

716 OUTPUT EXPANSION MODULE

Installation Guide

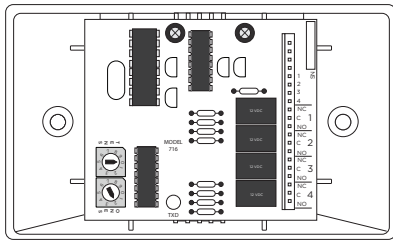


Figure 1: 716 Module

DESCRIPTION

The 716 Output Expansion Module provides four independently programmable Form C (SPDT) relays and four zone-following annunciator outputs for use on XR Series, XF6 Series, and XT75 Control Panels.

Connect the 716 Module to the panel LX-Bus. The 716 Module cannot be connected to the Keypad Bus.

In addition to the panel onboard Form C relays, you can connect multiple modules to the panel for unique auxiliary relays and annunciator outputs, one per zone..

What is Included?

- One 716 Output Expansion Module
- One 20-Wire Harness
- Hardware Pack



1 MOUNT THE MODULE

The 716 comes in a high-impact plastic housing that you can mount directly to a wall, backboard, or other flat surface. For easy installation, the housing base contains holes that allow you to mount the module on a single-gang switch box or ring. Mount the module outside the panel enclosure.

1. Remove the housing fastener screws and separate the top housing from the base.
2. Insert screws through the desired mounting holes on the housing base. Refer to Figure 2 for mounting hole locations.
3. Tighten the screws into place.
4. Attach the housing top to the mounted base with the housing fastener screws. Refer to Figure 3.

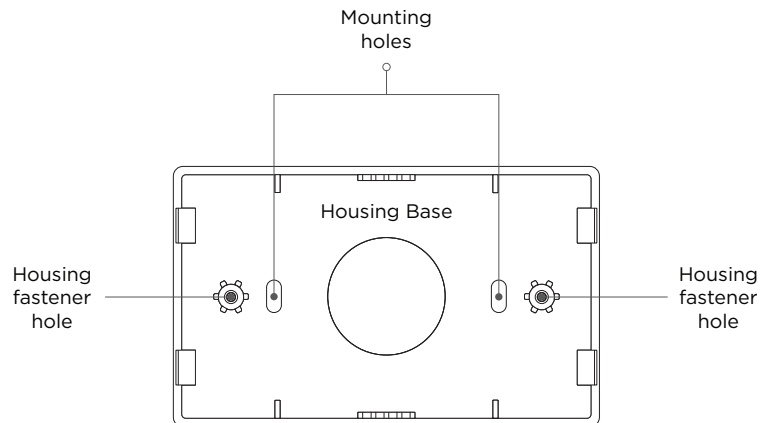


Figure 2: Mounting Hole Locations

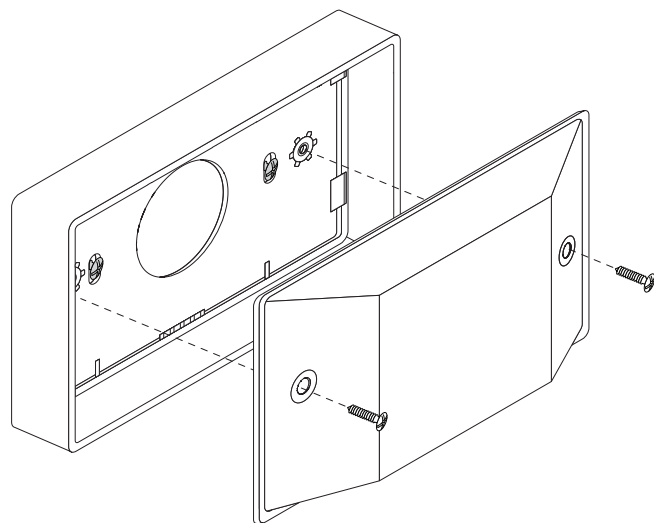


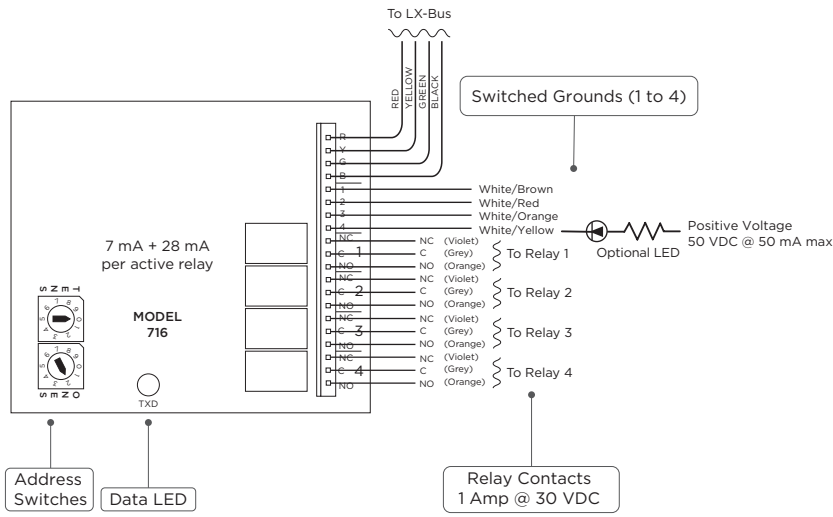
Figure 3: Assembling the Housing

For mounting instructions with a 716T Terminal Strip, see the [716T Terminal Strip Installation Guide LT-2017](#).

2 WIRE THE MODULE

Refer to Figure 4 when wiring the module. Connect the included 20-wire harness to the main header. Connect red, green, and black wires to the panel LX-Bus. For supervised operation, connect the yellow wire to the panel LX-Bus. Connect remaining wires as needed.

For more information, refer to “Unsupervised Operation” and “Supervised Operation.” For additional wiring options, see [716 Terminal Strip Installation Guide](#).



TERMINAL/WIRE COLOR	PURPOSE
R (Red)	Power from Panel (RED)
Y (Yellow)	Receive Data from Panel (YEL)
G (Green)	Send Data from Panel (GRN)
B (Black)	Ground from Panel (BLK)
1 (White/Brown)	Switched Ground 1
2 (White/Red)	Switched Ground 2
3 (White/Orange)	Switched Ground 3
4 (White/Yellow)	Switched Ground 4
NC (Violet)	Relay Output 1 - 4
C (Grey)	Relay Output 1 - 4
NO (Orange)	Relay Output 1 - 4

Figure 4: Module Wiring

3 SET THE MODULE ADDRESS

Set the 716 Module to an address that is used by the panel to turn outputs on and off. For easy addressing, the 716 contains two on-board rotary switches that you can set with a small screwdriver.

When using annunciator outputs, set the 716 address to match the zones that you want the outputs to follow. If you are only using the Form C relays, set the address to match the output numbers that you want to operate. The module uses two rotary switches (TENS and ONES) to set the module address. Set the switches to match the last two digits of the addresses. For example, for address 02 set the switches to TENS 0 and ONES 2 as shown in Figure 4. For more information, refer to Table 1.

Note: Any 711, 714, 714-8, 714-16, 714-8INT, 714-16INT, 715, or other LX-Bus device can be set to the same address as a 716 that is operating in unsupervised mode. Sharing an LX-Bus address in this manner does not cause a conflict between these devices. For more information, refer to “Unsupervised Operation”.

SWITCH		XT75	XR150 AND XF6-100	XR550 AND XF6-500				
TENS	ONES			LX	LX500	LX500	LX600	LX700
0	0	500	500	500	600	700	800	900
0	1	501	501	501	601	701	801	901
0	2	502	502	502	602	702	802	902
0	3	503	503	503	603	703	803	903
0	4	504	504	504	604	704	804	904
0	5	505	505	505	605	705	805	905
0	6	506	506	506	606	706	806	906
...	...	...	...	...	...	...	...	...
4	7	547	547	547	647	747	847	947
4	8	548	548	548	648	748	848	948
4	9	549	549	549	649	749	849	949
...	...		...	...	...	...	...	...
9	8		598	598	698	798	898	998
9	9		599	599	699	799	899	999

Table 1: LX-Bus and Corresponding Zone Numbers

4 PROGRAM THE PANEL

Assign the Form C relays to outputs in Output Options and Zone Information, or assign the relays to Zone Alarm Actions. For example, program the panel Telephone Trouble Output to operate output 520 so that a trouble on the panel phone line would toggle relay 1 on a module set to address 520. Output 521 would toggle relay 2 on the same 716 module. The module's four Form C relays are rated for 1 Amp at 30 VDC resistive. For more information about programming, refer to the appropriate panel programming guide.

ADDITIONAL INFORMATION

Wiring Specifications

DMP recommends using 18 or 22 AWG for all LX-Bus and Keypad Bus connections. The maximum wire distance between any module and the DMP Keypad Bus or LX-Bus circuit is 1,000 feet. To increase the wiring distance, install an auxiliary power supply, such as a DMP Model 505-12. Maximum voltage drop between a panel or auxiliary power supply and any device is 2.0 VDC. If the voltage at any device is less than the required level, add an auxiliary power supply at the end of the circuit.

To maintain auxiliary power integrity when using 22-gauge wire on Keypad Bus circuits, do not exceed 500 feet. When using 18-gauge wire, do not exceed 1,000 feet. Maximum distance for any bus circuit is 2,500 feet regardless of wire gauge. Each 2,500 foot bus circuit supports a maximum of 40 LX-Bus devices.

For additional information refer to the LX-Bus/Keypad Bus Wiring Application Note (LT-2031) and the 710 Bus Splitter/Repeater Module Installation Guide (LT-0310).

Supervised Operation

To install the module as a supervised device, connect all four LX-Bus wires from the module to the panel LX-Bus and program an appropriate zone as a Supervisory (**SV**) type. The module may use any address for supervision, provided that a Supervisory zone is programmed for that address. For example, zone 504 on an XR550 panel would be programmed as an **SV** zone to supervise a 716 module set to address 04 on the first LX-Bus. Only the first zone number for the programmed device is supervised. Refer to Table 1.

When installing Zone Expansion Modules on the same LX-Bus as a supervised 716 Module, address the Zone Expanders to the next zone number. For example, on an XR550 panel, the zone is 520 for supervision and 521 for a zone expander on the same bus.

If a supervised 716 Module loses communication with the panel, an open condition (Trouble) is indicated on its Supervisory zone.

Unsupervised Operation

To operate the module in unsupervised mode, do not connect the yellow wire from the module to the panel LX-Bus. Unsupervised operation allows you to install multiple modules and set them to the same address. Do not program a zone address for unsupervised operation. Unsupervised operation is incompatible with fire listed installations. For more information, refer to "Compliance Listing Specifications".

Annunciator Outputs (Switch-to-Ground)

Unlike the module Form C relays, the four power limited annunciator outputs on the 716 Module follow the zone state having the same address. For example, output 1 (white/brown) on a 716 module set to address 120 shorts to ground each time zone 120 is in alarm or trouble while armed. Use this feature to operate relays or LEDs to show changes in the state of the panel armed zones. Refer to Table 2.

ARMED ZONE STATE	716 ANNUNCIATOR OUTPUT ACTION
Normal	Off—No ground reference
Trouble, wireless low battery, missing	On—Steady short to ground
"A" or "L" in Report to Transmit	Pulse (1.6 seconds On, 1.6 seconds Off)
Zone Bypassed	Slow pulse (1.6 seconds On, 4.8 seconds Off)

Table 2: Annunciator Outputs

Exceptions to Output Expansion Module Addressing

The module can only be wired to an LX-Bus. To determine the correct output for a particular keypad zone, match the zone number with the annunciator output number. Special addresses are configured to allow the annunciator outputs to follow the panel and keypad zones when connected to the first LX-Bus. Refer to Table 3.

LX/LX500 ADDRESS	ZONES	LX/LX500 ADDRESS	ZONES	LX/LX500 ADDRESS	ZONES	LX/LX500 ADDRESS	ZONES
501	1 to 4	551	51 to 54	519	91-94	559	131-134
505	5 to 8	561	61 to 64	529	101-104	569	141-144
509	9 to 10	571	71 to 74	539	111-114	579	151-154
511	11 to 14	581	81 to 84	549	121-124	589	161-164
521	21 to 24	591	91 to 94				
531	31 to 34						

Table 3: XR Series, XF6 Series, and XT75 LX-Bus Addresses and Corresponding Zones

COMPLIANCE LISTING SPECIFICATIONS

UL Listed Installations

To comply with ANSI/UL 365 Police-Connected Burglary System or ANSI/UL 609 Local Burglary Alarm Systems, the module must be mounted in the supplied, UL listed enclosure with a tamper.

Unsupervised operation is not suitable for fire listed installations.

Any auxiliary power supply for a commercial fire installation must be regulated, power limited, and listed for Fire Protective Signaling.

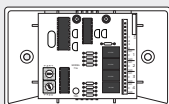
ULC Commercial Burglary Installations (XR Series Control Panels)

Place the output module with at least one zone expander in a listed enclosure and connect a DMP Model 307 Clip-on Tamper Switch to the enclosure programmed as a 24-hour zone.

716 OUTPUT EXPANSION MODULE

Specifications

Operating Temperature	32°F - 120°F
Operating Voltage	12 VDC Nominal
Operating Current	7 mA
	+ 28 mA per active relay
Form C Relay	1 Amp at 30 VDC
Weight	4.8 oz. (136.0 g)
Dimensions	2.5" W x 2.5" H (6.35 cm W x 6.35 cm H)



Ordering Information

716 Output Expansion Module

Compatibility

XT75 Control Panels
XR Series Control Panels
XF6 Series Control Panels
716T Terminal Strip

Certifications

California State Fire Marshall (CSFM)

New York City (FDNY)

Underwriters Laboratory (UL) Listed

ANSI/UL 365	Police Connected Burglar
ANSI/UL 464	Audible Signal Appliances
ANSI/UL 609	Local Burglar
ANSI/UL 864	Fire Protective Signaling 10th Edition
ANSI/UL 985	Household Fire Warning
ANSI/UL 1023	Household Burglar
ANSI/UL 1076	Proprietary Burglar
ULC Subject-C1023	Household Burglar
ULC/ORD-C1076	Proprietary Burglar
ULC S304	Central Station Burglar
ULC S545	Household Fire



Designed, engineered, and
manufactured in Springfield, MO
using U.S. and global components.

LT-0183 1.04 25014

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