

# Power Relays (Over 2A) Selector Chart

Order of products: Max. contact rating (small to large)

Category		Power Relays (Over 2A)				
Product name		S RELAY	LA RELAY (ALA)	LD-P RELAY (ALDP)	LK-T RELAY	NC RELAY
Type of relay						 
	mm inch					
Features		• 2a2b/3a1b/4a 4A polarized power relays	• TV-4 rated (High capacity type) • 2 Form A 3A/5A power relays	• 1 Form A 5A slim power relay	• TV-8 rated. • 1 Form A 5A power relays	• Transistor drive • 2c/4c 5A slim power relays
Sealed types availability		●	—	●	—	●
Latching types availability		●	—	—	—	—
Contact material (Optional material)		Au clad silver alloy (cadmium free)	AgNi type + Au clad	AgNi type	AgSnO <sub>2</sub> type	Au clad AgNi type
Contact rating chart Maximum (cos φ = 1)		30 A 20 A 15 A 10 A 8 A 5 A 3 A	3A 125V AC	5A 277V AC	5A 277V AC	2c: 5A 250V AC 4c: 4A 250V AC 5A 30V DC
Minimum (For Reference)		100μA 100mV DC	100mA 5V DC	100mA 5V DC	100mA 5V DC	100μA 1V DC
Max. switching voltage		48V DC, 250V AC	125V AC	277V AC	277V AC	250V AC
Contact arrangement		2a2b, 3a1b, 4a	2a	1a	1a	2c, 4c
Life (Min. operation)	Electrical	10 <sup>5</sup> (AC) 2 × 10 <sup>5</sup> (DC)	5 × 10 <sup>4</sup>	2 × 10 <sup>5</sup> (5A 125V AC) 10 <sup>5</sup> (5A 250V AC)	10 <sup>5</sup>	10 <sup>5</sup> (5A 250V AC) 5 × 10 <sup>5</sup> (5A 30V DC)
	Mechanical	10 <sup>8</sup>	10 <sup>6</sup>	5 × 10 <sup>6</sup>	10 <sup>6</sup>	(DC) 5 × 10 <sup>7</sup>
Break-down voltage	Between open contacts	750Vrms	1,000Vrms	750Vrms	1,000Vrms	1,000Vrms
	Between contacts sets	1,000Vrms	1,000Vrms	—	—	1,000Vrms
	Between contacts and coil	1,500Vrms	4,000Vrms	4,000Vrms	4,000Vrms	2,000Vrms
Surge withstand voltage		—	10,000V	10,000V	10,000V	—
Coil voltage		(DC) 3, 5, 6, 12, 24, 48V	(DC) 12, 24V	(DC) 5, 6, 9, 12, 18, 24V	(DC) 5, 9, 12, 24V	(DC) 3, 5, 6, 12, 24, 48, 100V
Nominal operating power		200mW	530mW	200mW	250mW	(2c) 360mW (4c) 720mW
Terminal layout (Bottom View) ●: coil terminal (.100 inch grid)						   
mm inch						
Safety standards		UL, CSA	UL, CSA, TÜV, VDE	UL/C-UL, VDE	UL/C-UL, TÜV, SEMKO, VDE	UL, CSA
Mounting method						

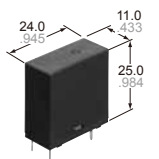
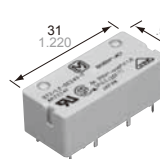
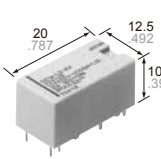
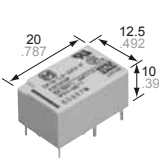
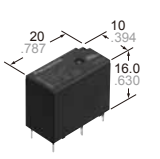
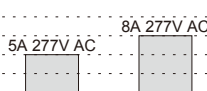

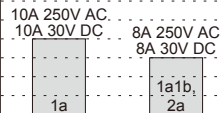
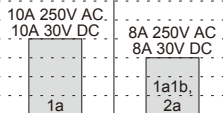
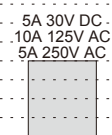





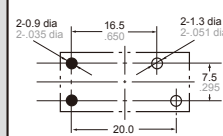
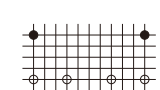
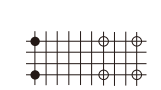
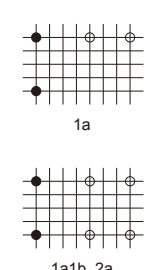
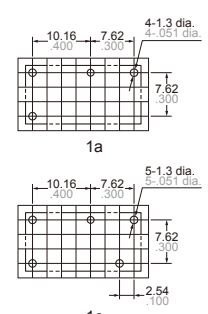





Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting






# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)				
Product name		PA RELAY	PQ RELAY	PF RELAY (APF)	DS-P RELAY	DW RELAY (ADW)
Type of relay						
	mm inch					
Features		• 1 Form A 5A slim power relay for interface	• 1 Form A 5A small size power relay for interface	• Compliant with European standards • 1a/1c 6A Slim power relays	• 1a 8A, 1a1b/2a 5A small polarized power relays	• 1 Form A 8A/16A, small polarized power relays (Latching type)
Sealed types availability		●	●	●	●	—
Latching types availability		—	—	—	●	● (Latching type only)
Contact material (Optional material)		Au clad AgNi type	Au clad AgNi type	AgNi type, Au plated AgNi type	Au flashed AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type
Contact rating chart Maximum (cos φ = 1)						
Minimum (For Reference)		100μA 100mV DC	100μA 100mV DC	1mA 1V DC (Au plating)	10mA 5V DC 10mA 5V DC	100mA 5V DC 100mA 5V DC
Max. switching voltage		110V DC, 250V AC	110V DC, 250V AC	250V AC	125V DC (0.2A), 250V AC	250V AC
Contact arrangement		1a	1a	1a, 1c	1a, 1a1b, 2a	1a
Life (Min. operation)	Electrical	10 <sup>5</sup> (3A 250V AC, 30V DC) 5 × 10 <sup>7</sup> (5A 250V AC, 30V DC)	2 × 10 <sup>5</sup> (5A 125V AC) 10 <sup>5</sup> (5A 250V AC)	5 × 10 <sup>4</sup> (N.O.) 3 × 10 <sup>4</sup> (N.C.)	10 <sup>5</sup>	5 × 10 <sup>4</sup>   2 × 10 <sup>4</sup>
	Mechanical	2 × 10 <sup>7</sup>	2 × 10 <sup>7</sup>	5 × 10 <sup>6</sup>	5 × 10 <sup>7</sup>	10 <sup>6</sup>
Break-down voltage	Between open contacts	1,000Vrms	1,000Vrms	1,000Vrms	1,000Vrms	1,000Vrms
	Between contacts sets	—	—	—	2,000Vrms (1a1b, 2a)	—
	Between contacts and coil	2,000Vrms	4,000Vrms	4,000Vrms	3,000Vrms	5,000Vrms
Surge withstand voltage		—	—	6,000V	5,000V	12,000V
Coil voltage		(DC) 5, 6, 9, 12, 18, 24V	(DC) 3, 5, 6, 9, 12, 18, 24V	(DC) 4.5, 5, 6, 9, 12, 18, 24, 48, 60V	(DC) 3, 5, 6, 9, 12, 24V	(DC) 3, 5, 6, 9, 12, 24V
Nominal operating power		120mW (5 to 18V DC) 180mW (24V DC)	200mW	170mW (4.5 to 24V DC) 217mW (48V DC) 175mW (60V DC)	300mW	200mW (1 coil latching type) 400mW (2 coil latching type)
Terminal layout (Bottom View) (100 inch grid)						
mm inch						
Safety standards		UL, CSA, TÜV	UL, CSA, VDE, TÜV	UL/C-UL, VDE	UL, CSA, TÜV	UL/C-UL, VDE
Mounting method						

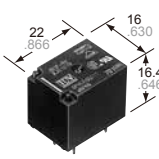
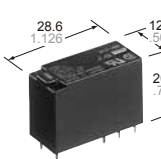
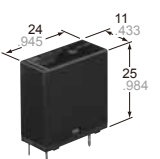
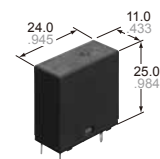
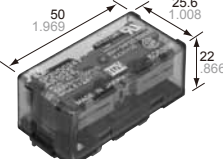
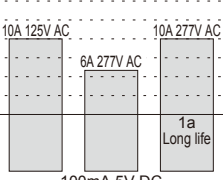
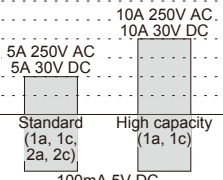
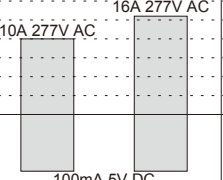
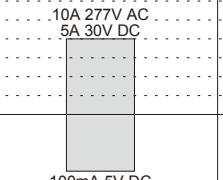
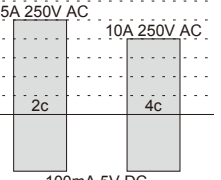
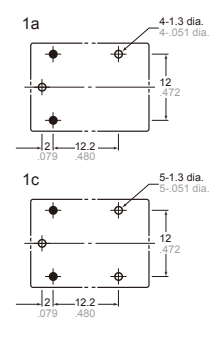
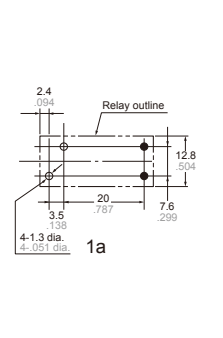
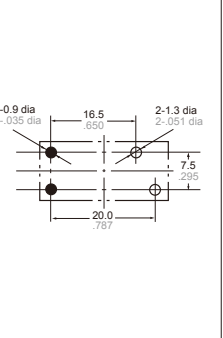
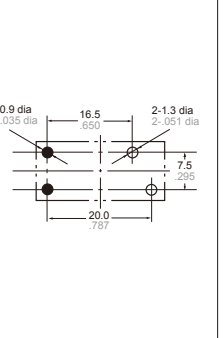
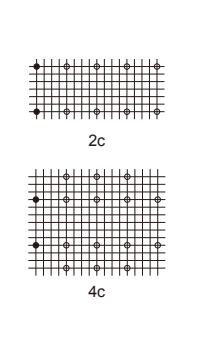





Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting






# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)				
Product name		LK-Q RELAY	ST RELAY	DE RELAY	DK RELAY	LQ RELAY (ALQ)
Type of relay						
	mm inch					
Features		<ul style="list-style-type: none"> <li>TV-5/TV-8 rated.</li> <li>1 Form A 5A/8A silent type power relays</li> </ul>	<ul style="list-style-type: none"> <li>1a1b/2a 8A polarized power relays</li> <li>TV-3 rated</li> </ul>	<ul style="list-style-type: none"> <li>Compliant with European standards</li> <li>1a1b 10A/8A polarized power relays</li> </ul>	<ul style="list-style-type: none"> <li>1a 10A, 1a1b/2a 8A small polarized power relays</li> </ul>	<ul style="list-style-type: none"> <li>1a/1c 10A small power relays</li> </ul>
Sealed types availability		—	●	●	●	●
Latching types availability		—	●	●	●	—
Contact material (Optional material)		AgSnO <sub>2</sub> type	Au flashed AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	Au flashed AgSnO <sub>2</sub> type Au flashed AgNi type	AgNi type
Contact rating chart Maximum (cos φ = 1)						
Minimum (For Reference)						
Max. switching voltage		277V AC	250V DC, 380V AC	30V DC, 250V AC	125V DC, 250V AC	30V DC, 250V AC
Contact arrangement		1a	1a1b, 2a	1a, 1a1b, 2a	1a, 1a1b, 2a	1a, 1c
Life (Min. operation)	Electrical	10 <sup>5</sup>	10 <sup>5</sup>	10 <sup>5</sup>	10 <sup>5</sup>	5 × 10 <sup>4</sup>
	Mechanical	10 <sup>6</sup>	10 <sup>7</sup>	10 <sup>7</sup>	5 × 10 <sup>7</sup>	10 <sup>7</sup>
Break-down voltage	Between open contacts	1,000Vrms	1,200Vrms	1,000Vrms	1,000Vrms	1,000Vrms (1a) 750Vrms (1c)
	Between contacts sets	—	2,000Vrms	4,000 Vrms (2a, 1a1b)	—	—
	Between contacts and coil	4,000Vrms	3,750Vrms	5,000Vrms	4,000Vrms	4,000Vrms
Surge withstand voltage		10,000V	6,000V	12,000V	10,000V	8,000V
Coil voltage		(DC) 5, 9, 12, 24V	(DC) 3, 5, 6, 9, 12, 24, 48V	(DC) 5, 12, 24V	(DC) 3, 5, 6, 9, 12, 24V	(DC) 5, 6, 9, 12, 18, 24V
Nominal operating power		250mW	approx. 240mW	200mW	200mW	200mW (1a) 400mW (1c)
Terminal layout (Bottom View) (100 inch grid)						
mm inch						
Safety standards		UL/C-UL, TÜV, SEMKO	UL, CSA, VDE	UL/C-UL, VDE	UL, CSA, TÜV, VDE	UL/C-UL, VDE
Mounting method						

Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting

# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)				
Product name		JS RELAY	JW RELAY	LK-G RELAY	LK-P RELAY	SP RELAY
Type of relay						
	mm inch					
Features		<ul style="list-style-type: none"> <li>• 1a/1c 10A cubic type power relays</li> <li>• TV-5 rated [1a, 1c (N.O.)]</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for power supply</li> <li>• 1a/1c/2a/2c/5A/10A power relays</li> <li>• TV-5 rated (1a type)</li> </ul>	<ul style="list-style-type: none"> <li>• 1mm .039inch contact gap. 1 Form A 10A/16A power relays</li> <li>• TV-5 rated</li> </ul>	<ul style="list-style-type: none"> <li>• 1 Form A 10A TV-5 rated power relays</li> </ul>	<ul style="list-style-type: none"> <li>• 2c 15A, 4c 10A polarized power relays</li> </ul>
Sealed types availability		● (1a, 1c)	●	—	—	—
Latching types availability		—	—	—	—	●
Contact material (Optional material)		AgSnO <sub>2</sub> type	1a: AgSnO <sub>2</sub> type 1c, 2a, 2c: AgNi type	AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	Stationary: Au flashed AgSnO <sub>2</sub> type Movable: AgSnO <sub>2</sub> type
Contact rating chart Maximum (cos φ = 1)						
Minimum (For Reference)		100mA 5V DC 1a Long life	100mA 5V DC Standard (1a, 1c, 2a, 2c) High capacity (1a, 1c)	100mA 5V DC	100mA 5V DC	100mA 5V DC
Max. switching voltage		100V DC(0.5A), 250V AC	30V DC, 250V AC	277V AC	30V DC, 277V AC	30V DC, 250V AC
Contact arrangement		1a, 1c, 1a (Long life type)	Standard: 1a, 1c, 2a, 2c High capacity: 1a, 1c	1a	1a	2c, 4c
Life (Min. operation)	Electrical	10 <sup>5</sup> 2 × 10 <sup>5</sup> (Long life type)	10 <sup>5</sup>	10 <sup>5</sup> (10A type) 5 × 10 <sup>4</sup> (16A type)	10 <sup>5</sup>	10 <sup>5</sup>
	Mechanical	10 <sup>7</sup>	5 × 10 <sup>6</sup>	2 × 10 <sup>6</sup>	2 × 10 <sup>6</sup>	5 × 10 <sup>7</sup>
Break-down voltage	Between open contacts	750Vrms	1,000Vrms	1,000Vrms	1,000Vrms	1,500Vrms
	Between contacts sets	—	3,000Vrms (2a, 2c)	—	—	3,000Vrms
	Between contacts and coil	1,500Vrms	5,000Vrms	4,000Vrms	4,000Vrms	3,000Vrms
Surge withstand voltage		—	10,000V	10,000V	10,000V	—
Coil voltage		(DC) 5, 6, 9, 12, 18, 24, 48V	(DC) 5, 6, 9, 12, 24, 48V	(DC) 5, 9, 12, 24V	(DC) 5, 9, 12, 24V	(DC) 3, 5, 6, 12, 24, 48V
Nominal operating power		360mW	530mW	530mW	530mW	300mW
Terminal layout (Bottom View) • coil terminal (.100 inch grid)						
mm inch						
Safety standards		UL, CSA, TÜV, VDE	UL, CSA, VDE	UL/C-UL, TÜV	UL, CSA, TÜV, SEMKO, VDE	UL, CSA, TÜV
Mounting method						

Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting

# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)				
Product name		DJ RELAY (ADJ)	JV-N RELAY	LE RELAY (ALE)	LZ RELAY (ALZ)	LF RELAY (ALF)
Type of relay						
	mm inch					
Features		• 1-pole/2-pole 16A polarized power relays	• Ideal for heater control • 1 Form A 16A, 10.9 mm .429 inch height flat power relays	• 1 Form A 16A power relay for micro wave oven • TV-5 rated	• Low profile: 15.7mm .618inch height • 1a/1c 16A power relay • TV-5 rated	• Ideal for air conditioner • 1 Form A 20A power relays • TV-8 rated
Sealed types availability		●	—	—	●	—
Latching types availability		●	—	—	—	—
Contact material (Optional material)		AgSnO <sub>2</sub> type    Au flashed AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type
Contact rating chart Maximum (cos φ = 1)						
Minimum (For Reference)		100mA 5V DC    100mA 5V DC	100mA 5V DC	100mA 5V DC	100mA 5V DC	100mA 5V DC
Max. switching voltage		250V AC	30V DC, 277V AC	277V AC	440V AC	250V AC
Contact arrangement		1a, 1b, 1c, 1a1b, 2a, 2b, 2c	1a	1a	1a, 1c	1a
Life (Min. operation)	Electrical	10 <sup>5</sup>	10 <sup>5</sup> (10A 125V AC) 10 <sup>5</sup> (10A 30V DC)	10 <sup>5</sup>	10 <sup>5</sup> (NO) 5 × 10 <sup>4</sup> (NC)	10 <sup>5</sup>
	Mechanical	5 × 10 <sup>6</sup>	2 × 10 <sup>7</sup>	2 × 10 <sup>6</sup>	10 <sup>7</sup>	2 × 10 <sup>6</sup>
Break-down voltage	Between open contacts	1,000Vrms	1,000Vrms	1,000Vrms	1,000Vrms	1,000Vrms
	Between contacts sets	2,000Vrms	—	—	—	—
	Between contacts and coil	4,000Vrms	2,500Vrms	4,000Vrms	5,000Vrms	5,000Vrms
Surge withstand voltage		10,000V	4,500V	10,000V	10,000V	10,000V
Coil voltage		(DC) 5, 6, 12, 24, 48V	(DC) 4.5, 6, 9, 12, 18, 24, 48, 100V	(DC) 5, 6, 9, 12, 18, 24, 48V	(DC) 5, 9, 12, 18, 24, 48V	(DC) 5, 6, 9, 12, 18, 24V
Nominal operating power		150mW (1 coil latching) 250mW (Single side stable, 2 coil latching)	200mW (4.5 to 48V DC) 600mW (100V DC)	400mW (Standard type) 200mW (High sensitive type)	400mW	900mW
Terminal layout (Bottom View) •: coil terminal (.100 inch grid)						
	mm inch			(TMP type are also available)		
Safety standards		UL/C-UL, VDE	UL, CSA, TÜV	UL, CSA, TÜV, VDE	UL/C-UL, VDE	UL/C-UL, TÜV, VDE
Mounting method						

Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting

# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)			
Product name		LF-G RELAY (ALFG)	DQ RELAY (ADQ)	HE RELAY	HE-S RELAY (AHES)
Type of relay					
	mm inch				
Features		<ul style="list-style-type: none"> <li>• Ideal for solar inverter</li> <li>• Compact size, 1 Form A 22A/33A</li> <li>• Contact gap: 1.5mm .059inch, 1.8mm .071inch power relays</li> </ul>	<ul style="list-style-type: none"> <li>• 1 Form A 30A polarized power relays</li> </ul>	<ul style="list-style-type: none"> <li>• TV-10/TV-15 rated</li> <li>• 1a 30A, 2a 20A power relays</li> </ul>	<ul style="list-style-type: none"> <li>• Compact size for energy management and industrial equipment</li> <li>• 2 Form A and 2 Form A 1 Form B 35A power relays</li> <li>• TV-8 rated</li> </ul>
Sealed types availability		—	●	—	—
Latching types availability		—	● (Latching type only)	—	—
Contact material (Optional material)		AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	AgSnO <sub>2</sub> type	Form A contact: AgSnO <sub>2</sub> type Form B contact: Au flashed AgNi type
Contact rating chart Maximum (cos φ = 1)					
Minimum (For Reference)		100mA 5V DC	100mA 5V DC	100mA 5V DC 100mA 5V DC	100mA 5V DC
Max. switching voltage		250V AC	250V AC	30V DC, 277V AC	Form A contact: 480V AC, 110V DC Form B contact: 277V AC, 30V DC
Contact arrangement		1a	1a	1a, 2a	2a, 2a1b
Life (Min. operation)	Electrical	3 × 10 <sup>4</sup> (Standard type)	10 <sup>4</sup>	2 × 10 <sup>5</sup> (1a: 30A 250V AC) 2 × 10 <sup>6</sup> (2a: 20A 250V AC)	3 × 10 <sup>4</sup> (Standard type: 35A 277V AC) 5 × 10 <sup>4</sup> (Long life type: 35A 277V AC)
	Mechanical	Contact gap 1.5mm .059inch: 10 <sup>6</sup> Contact gap 1.8mm .071inch: 5 × 10 <sup>5</sup>	10 <sup>6</sup>	DC: 10 <sup>7</sup> AC: 5 × 10 <sup>6</sup>	5 × 10 <sup>6</sup>
Break-down voltage	Between open contacts	2,500Vrms	1,500Vrms	2,000Vrms	Form A: 2,000Vrms Form B: 1,000Vrms
	Between contacts sets	—	—	4,000Vrms (2a)	5,000Vrms
	Between contacts and coil	4,000Vrms	4,000Vrms	5,000Vrms	Form A: 5,000Vrms Form B: 2,000Vrms
Surge withstand voltage		6,000V	10,000V	10,000V	10,000V (Between Form A contact and coil)
Coil voltage		(DC) 9, 12, 18, 24V	(DC) 4.5, 6, 9, 12, 24V	(AC) 12, 24, 48, 100/120, 200/240V (DC) 6, 12, 24, 48, 100, 110V	(DC) 6, 9, 12, 24, 48V
Nominal operating power		1,400mW	500mW (1 coil latching) 1,000mW (2 coil latching)	(AC) 1.7 to 2.7VA (DC) 1,920mW	1,880mW (after applying min.100ms coil nominal voltage) 170mW (30%V of coil holding voltage)
Terminal layout (Bottom View) ●: coil terminal (.100 inch grid)					
mm inch					
Safety standards		UL/C-UL, VDE	UL/C-UL	UL, CSA, VDE, TÜV	UL/C-UL, VDE
Mounting method					

Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting

# Power Relays (Over 2A) Selector Chart

Category		Power Relays (Over 2A)				
Product name		HE RELAY PV TYPE		DQ-M RELAY (ADQM)	DZ RELAY (ADZ)	
Type of relay						
	mm inch	35A	48A	90A		
Features		<ul style="list-style-type: none"> <li>Ideal for solar inverter</li> <li>Compact size, 1 Form A 35A/48A/90A power relays</li> </ul>		<ul style="list-style-type: none"> <li>1 Form A 60A power latching relays</li> </ul>	<ul style="list-style-type: none"> <li>For smart meters</li> <li>1 Form A 120A power latching relays</li> </ul>	
Sealed types availability		—		—	—	
Latching types availability		—		● (Latching type only)	● (Latching type only)	
Contact material (Optional material)		AgSnO <sub>2</sub> type (35A)	AgNi type (48A/90A)		AgNi type	AgSnO <sub>2</sub> type
Contact rating chart Maximum (cos φ = 1)						
Minimum (For Reference)		100mA 5V DC	100mA 5V DC	100mA 5V DC	100mA 24V DC	
Max. switching voltage		277V AC		250V AC	276V AC	
Contact arrangement		1a		1a	1a	
Life (Min. operation)	Electrical	3 × 10 <sup>4</sup> (35A type: 35A 277V AC, 48A type: 48A 277V AC) 1 × 10 <sup>4</sup> (90A type: 80A 277V AC)		10 <sup>3</sup> (60A 250V AC) 10 <sup>4</sup> (50A 250V AC)	10 <sup>3</sup> (120A 250V AC) 10 <sup>4</sup> (100A 276V AC)	
	Mechanical	10 <sup>7</sup> (35A/48A) 10 <sup>5</sup> (90A)		10 <sup>5</sup>	10 <sup>5</sup>	
Break-down voltage	Between open contacts	2,000Vrms		1,500Vrms	2,000Vrms	
	Between contacts sets	—		—	—	
	Between contacts and coil	5,000Vrms		4,000Vrms	4,000Vrms	
Surge withstand voltage		10,000V		10,000V	12,000V	
Coil voltage		(DC) 6, 9, 12, 24V		(DC) 4.5, 6, 9, 12, 24V	(DC) 5, 12, 24V	
Nominal operating power		1,920mW		500mW (1 coil latching) 1,000mW (2 coil latching)	1,400mW (1 coil latching) 2,800mW (2 coil latching)	
Terminal layout (Bottom View) (100 inch grid)					—	
mm inch						
Safety standards		UL, CSA, VDE	UL/C-UL, VDE	UL/C-UL	—	VDE
Mounting method					—	

Note: Meaning of symbol marks : PC board terminal; : Plug-in; : Top-mounting; : Top-mounting with PC board terminals; : Surface-mounting