

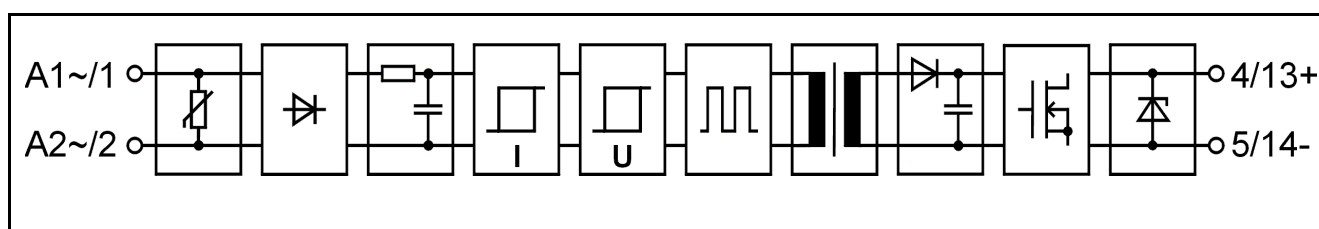
EXI 230CH

EXI-series plug-in input relay for hazardous locations

Main features

- Solid state input relay for hazardous locations
- Non-sparking device, type of protection nA
- cULus Listed HazLoc, ATEX, IECEx, CE (EMC and LVD)
- Integrated status LED
- Used with mechanical limit switches and also with long signal cables

Functional block diagram



Main specifications

Breakdown voltage I/O	minimum	4300	VAC rms
Air/creepage distances I/O	minimum	8	mm
Capacitance I/O	typical	3	pF
Material of the casing	PBT	UL 94V-0 (Sabic Innovative Plastics, Valox 420SEO)	
Colour of the casing		Gray	
Weight	typical	40	g
Temperature range:			
Storage	range	-40...+70	°C
Operation	range	-25...+70	°C

Electrical specifications ($T_A = 25\text{ °C}$)

Primary				Secondary			
Input voltage	nominal	230	VAC	Load voltage	nominal	28	VDC
Input current at nominal voltage	typical	4,6	mA	Load current	maximum	50	mA
	maximum	5	mA		Voltage drop at 50 mA load	typical	0,2
Switch-on voltage	typical	170	VAC	Switch-on delay		maximum	0,4
	maximum	190	VAC		typical	50	ms
Switch-off voltage	typical	110	VAC	Switch-off delay	maximum	-	ms
	minimum	80	VAC		typical	50	ms
				maximum	-	ms	
				Leakage current (off-state)	typical	1	μA

Ambient temperature (T_A) means the temperature immediate in vicinity of relays, where the air flow meets the relays.

Limitations

Ambient temperature (T_A)	Limitations
-25 °C...+40 °C	In vertical rail multi relay assembly there should be a gap in both sides at least 12,5 mm.
+40 °C...+55 °C	In multi relay assembly there should be always a gap in both sides at least 12,5 mm.
+55 °C...+70 °C	Vertical rail multi relay assembly is not allowed. Horizontal rail multi relay assembly is allowed when there is a gap in both sides at least 12,5 mm.

Derating when switching inductive loads

This relay is meant for PLC inputs and similar loads. A clamp diode with the load must be used when switching inductive loads.

Fusing

To protect relay against short circuit and overload a fast fuse with the correct rating for the load and the capacity of the relay should be chosen. Note that when overload current is not large it is possible that the fuse will not protect the relay because of the tolerance on the fuse rating.

Hazardous area installation

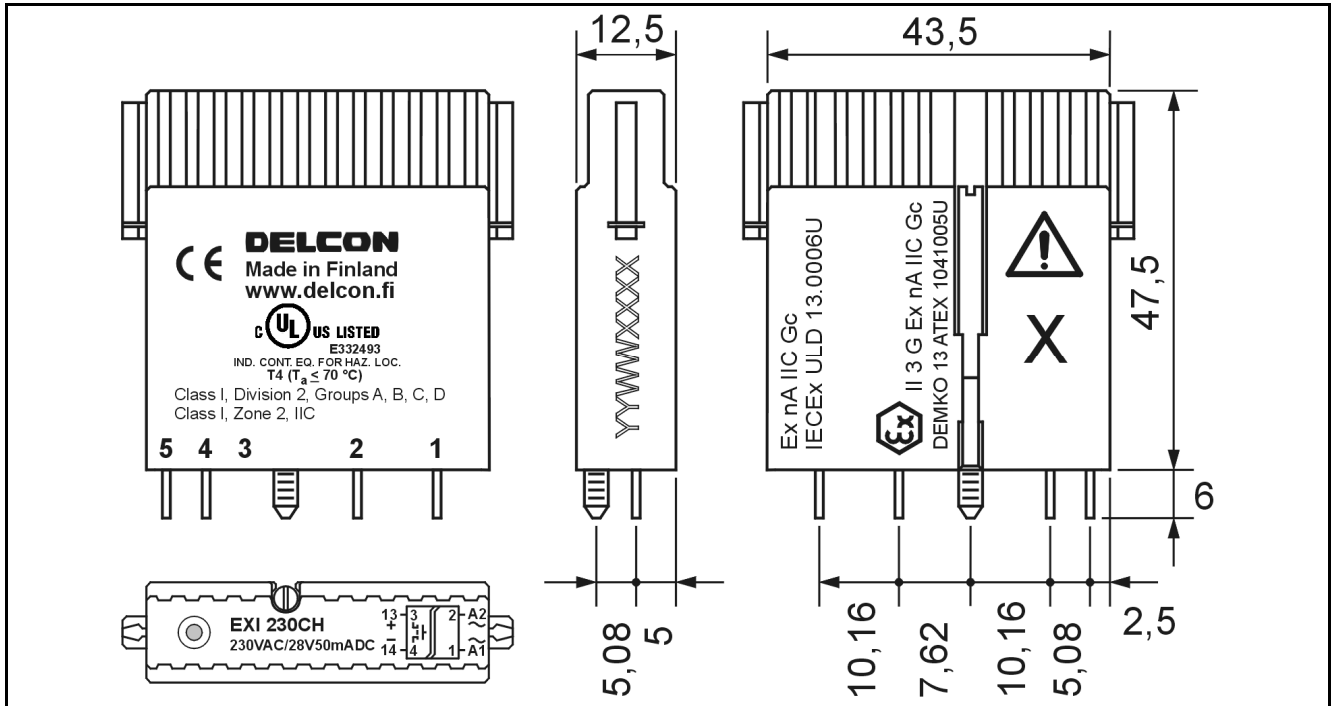
The Solid State Relays shall be installed in accordance with the ATEX directive 94/9/EC and this specification. The relay shall be installed within a suitable Ex-certified enclosure providing protection from impact, light, solid foreign objects and water ingress to a level of at least IP54. The relay shall be derated in accordance with this specification.

The relay shall only be installed to mounting sockets MIS 1EX, MIS 1NEX, MIS 1GEX, MIS 1GNEX, MIS 1CCEX, MIS 1CCNEX, MIS 1TEX and MIS 1TNEX. Fixing with the captive screw. The recommended installation is to the horizontal rail for better cooling of the relays.

Assembling in non-hazardous locations




All MIS 1... -mounting sockets, all MB/MBS 8/16... -mounting bases. See the assembly instructions from SL-relay specifications.

Mechanical dimensions



EXI 230CH (dimensions in mm, nominal). Markings can be located differently by production lot. Production lot number is marked to the relay (YY = year, WW = week, XXXX = lot number).

Approvals

 IND. CONT. EQ. FOR HAZ. LOC.	Class I, Division 2, Groups A, B, C, D Class I, Zone 2, IIC (when assembled to Ex-approved Delcon mounting socket) Certificate: E332493
ATEX	 II 3 G Ex nA IIC Gc (when assembled to Ex-approved Delcon mounting socket) Certificate: DEMKO 13 ATEX 1041005U
IECEX	Ex nA IIC Gc (when assembled to Ex-approved Delcon mounting socket) Certificate: IECEX ULD 13.0006U
	Fulfils main requirements of the EMC-directive 2004/108/EC. The secondary side of the relay has designed to operate up to specified low voltage levels, thus the relay does not comply with the high test voltages specified in the EN61000-4-5 standard. Fulfils requirements of the low voltage directive (LVD) 2006/95/EC.

Standards for Ex-approvals:

IEC 60079-0 - ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES. PART 0: GENERAL REQUIREMENTS - Edition 5 - Revision Date 2010/12/01

IEC 60079-15 - 2010-01 Edition: 4. Electrical apparatus for explosive gas atmospheres. Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus

CENELEC EN 60079-0 2009.08.01 Explosive atmospheres - Part 0: Equipment - General requirements

CENELEC EN 60079-15 2010.05.01 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

CSA C22.2 NO. 213 - NON-INCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I, DIVISION 2 HAZARDOUS LOCATIONS (1987 EDITION) - Edition 1 - Issue Date 1987/03/01

ISA 12.12.01 - NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I AND II, DIVISION 2, AND CLASS III, DIVISIONS 1 AND 2 HAZARDOUS (CLASSIFIED) LOCATIONS – Issue date 2011-08-08

Guarantee

This Ex -solid state I/O relay type made by Delcon Oy is guaranteed free from design and manufacturing defects for a period of 10 years from the manufacturing date. The guarantee liability is limited to replacement of defective material and related shipping charges. Defective products must be returned to the manufacturer for evaluation. This guarantee does not cover damage due to incorrect use or electrical overload.