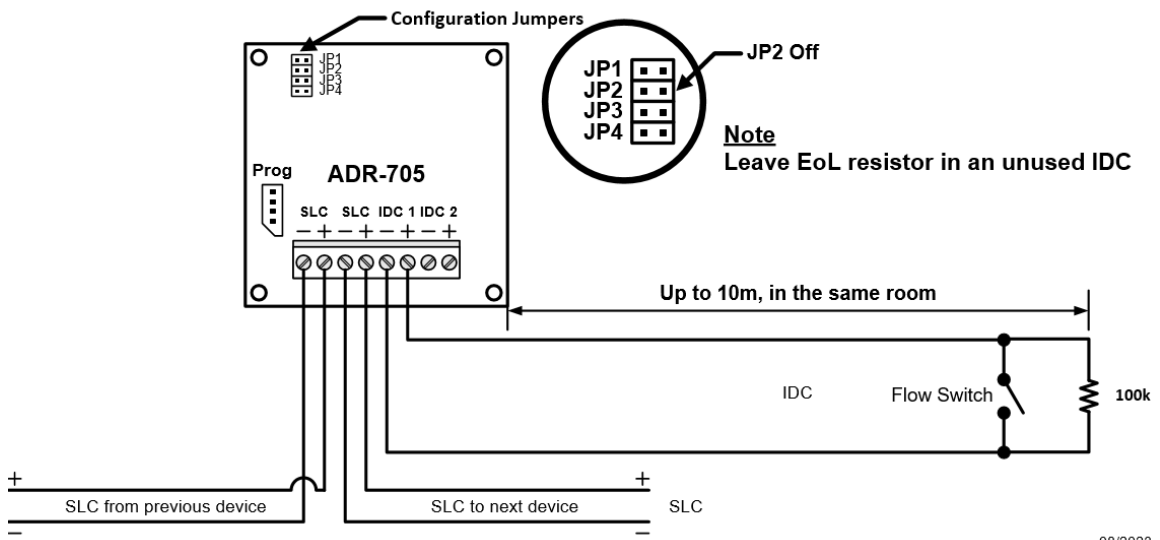


Figure 1 ADR-705 – without short supervision (short is considered as activation)

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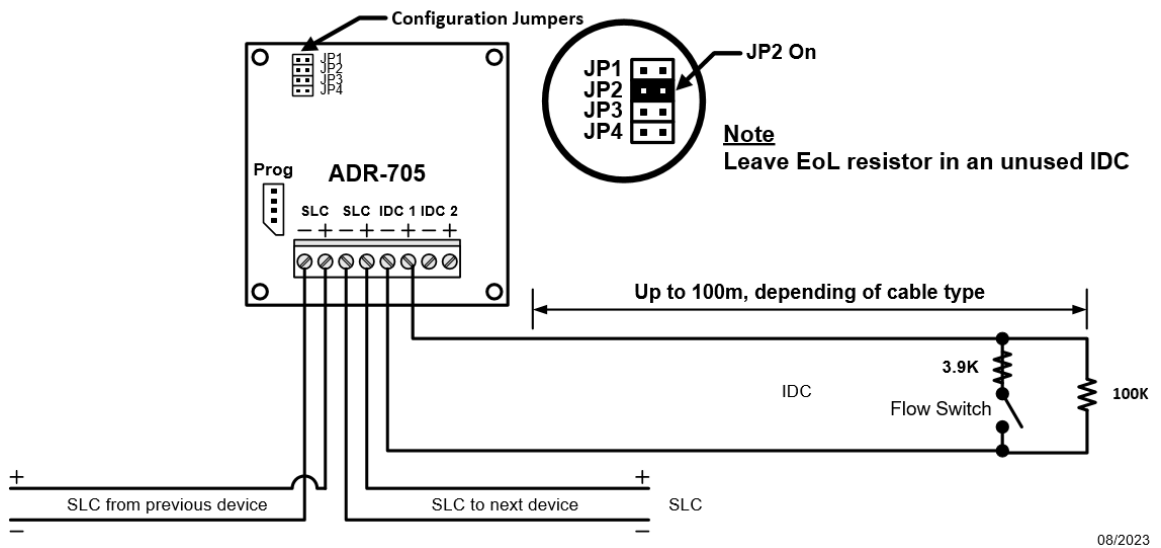


Figure 2 ADR-705 – with short supervision (short is considered as a fault, 3.9K is activation)

3.3 Connecting a flooding detector

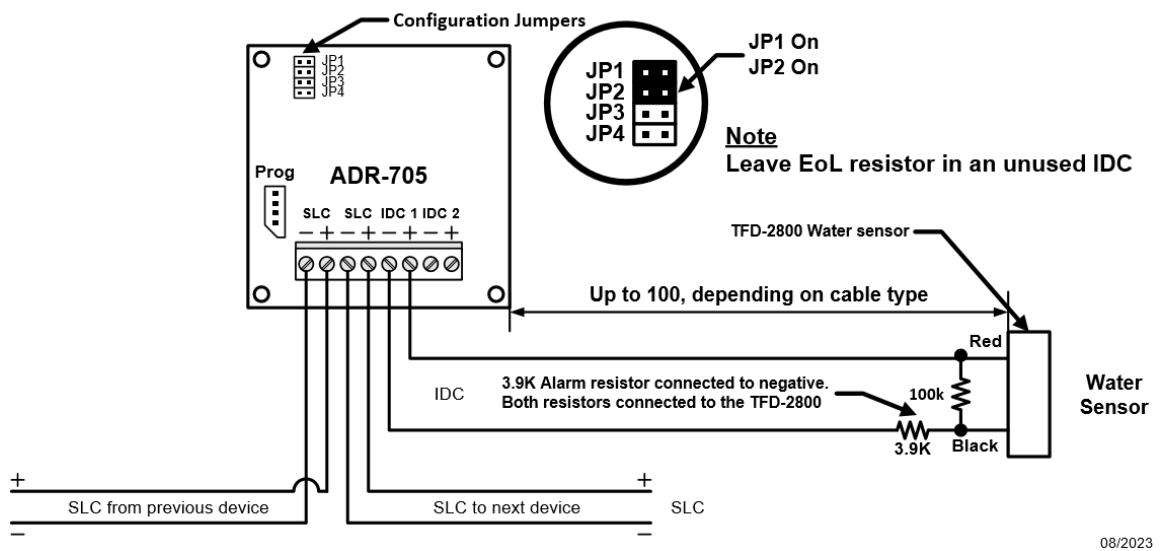


Figure 3 ADR-705 – connecting a TFD-2800 Flooding sensor

3.4 Connecting sprinkler water-flow switches

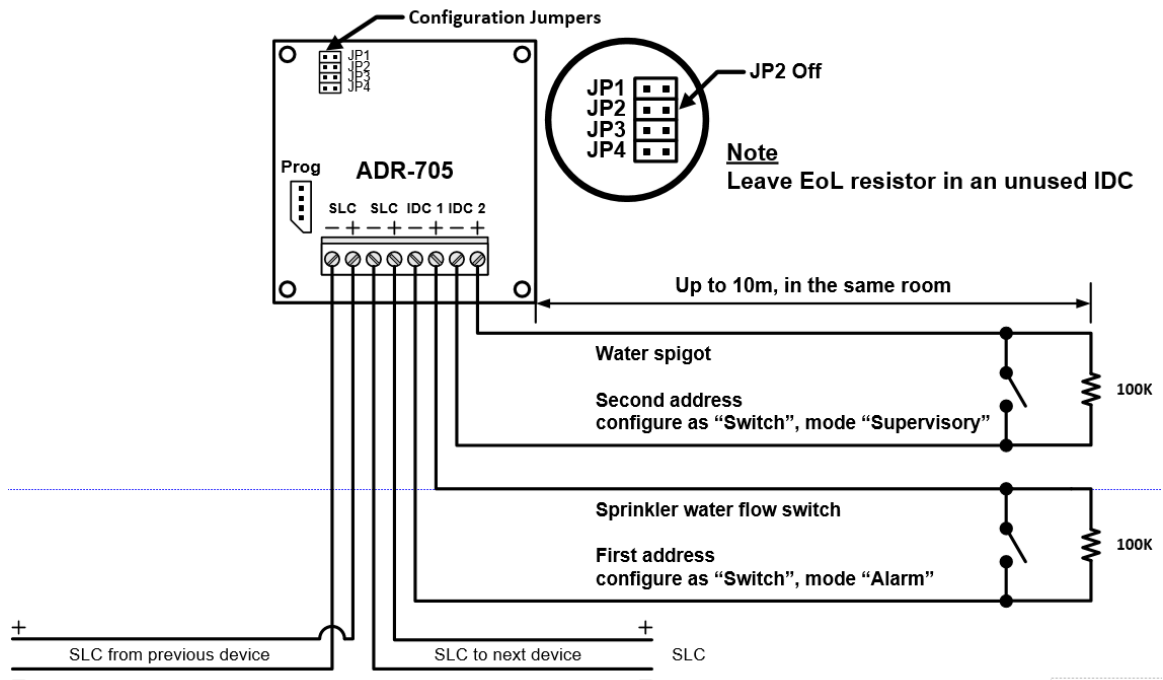


Figure 4 ADr-705 – connecting sprinkler water-flow switches

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Note

Connect the pipe shut down switch at its NO connection. Closing the connection will cause a supervisory event.
 Connect the water flow sensor at its NO point.

3.5 Post-Installation

Test the module to ensure that it operates properly and verify that it is included in the appropriate matrices as specified by the planning consultant.

3.6 Documentation

Mark the module’s addresses on a label that is easily visible. Indicate its purpose (for example, “second-floor sprinkler flow switch”).

4 Troubleshooting

The ADR-705 includes a red LED that flashes upon being addressed by the control panel. This LED turns on when the ADR-705 is in alarm.

An alpha-numeric message on the control panel's LCD screen and annunciators will be indicated with a detailed description of the event.

5 Specification

Module PCB dimensions (W / H).....	70 / 70 mm
AIB-800 dimensions (W / H / D).....	167 / 125 / 33 mm
Weight	gr.
Operating Temperature range.....	-10°C – +60°C (14°F – 140°F)
Relative Humidity Range	10% – 93% non-condensing
Operating Voltage (supplied by control panel via SLC).....	21 V, modulated
Maximum current consumption (SLC).....	200µA (quiescence mode) 3.5mA (Alarm)
IDC 1 Supervised, current limited	
NFPA Classification	Class B
Current protection	electronic current limit
EOL Resistor	100K – use P/N EOL-100
Maximum line impedance	10Ω
Alarm resistance	3.9K (when using short supervision)

All values are nominal. Specifications are subject to change without prior notice

6 Certification

Telefire's ADR-705 Addressable Dual Switch Input Module has the following approvals:

- EN 54 Compliant
- UL 864 Approved
- SI 1220 Approved
- CE Marked