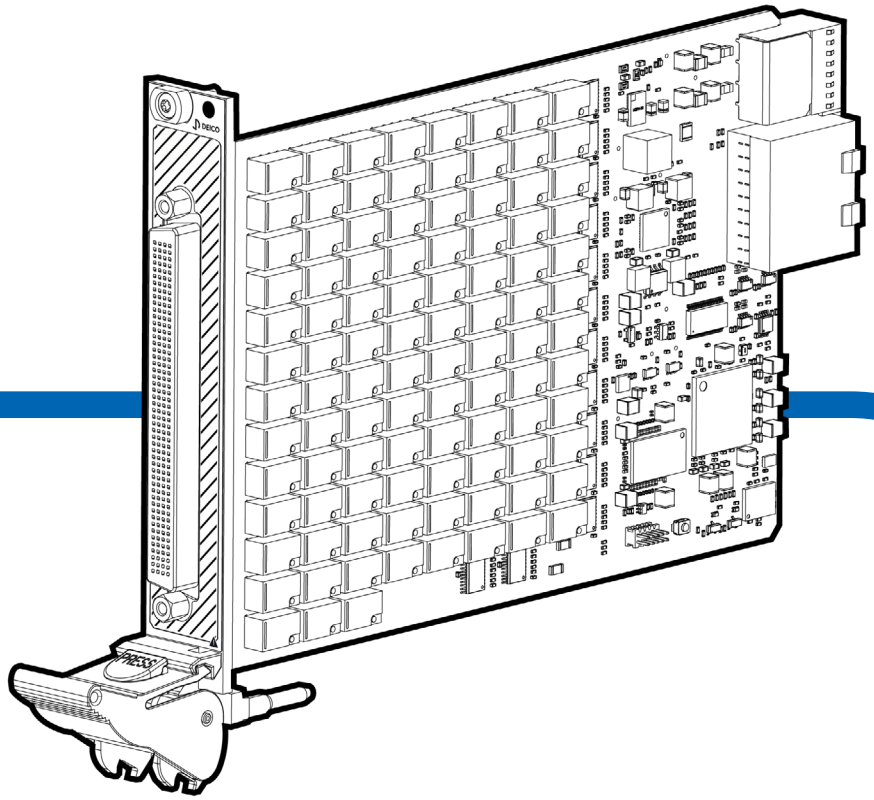
Datasheet



DE140300

PXIe Multiplexer Module

196 CH 1 A

DEICO

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1. Description

DE140300 PXIe Multiplexer Module 196 CH 1 A is a multiplexer module designed for high-density switching applications. It features 196x1 or 98x2 configurations with electromechanical relays, providing flexible switching capabilities. Each relay supports switching voltages of up to 220 V DC or 250 V AC and can handle power ratings of up to 60 W (DC) / 62.5 VA (AC). The module has a maximum current capacity of 1 A per channel. A PXIe chassis is required for operation.

1.1. Key Features

- 196 x 1 multiplexer configuration
- 98 x 2 multiplexer configuration
- Up to 220 V DC / 250 V AC
- Up to 60 W / 62.5 VA
- 1 A rated current
- Hot or cold switching
- Maximum 500 mΩ DC path resistance
- Maximum 5 ms relay operate time

2. Hardware Overview

2.1. Circuitry

The relay configuration diagram of the DE140300 module is shown in Figure 1.

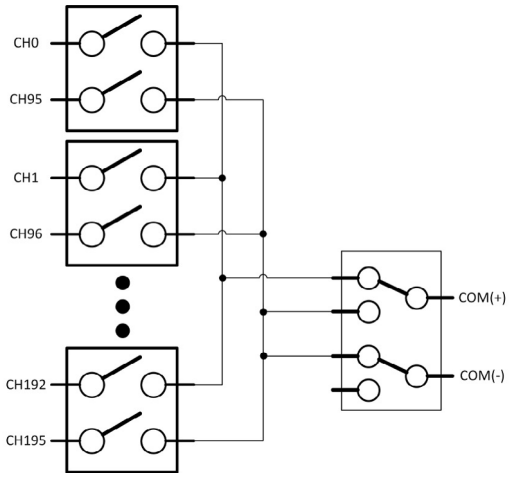


Figure 1: DE140300 Relay Configuration Diagram

2.2. Electrical

The power supply requirements of the DE140300 module are given in Table 1.

Table 1: Power Supply Requirements

Specification	Min	Typical	Max	Units
Power Supply Current of +12 V (In Full Operation)	–	–	1.65	A
Power Supply Current of +3.3 V (In Full Operation)	–	–	0.3	A

2.3. Relay Type

DE140300 is designed with electromechanical relays for reliable switching performance. The module's field maintenance is simplified as it utilizes through-hole relays, ensuring easy replacement and servicing. Relay placement is given in section "Relay Placement". The information on relays is given in Table 2.

Table 2: Information on Relays

Specification	Value
Manufacturer	TE Connectivity
Part Number	IM03TS
Relay Type	Electromechanical, latching
Relay Contact Material	Palladium-ruthenium, gold covered

The switching specification of the relay are given in Table 3.

Table 3: Relay Switching Specification

Specification	Min	Typical	Max	Units
Switch Voltage	10^{-4}	–	220 250	V DC V AC
Switch Current	10^{-6}	–	1	A
Switch Power	–	–	60 62.5	W VA
Thermal Offset	–	–	10^{-5}	V
DC Path Resistance	–	–	500	mΩ
Operate Time	–	1	5	ms
Bounce Time	–	1	5	ms
Relay Endurance				
At Contact Application (≤ 30 mV / ≤ 10 mA)	$2.5x10^{6}$	–	–	Operations
Resistive, 220 V DC / 0.27 A - 60 W	10^{5}	–	–	Operations
Resistive, 250 V AC / 0.25 A - 62.5 VA	10^{5}	–	–	Operations
Resistive, 30 V DC / 1 A - 30 W	$5x10^{5}$	–	–	Operations

2.4. Connectors

The DE140300 module's front connector is a 200-pin female LFH with part number 71718-2000. KinKuo 71719-3501 connector can be used as the mating connector. The pinout of the front connector is given in Table 5, in the "Signal Connections" section.

2.5. Physical

DE140300 is compatible with a single 3U PXIe peripheral slot.

2.6. Environmental

The environmental specifications of the module are given in Table 4.

Table 4: Environmental Specifications

Parameter	Condition	Value
Operating Humidity	Relative, non-condensing	10%- 90%
Storage Humidity	Relative, non-condensing	5%- 95%
Operating Temperature	Forced-air cooling from chassis	0 °C - +40 °C
Storage Temperature	–	-40 °C - +85 °C

2.7. PXIe Compliance

The DE140300 complies with PXIe Hardware Specification 1.1; however, the Local Bus, Trigger Bus, and Star Trigger are not implemented.

3. Signal Connections

3.1. Front Connector Pinout

DE140300 front connector pinout is given in Table 5. The view of front connector is given in Figure 2.

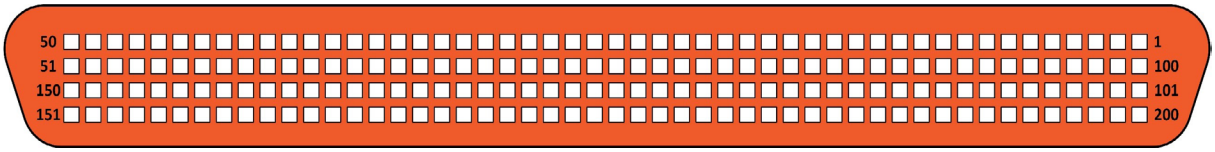


Figure 2: Front Connector

Table 5: Front Connector Pinout

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	CH_0	51	CH_36	101	CH_48	151	CH_84
2	CH_95	52	CH_131	102	CH_143	152	CH_179
3	CH_1	53	CH_37	103	CH_49	153	CH_85
4	CH_96	54	CH_132	104	CH_144	154	CH_180
5	CH_2	55	CH_38	105	CH_50	155	CH_86
6	CH_97	56	CH_133	106	CH_145	156	CH_181
7	CH_3	57	CH_39	107	CH_51	157	CH_87
8	CH_98	58	CH_134	108	CH_146	158	CH_182
9	CH_4	59	CH_40	109	CH_52	159	CH_88
10	CH_99	60	CH_135	110	CH_147	160	CH_183
11	CH_5	61	CH_41	111	CH_53	161	CH_89
12	CH_100	62	CH_136	112	CH_148	162	CH_184
13	CH_6	63	CH_42	113	CH_54	163	CH_90
14	CH_101	64	CH_137	114	CH_149	164	CH_185
15	CH_7	65	CH_43	115	CH_55	165	CH_91
16	CH_102	66	CH_138	116	CH_150	166	CH_186
17	CH_8	67	CH_44	117	CH_56	167	CH_92
18	CH_103	68	CH_139	118	CH_151	168	CH_187
19	CH_9	69	CH_45	119	CH_57	169	CH_93
20	CH_104	70	CH_140	120	CH_152	170	CH_188
21	CH_10	71	CH_46	121	CH_58	171	CH_94
22	CH_105	72	CH_141	122	CH_153	172	CH_189
23	CH_11	73	CH_47	123	CH_59	173	OUT+
24	CH_106	74	CH_142	124	CH_154	174	OUT-
25	CH_194	75	CH_191	125	CH_193	175	CH_190

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
26	CH_12	76	CH_24	126	CH_60	176	CH_72
27	CH_107	77	CH_119	127	CH_155	177	CH_167
28	CH_13	78	CH_25	128	CH_61	178	CH_73
29	CH_108	79	CH_120	129	CH_156	179	CH_168
30	CH_14	80	CH_26	130	CH_62	180	CH_74
31	CH_109	81	CH_121	131	CH_157	181	CH_169
32	CH_15	82	CH_27	132	CH_63	182	CH_75
33	CH_110	83	CH_122	133	CH_158	183	CH_170
34	CH_16	84	CH_28	134	CH_64	184	CH_76
35	CH_111	85	CH_123	135	CH_159	185	CH_171
36	CH_17	86	CH_29	136	CH_65	186	CH_77
37	CH_112	87	CH_124	137	CH_160	187	CH_172
38	CH_18	88	CH_30	138	CH_66	188	CH_78
39	CH_113	89	CH_125	139	CH_161	189	CH_173
40	CH_19	90	CH_31	140	CH_67	190	CH_79
41	CH_114	91	CH_126	141	CH_162	191	CH_174
42	CH_20	92	CH_32	142	CH_68	192	CH_80
43	CH_115	93	CH_127	143	CH_163	193	CH_175
44	CH_21	94	CH_33	144	CH_69	194	CH_81
45	CH_116	95	CH_128	145	CH_164	195	CH_176
46	CH_22	96	CH_34	146	CH_70	196	CH_82
47	CH_117	97	CH_129	147	CH_165	197	CH_177
48	CH_23	98	CH_35	148	CH_71	198	CH_83
49	CH_118	99	CH_130	149	CH_166	199	CH_178
50	NC	100	CH_195	150	NC	200	CH_192

3.2. Relay Placement

The cross-reference between the module's channels and the relays is given in Table 6. The relay placement of the module is given in Figure 3.

Table 6: Cross-Reference of Channels & Relays

Channel	Relay No	Channel	Relay No	Channel	Relay No
CH0 & CH95	K97	CH33 & CH128	K76	CH66 & CH161	K46
CH1 & CH96	K89	CH34 & CH129	K84	CH67 & CH162	K38
CH2 & CH97	K81	CH35 & CH130	K92	CH68 & CH163	K30
CH3 & CH98	K73	CH36 & CH131	K3	CH69 & CH164	K22
CH4 & CH99	K65	CH37 & CH132	K11	CH70 & CH165	K14
CH5 & CH100	K57	CH38 & CH133	K19	CH71 & CH166	K6
CH6 & CH101	K98	CH39 & CH134	K27	CH72 & CH167	K16
CH7 & CH102	K41	CH40 & CH135	K35	CH73 & CH168	K8
CH8 & CH103	K33	CH41 & CH136	K43	CH74 & CH169	K24
CH9 & CH104	K25	CH42 & CH137	K51	CH75 & CH170	K32
CH10 & CH105	K17	CH43 & CH138	K59	CH76 & CH171	K40
CH11 & CH106	K9	CH44 & CH139	K67	CH77 & CH172	K48
CH12 & CH107	K82	CH45 & CH140	K75	CH78 & CH173	K56
CH13 & CH108	K1	CH46 & CH141	K83	CH79 & CH174	K64
CH14 & CH109	K74	CH47 & CH142	K91	CH80 & CH175	K72
CH15 & CH110	K66	CH48 & CH143	K93	CH81 & CH176	K80

Channel	Relay No	Channel	Relay No	Channel	Relay No
CH16 & CH111	K58	CH49 & CH144	K85	CH82 & CH177	K88
CH17 & CH112	K50	CH50 & CH145	K77	CH83 & CH178	K95
CH18 & CH113	K42	CH51 & CH146	K69	CH84 & CH179	K7
CH19 & CH114	K34	CH52 & CH147	K61	CH85 & CH180	K15
CH20 & CH115	K26	CH53 & CH148	K53	CH86 & CH181	K23
CH21 & CH116	K18	CH54 & CH149	K45	CH87 & CH182	K31
CH22 & CH117	K10	CH55 & CH150	K37	CH88 & CH183	K39
CH23 & CH118	K2	CH56 & CH151	K29	CH89 & CH184	K47
CH24 & CH119	K4	CH57 & CH152	K21	CH90 & CH185	K55
CH25 & CH120	K12	CH58 & CH153	K13	CH91 & CH186	K63
CH26 & CH121	K20	CH59 & CH154	K5	CH92 & CH187	K71
CH27 & CH122	K28	CH60 & CH155	K94	CH93 & CH188	K79
CH28 & CH123	K36	CH61 & CH156	K86	CH94 & CH189	K87
CH29 & CH124	K44	CH62 & CH157	K78	CH190 & CH193	K96
CH30 & CH125	K52	CH63 & CH158	K70	CH191 & CH194	K90
CH31 & CH126	K60	CH64 & CH159	K62	CH192 & CH195	K49
CH32 & CH127	K68	CH65 & CH160	K54	COM	K99



Figure 3: Relay Placement

4. Safety Guidelines



Caution

ESD can damage electronic components without adequate protection and may cause permanent damage to the device.



Caution

Hot-plug is not supported by the DE140300; therefore, the device must not be inserted or removed when the chassis power is on.

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