782 "ICE CUBE" CONTROL RELAYS

FEATURES — BENEFITS

c UL us
UL Recognized
File No. E43641(782)
E209950 (782H)

168986

TÜV

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

c UL us
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKETS:
782: **70-461-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
FLAG INDICATOR:	SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.
BI - POLAR L.E.D. STATUS LAMP:	ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.
COLOR CODED PUSH BUTTON:	IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.
LOCK-DOWN DOOR:	WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.
FINGER - GRIP COVER:	ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.
WHITE PLASTIC I.D. TAG/WRITE LABEL:	USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.
COVER ADAPTERS:	DIN RAIL ADAPTER OR TOP/BOTTOM FLANGE ADAPTER, ALLOWS THE 700 RELAYS TO BE DIRECT MOUNTED TO A DIN RAIL OR PANEL.
VACUUM BAKED & DRY NITROGEN FILLED (782H):	REMOVES CONTAMINANTS AND PROVIDES A CLEAN & DRY ATMOSPHERE FOR CONTACTS.
HERMETICALLY SEALED METAL ENCLOSURE (782H):	IDEAL FOR USE IN HAZARDOUS LOCATIONS. UL CERTIFIED FOR CLASS 1 DIVISION 2 GROUP A, B, C & D HAZARDS. WHEN RELAY IS USED WITH 70-461-1 SOCKET, THE HOLD-DOWN CLIP 16-1328 IS REQUIRED.
PLUG-IN STYLE OR SIDE MOUNTING STUD WITH ANTI- ROTATION TAB:	WHEN USED WITH 70-461-1 SOCKET THE 782H CAN BE DIN RAIL MOUNTED OR PANEL MOUNTED. THE SIDE STUD PROVIDES FOR DIRECT MOUNT & SOLDERED WIRE APPLICATIONS.

MANUFACTURED UNDER ISO 9002 & QS 9000

UL RATINGS FOR 782 HERMETICALLY SEALED

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD	MINIMUM LOAD
4PDT	1 AMP	120/240	50/60 Hz	RESISTIVE	DRY CIRCUIT
	3 AMP	120/240	50/60 Hz	RESISTIVE	100 mA 12 VAC
	5 AMP	120/240	50/60 Hz	RESISTIVE	500 mA 12 VAC
	1 AMP	30	DC	RESISTIVE	50 mA 5 VAC
	3 AMP	30	DC	RESISTIVE	100 mA 12 VDC
	5 AMP	30	DC	RESISTIVE	500 mA 12 VDC

782 "ICE CUBE" CONTROL RELAYS

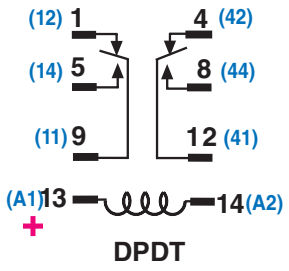
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	782XBX1/782XDX1	782XBX2/782XDX2	782XBX3/782XDX3	782H
COIL					
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85	85	85	85
Pull-in Voltage DC:≤	% of nominal	80	80	80	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10	10	10	10
Dropout Voltage DC:≥	% of nominal	10	10	10	10
Maximum Voltage:	% of nominal	110	110	110	110
Resistance:	% ±	15	15	15	15
Coil Power AC (60 Hz):	VA	1.2	1.2	1.2	1.2
Coil Power DC:	W	0.9	0.9	0.9	0.9
Insulation System Per UL Standard 1446:		Class B (130 ºC)	Class B (130 ºC)	Class B (130ºC)	Class B (130ºC)
Maximum Coil Dissipation, AC (60 Hz):	VA	2.55	2.55	2.55	2.5
Maximum Coil Dissipation, DC:	W	2.3	2.3	2.3	2
Duty:		Continuous	Continuous	Continuous	Continuous
CONTACTS					
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed	Silver,gold plated,silver,gold flashed, silver alloy, gold, flashed, gold,silver,nickel
Contact Rating AC Amperes (AC1):	A	3	10 / 8.0	3	1.0 / 3.0 / 5.0
Contact Rating AC Voltage:	V	120 / 240	110/120 - 220/277	120 /240	120 / 240
Contact Rating DC Amperes (DC1):	A	3 / 0.25	8 / 0.25	3 / 0.25	1.0 / 3.0 / 5.0
Contact Rating DC Voltage:	V	28 / 220	28 / 220	28 / 220	28
Horse Power (AC):	HP	1/10 @ 120 V	1/3 @ 120 V	1/16 @ 120 V	
Horse Power (AC):	HP	1/10 @ 240 V	1 @ 277 V		
Pilot Duty (60 Hz):		B300	B300	B300	
Utilization Category:	IEC	AC15	AC15	AC15	AC15
VA Rating Make:	VA	1800	3600	1800	1800
VA Rating Break:	VA	180	360	180	180
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	50 @ 5 VDC or 0.5 W	50/100 @ 5 VDC or 50 mw / 0.5 W
TIMING					
Operate Time:	ms	20	20	20	13
Release Time:	ms	20	20	20	6
DIELECTRIC STRENGTH					
Coil to Contacts:	V rms	1500	1500	1500	1240
Across Open Contacts:	V rms	1000	1000	1000	500
Pole to Pole:	V rms	1500	1500	1500	1240
Contacts to Frame:	V rms				1240
Insulation Resistance:	megohms minimum @VDC	100 @ 500	100 @ 500	100 @ 500	100 @ 500
VIBRATION RESISTANCE					
Functional:	g's	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude
SHOCK RESISTANCE					
Functional:	g's	10	10	10	10
TEMPERATURE					
Operating, AC Lower:	ºC	-40	-40	-40	-40
Operating, AC Upper:	ºC	+70	+70	+70	+70
Operating, DC Lower:	ºC	-40	-40	-40	-40
Operating, DC Upper:	ºC	+70	+70	+70	+70
Storage, Lower:	ºC	-40	-40	-40	-40
Storage, Upper:	ºC	+105	+105	+105	+105
LIFE EXPECTANCY					
Electrical @ Rated Load (AC1):	operations	200,000	200,000	200,000	100,000
Mechanical @ no Load :	operations	10,000,000	10,000,000	10,000,000	10,000,000
MISCELLANEOUS					
Operating Position:		Any	Any	Any	Any
Insulation Material:	94V-0	Molded plastic	Molded plastic	Molded plastic	Molded plastic
Enclosure Material:	94V-0	Polycarbonate	Polycarbonate	Polycarbonate	Steel
Cover Protection Category:	IP	40	40	40	67
Terminals:	Inch (mm)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508)
Weight:	grams	36	36	36	45

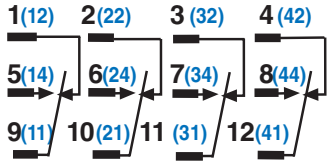
782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS

DPDT & 4PDT
1, 3, 5 & 10 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



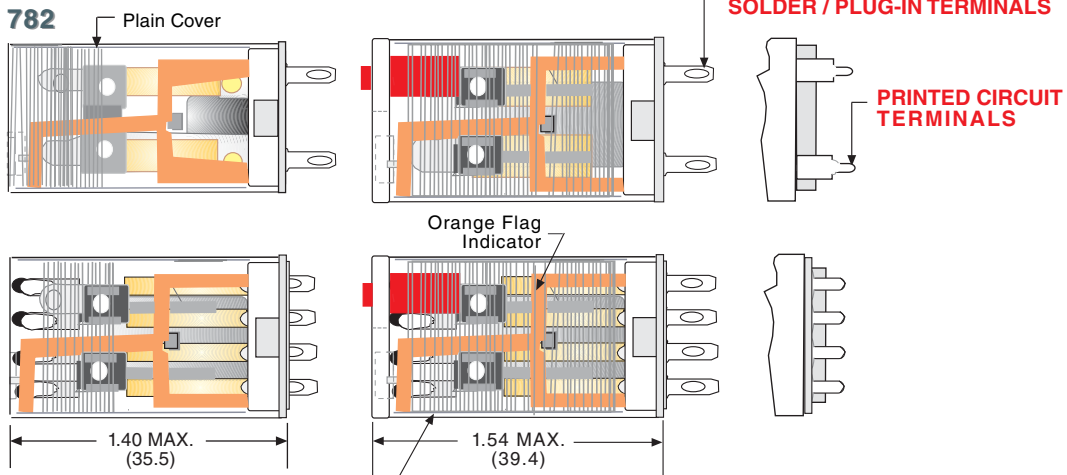
DPDT



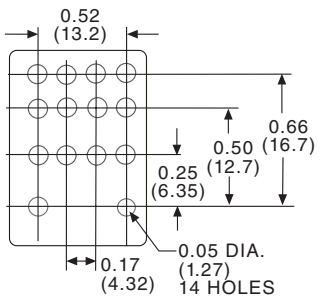
4PDT

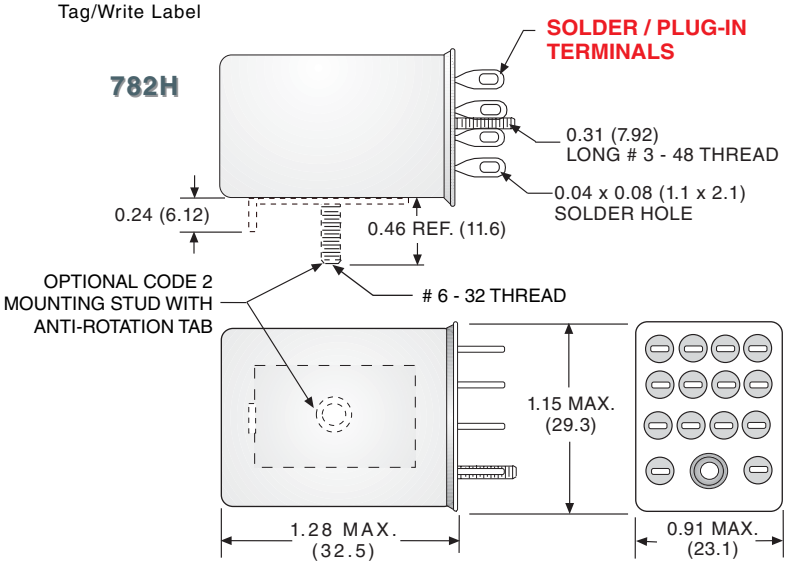
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)





CERTIFIED CLASS 1 DIVISION 2 FOR HAZARDOUS LOCATIONS

782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS

DPDT & 4PDT, 1, 3, 5 & 10 AMPS

ORDERING CODE

782	XDX					2		M4L	-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX,** 4PDT: **XDX**

CONTACT RATING (EXCEPT 782H):
3 AMP: **CODE 1**
10 AMP: **CODE 2**
3 AMP BIFURCATED CONTACT: **CODE 3**

HERMETICALLY SEALED (782H):
CODE H

OPTIONAL PLAIN COVER (EXCEPT 782H):
CODE C

TERMINALS STYLE (EXCEPT 782H):
QUICK CONNECT SOLDER/PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

CONTACT RATING (782H ONLY):
1 AMP BIFURCATED CONTACT: **CODE 32**
(SILVER CROSS BAR WITH GOLD OVERLAY)
3 AMP: **CODE 10** (SILVER GOLD FLASHED)
5 AMP: **CODE 21** (SILVER ALLOY)

TERMINALS & MOUNTING STYLE (782H ONLY):
SOLDER/PLUG-IN: **NO CODE**
STUD ON BROAD SIDE: **CODE 2**
STUD ON NARROW SIDE: **CODE 3**
STUD ON TOP SIDE: **CODE 4**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

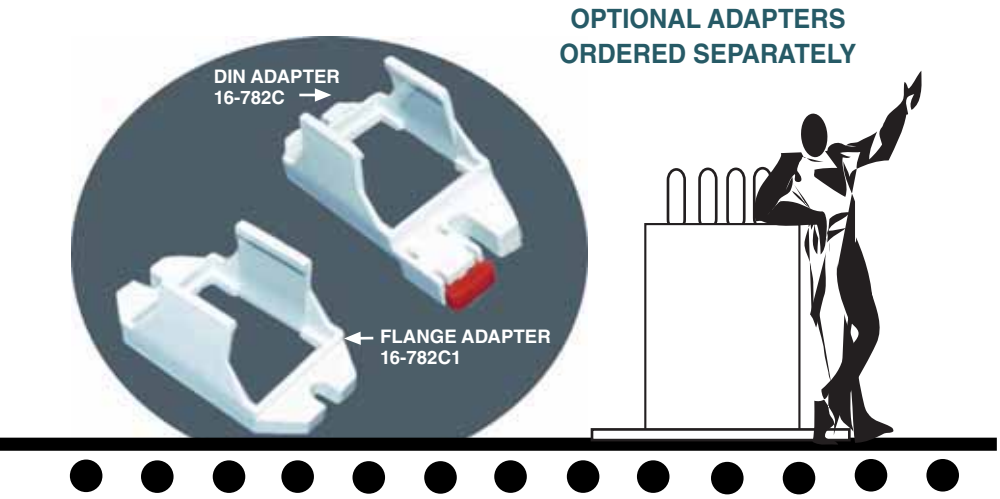
OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L** (OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24 ,48, 110 **ADD "D" FOR DC COILS**

782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAY

DPDT & 4PDT, 1, 3, 5 & 10 AMPS



Mating Sockets
70-461-1, SCREW/DIN
70-378-1: SOLDER
70-379-1: PRINTED CIRCUIT
See section 7

STANDARD PART NUMBERS					COIL MEASURED @ 25 °C	
FULL FEATURED	PLAIN COVER WITH FLAG		HERMETICALLY SEALED	FULL FEATURED	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
4PDT				DPDT		
SOLDER/PLUG -IN, BIFURCATED CONTACTS 3 AMP						
	DUAL MARKED					
	NEW PART NUMBER	SUPERCEDES				
	782XDX3C-12A	W78ATCSX-2			12 VAC, 50/60 Hz	46 Ω
782XDX3M4L-24A	782XDX3C-24A	W78ATCSX-3		782XBX3M4L-24A	24 VAC, 50/60 Hz	180 Ω
782XDX3M4L-120A	782XDX3C-120A	W78ATCSX-5		782XBX3M4L-120A	110/120 VAC, 50/60 Hz	4,430 Ω
782XDX3M4L-220/230A	782XDX3C-220/230A			782XBX3M4L-220/230A	220/230 VAC, 50/60 Hz	15,000 Ω
782XDX3M4L-240A	782XDX3C-240A	W78ATCSX-6		782XBX3M4L-240A	240 VAC, 50/60 Hz	15,700 Ω
	782XDX3C-6D	W78TCSX-1			6 VDC	
782XDX3M4L-12D	782XDX3C-12D	W78TCSX-2		782XBX3M4L-12D	12 VDC	160 Ω
782XDX3M4L-24D	782XDX3C-24D	W78TCSX-3		782XBX3M4L-24D	24 VDC	650 Ω
782XDX3M4L-110D	782XDX3C-110D	W78TCSX-5		782XBX3M4L-110D	110/125 VDC	11,000 Ω
SOLDER/PLUG -IN, CONTACTS 3 AMP						
	782XDX1C-12A	W78ACSX-2			12 VAC, 50/60 Hz	46 Ω
782XDX1M4L-24A	782XDX1C-24A	W78ACSX-3	782XDXH10-24A		24 VAC, 50/60 Hz	180 Ω
782XDX1M4L-120A	782XDX1C-120A	W78ACSX-5	782XDXH10-120A		110/120 VAC, 50/60 Hz	4,430 Ω
782XDX1M4L-220/230A	782XDX1C-220/230A				220/230 VAC, 50/60 Hz	15,000 Ω
782XDX1M4L-240A	782XDX1C-240A	W78ACSX-6			240 VAC, 50/60 Hz	15,700 Ω
	782XDX1C-6D	W78CSX-1			6 VDC	
782XDX1M4L-12D	782XDX1C-12D	W78CSX-2	782XDXH10-12D		12 VDC	160 Ω
782XDX1M4L-24D	782XDX1C-24D	W78CSX-3	782XDXH10-24D		24 VDC	650 Ω
782XDX1M4L-110D	782XDX1C-110D	W78CSX-6	782XDXH10-110D		110/125 VDC	11,000 Ω
SOLDER/PLUG -IN, CONTACTS 10 AMP						
782XDX2M4L-24A	782XDX2C-24A	W78KACSX-15		782XBX2M4L-24A	24 VAC, 50/60 Hz	180 Ω
782XDX2M4L-120A	782XDX2C-120A	W78KACSX-17	782XDXH21-120A	782XBX2M4L-120A	110/120 VAC, 50/60 Hz	4,430 Ω
782XDX2M4L-220/230A	782XDX2C-220/230A			782XBX2M4L-220/230A	220/230 VAC, 50/60 Hz	15,000 Ω
782XDX2M4L-240A	782XDX2C-240A	W78KACSX-18		782XBX2M4L-240A	240 VAC, 50/60 Hz	15,700 Ω
782XDX2M4L-12D	782XDX2C-12D	W78KCSX-12	782XDXH21-12D	782XBX2M4L-12D	12 VDC	160 Ω
782XDX2M4L-24D	782XDX2C-24D	W78KCSX-13	782XDXH21-24D	782XBX2M4L-24D	24 VDC	650 Ω
782XDX2M4L-110D	782XDX2C-110D			782XBX2M4L-110D	110/125 VDC	11,000 Ω
PRINTED CIRCUIT BIFURCATED CONTACTS 3 AMP						
	782XDX3CT-24A	W78APCX-3			24 VAC, 50/60 Hz	180 Ω
	782XDX3CT-120A	W78APCX-5			110/120 VAC, 50/60 Hz	4430 Ω
	782XDX3CT-12D	W78PCX-2			12 VDC	15700 Ω
	782XDX3CT-24D	W78PCX-3			24 VDC	160 Ω
	782XDX3CT-110D	W78PCX-6			110/125 VDC	11,000 Ω

NOTE: CLASS 782C IS AN ENHANCED VERSION OF THE 78, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.