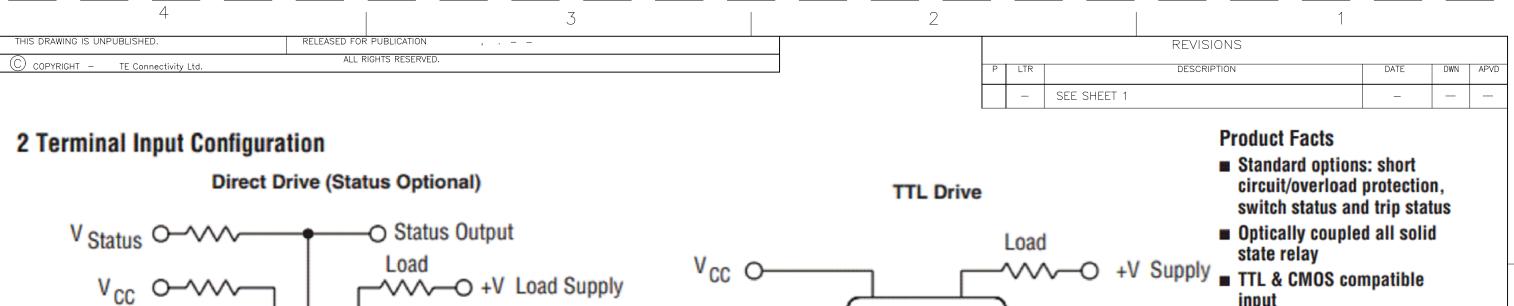
THIS DRAWING IS UNPUBLISHED **REVISIONS** ALL RIGHTS RESERVED (C) COPYRIGHT -TE Connectivity Ltd. DESCRIPTION DWN SEE SHEET 1 Environmental Characteristics Figure 1 - Maximum Input Current vs. Input Voltage Figure 2 - Series Resistance vs. Vcc Supply Voltage (Note 1) Electrical Specifications (-55°C to +105°C unless otherwise specified) Input (2 terminal configuration) Ambient Temperature Range — 3.8 - 32 Vdc (Notes 1 & 2, Figures 1 & 2) Operating — -55°C to +105°C Input supply voltage range (Vcc) 1500 Storage — -55°C to +105°C Input current (max.) @ 5Vdc 15mAdc (Notes 1 & 2, Figures 1 & 2) (MA) 12 (ohms) 1200 Must turn-on voltage 3.8Vdc Vibration Resistance nput Current Series 900 Must turn-off voltage 1.5Vdc 100 G's. 10-3.000 Hz -32Vdc Reverse voltage protection Shock Resistance — 600 α Input (3 terminal configuration) 50 G's, 11 ms pulse 0 - 18 Vd Control voltage range 300 **Constant Acceleration Resistance** 250uAdc @ 5V, 1mA @ 18V Control current (max.) 10 15 20 25 30 40 50 60 (Y1 axis) — 3.8 - 32 Vdc (Notes 1 & 2, Figures 1 & 2) 10 15 20 25 30 Input supply voltage range (Vcc) Input Voltage, Vcc (Vdc) Vcc (Volts) 5,000 G's 15mADC (Notes 1 & 2, Figures 1 & 2) Input current (max.) @ 5Vdc Figure 3 - Turn-on and Turn-off Timing Figure 4 - Output Status Timing Must turn-on voltage 0.3Vdc **Mechanical Characteristics** 3.2Vdc Must turn-off voltage Pin 14 (Input) Weight (approx.) — Low 1,000V rms Dielectric strength (min.) .176 oz. (5 grams) V_S 90% Pin 6-8 109 ohms Insulation resistance (min.) @ 500Vdc Materials — 10pF Capacitance (max.) 10% Header — KOVAR Status Status Output Cover — Nickel Turn-Off Turn-On Continuous load current (max.) @ 25°C 2.1Adc (Figure 7) Time Pins — KOVAR, gold plated Time 60Vdc Continuous load voltage (max.) Figure 5 - Status Resistor vs. Status Supply Voltage Figure 6 - On-Resistance vs. Temperature (Note 6) Transient blocking voltage (max.) 80Vdc (Note 5) Resistance Factor (NR) On resistance (max.) @ $T_i = 25$ °C, $I_L = 100$ mA 0.15 ohm (Note 6, Figure 6) 35000 2.0 Output voltage drop (max.) 0.5Vdc 30000 (ohms) Leakage current (max.) @ V = 60Vdc 100µAdc 1.6 Leakage current (max.) @ V = 60Vdc, with switch status 2mAdc 25000 Turn-on time (max.) 3 ms (Figure 3) 1.2 Resistor 20000 Turn-off time (max.) 1 ms (Figure 3) dv/dt (min.) 100V / µs 15000 -_{0.8} Ö Electrical system spike 600Vdc (Note 5) В Output chip junction temperature (max.) 125°C Status 0.6 10000 Normalized Thermal resistance (max.), junction to ambient 90°C/W 0.4 5000 25°C/W Thermal resistance (max.), junction to case 0.2 0.0 Status 10 20 125 25 1 - 18Vdc Status supply voltage range Status Supply Voltage (Volts) Junction Temperature (°C) Status current (max.) @ Vstatus ≤ 0.4Vdc 600µADC (Figure 5, Note 8) Status leakage current (max.) @ 16Vdc 10µAdc Status turn-on time (max.) 3.5 ms (Figure 4) 12SEP2019 THIS DRAWING IS A CONTROLLED DOCUMENT. Status turn-off time (max.) 8 ms (Figure 4) TE Connectivity 12SEP2019 **Short Circuit Protection** RV TOLERANCES UNLESS OTHERWISE SPECIFIED: DIMENSIONS: Current surge without tripping (max.), 100ms pulse 4.25Adc 12SEP2019 NAME APVD INCHES DS11 SERIES SOLID STATE RELAY 10Adc Overload trip current (max.), 0.5 ms pulse, V = 60Vdc 400us Trip time (typical), turning on into short APPLICATION SPEC Trip time (typical), shorting while relay is on 280µs SIZE CAGE CODE DRAWING NO RESTRICTED TO MATERIAL C-DS11-SERIES FINISH WEIGHT CUSTOMER DRAWING 1 of 3 1470-19 (1/15)



INPUT

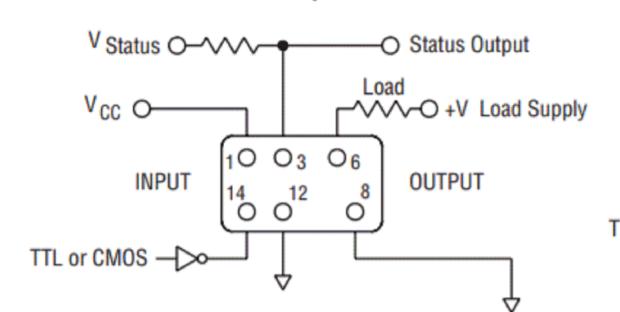
3 Terminal Input Configuration

INPUT

With Output Status

OUTPUT

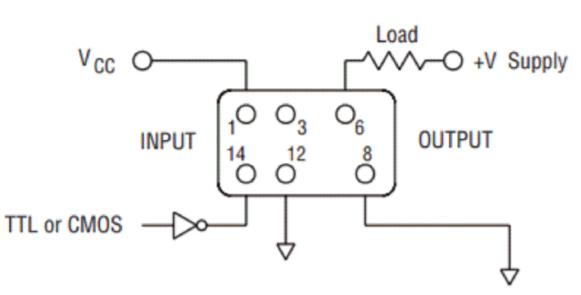
0 012



KILOVAC Part No	. DSCC Dwg. No.	Relay Version						
DS11-1Y	88062-008	Basic relay						
DS11-1000	88062-004	Relay w/ short circuit protection						
DS11-1001	88062-006	Relay w/ switch status						
DS11-1002	88062-002	Relay w/ short circuit protection and switch status						
DS11-1003	N/A	Relay w/ short circuit protection and trip status						

Without Output Status

0 012



- input
- Low on-resistance power MOSFET output
- Tested per MIL-PRF-28750D and approved to DSCC drawing 88062 with "Y" level screening



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			CHK 12SEP2019		TE Connectivity							
	DIMENSIONS: INCHES	TOLERANCES UNLESS OTHERWISE SPECIFIED:	APVD 12SEP2019	NAME	· · · · · · · ·							
		O PLC ± -	PRODUCT SPEC	1	DS11 SERIES SOLID STATE RELAY							
		1 PLC ± – 2 PLC ± –	_				_					
	Ψ	3 PLC ± - 4 PLC ± -	APPLICATION SPEC	SIZE	CAGE CODE	DRAWING NO				RESTRICTED TO		
J		ANGLES ±-	_		CAGE CODE					RESTRICTED TO		
	MATERIAL	FINISH	WEIGHT	A3	_	C -DS	11-SERI	ES		—		
	_	_	CUSTOMER DRAWING				scale NTS	SHEET	2 of 3	3 REV A		

OUTPUT

В

REVISIONS (C) COPYRIGHT -TE Connectivity Ltd DESCRIPTION SEE SHEET 1 Figure 7 - Temperature Derating Curve Figure 9 - Outline Dimensions Figure 8 - Maximum Surge Current Without Tripping .530 MAX .490 REF. $(6.93 \pm .50)$.140 (13.46)(12.44)(amps) -55°C Surge Current (amps) .200 (3.55).020 MAX. 6.0 (5.08)(.50)Current TOP MARKING 0 ⊚ **ORIENT AS** .890 MAX. 1.0 .500 4.0 0 (22.60) .600 (12.70) 0 SHOWN .850 REF. 0.8 (21.59)Output (15.24)0.6 0 +85°C 0 2.0 0.2 1.0L .190 MAX. .110 0.01 0.1 10 DATE CODE 20 40 60 0 (4.82)(2.79)Time (seconds) HERE Ambient Temperature (°C) .017 +.002, -.001 DIA. .300 (.43 + .05, -.02)(7.62)6 PLS. TOLERANCE: \pm 0.010 (0.25mm) FOR 2 PLACE DECIMALS, \pm 0.005 (0.13mm) FOR 3 PLACE DECIMALS. UNLESS OTHERWISE SPECIFIED Notes 1. 2 terminal input configuration is compatible with CMOS or open collector TTL (with pull-up resistor). For Vcc levels above 6Vdc, a series limiting resistor is required. See Fig. 2 for resistor value. Use standard resistor value equal to or less than value from the curve. 2. Input transitions to be ≤ 1ms duration, and input direct drive should be "bounceless contact" type. 3. Vcc = 5Vdc for all tests unless otherwise specified В 4. All DS11 Series relays may drive loads connected to either positive or negative referenced power supply lines. Reversing polarity of output may cause permanent damage. Inductive loads must be diode suppressed. 5. Transient blocking voltage and electrical system spike tests are performed per MIL-STD-704 (28VDC systems). 6. To determine the maximum on-resistance at any given junction temperature, multiply on-resistance at 25°C (0.15 ohm) by normalized on-resistance factor from curve (Fig. 6). 7. Overload testing per MIL-R-28750 is constrained to the limits imposed by the short circuit protection requirements of this specification and DSCC drawing 88062. Load circuit series inductance for "load shorted" mode of operation to be limited to 50mH max. Maximum repetition rate into a shorted load should not exceed 10 Hz. ALL DIMENSIONS ARE IN INCHES(MM) 8. Proper operation of the status feedback requires a status pull-up resistor. See Fig. 5 for status resistor value. 12SEP2019 THIS DRAWING IS A CONTROLLED DOCUMENT VM **S**TE TE Connectivity снк RV 12SEP2019 DIMENSIONS: TOLERANCES UNLESS 12SEP2019 NAME APVD DS11 SERIES SOLID STATE RELAY PRODUCT SPEC APPLICATION SPEC SIZE CAGE CODE DRAWING NO RESTRICTED TO MATERIAL C-DS11-SERIES

1470-19 (1/15)

CUSTOMER DRAWING

3 OF 3

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