

8

릴레이류 RELAYS

8-1 소형 파워 릴레이
8-2 콘트롤 릴레이
8-3 파워 릴레이
8-4 자기유지형 릴레이
(전력용 보조 계전기)

8-1 Mini Power Relay
8-2 Control Relay
8-3 Power Relay
8-4 Keep Relay
(Auxiliary Relay for Electric Power)

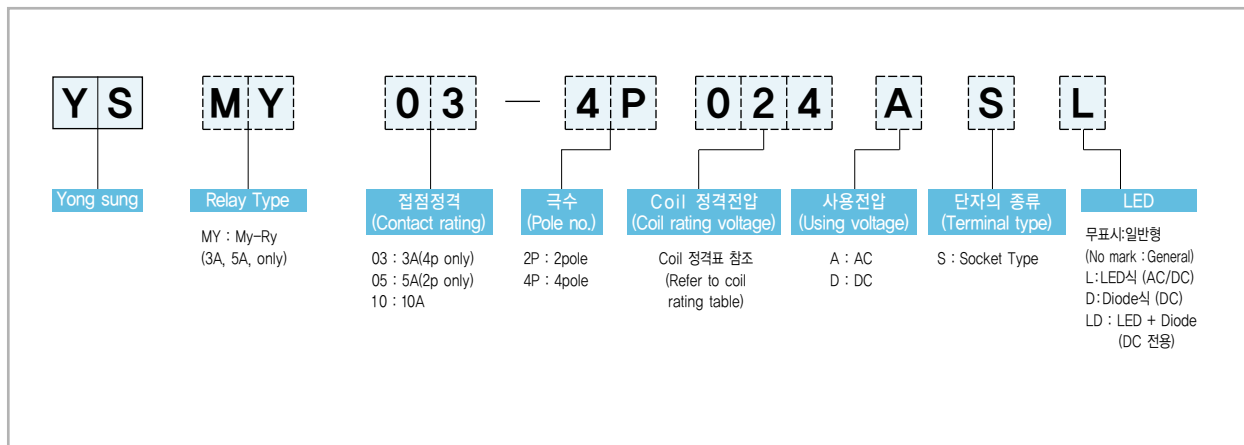
8-1

소형 파워 릴레이 Mini Power Relay

■  File No. E200434



형식 구분도 | Type Classification Diagram |



특징 | Features |

- 소형경량이므로 복잡한 제어회로에 적합합니다.
- 소형으로서 개폐용량이 높습니다.
- 소전류 소모형으로 DC용은 반도체 회로에 적합합니다.
- 종류가 다양하므로 용도별 선택이 용이합니다.
- With mini-size and lightness, it is suitable for complicated control circuit.
- High switching capacity and small size.
- Suitable for semiconductor circuit due to lower current consumption.
- Various types are available.

성능 개요 | Performance Summary |

항 목 (Item)		성 능 (Performance)
접촉저항 (Contact resistance)		below 50mΩ (Initial value)
절연저항 (Insulation resistance)		above 100MΩ (DC 500V, Meg)
내전압 (Withstand voltage)	접점상호간 (Between contacts)	AC 1,000V/min
	충전부와 비충전부간 (Between charging part and non-charging part)	AC 2,000V/min
수 명 (Lifetime)	기계적 (Mechanical)	above 3,000,000times
	전기적 (Electrical)	above 500,000times
동작시간 (Operating time)		below 20ms
복귀시간 (Return time)		below 20ms
내진동 (Withstand vibration)		10~55Hz double amplitude 1.0mm
최대개폐빈도 (Max. Switching frequency)	기계적 (Mechanical)	20 times/min
	전기적 (Electrical)	20 times/min
사용주위온도 (Ambient temperature)		-25℃ ~ +40℃
상대습도 (Relative humidity)		MAX. 90%

코일 정격 | Coil Rating |

	정격전압(V) (Rating voltage)	정격전류(mA) (Rating current)	COIL 저항(Ω) (Coil resistance)	소비전력(VA,W) (Power Consumption)	동작전압(V) (Operation voltage)	복귀전압(V) (Return voltage)	최대허용전압(V) (Max. allowable voltage)
AC	24	50	167	1.2VA	below 80%	above 30%	110%
	110	12	3,600	1.3VA			
	220	8	12,500	1.6VA			
DC	24	48	480	1.2W		above 10%	
	48	23	1,760	1.2W			
	110	11	10,080	1.2W			
	125	10	12,450	1.2W			
	220	6.8	33,450	1.4W			

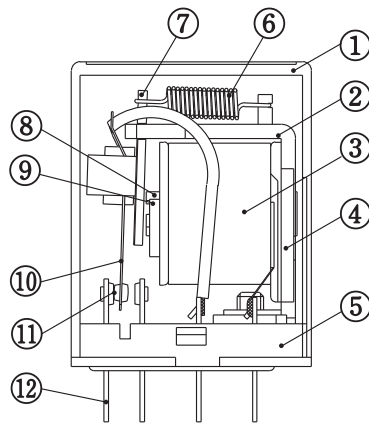
- ※ 주 1. 정격전류의 허용범위 (23℃일때) : ±15%
 2. Coil 저항의 허용범위 (23℃일때) : ±10%
 3. LED Type은 회로에 따라 반불이 발생될 수 있으니 사용전 검토 바랍니다.

- ※ Note 1. Allowable range of rating current (at 23℃) : ±15%
 2. Allowable range of coil resistance (at 23℃) : ±10%
 3. Preliminary examination recommended due to possible dimness phenomena depending on circuit for LED type.

접점 정격 | Contact Rating |

구 분 (Classification)	극 수 (Pole No.)	접점허용전력 (Contact Allowable Power)		전압(V) (Voltage)	정격부하 (Rating load)		정격통전전류(A) (Rating conductive current)
		저항부하 (Resistance load)	유도부하 (Inductive load)		저항부하 (Resistance load) (COSØ=1)	유도부하 (Inductive load) (COSØ=0.4, L/R=7ms)	
MY03	4	AC660VA	AC176VA	AC220V	3	0.8	3
		DC72W	DC36W	DC24V	3	1.5	
MY05	2	AC1100VA	AC440VA	AC220V	5	2	5
		DC120W	DC48W	DC24V	5	2	

내부 구조도 | Inside Structure Diagram |



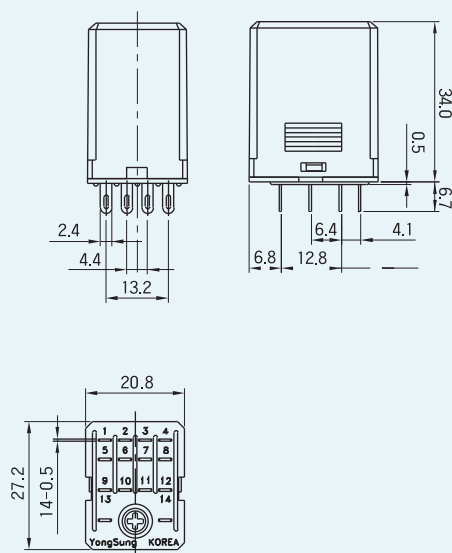
No.	부 품 (Part)	재 질 (Materials)
1	Cover	PC 수지 (Polycarbonate Resin)
2	Frame	탄소강 (Carbon Steel)
3	Coil	구리선 (Polyurethane Copper Wire)
4	Bobbin	66 나일론 (66 Nylon)
5	Base	PBT Resin
6	Return Spring	스테인리스 (Stainless Steel)
7	Amature	순철 (Pure Iron)
8	Washer plate	동판 (Plate Copper)
9	Shaft	순철 (Pure Iron)
10	Moving Terminal	인천동 (Phosphor Bronze)
11	Contact	은접점 (Ag)
12	Fixed Terminal	황동 (Brass)

외형 / 치수도

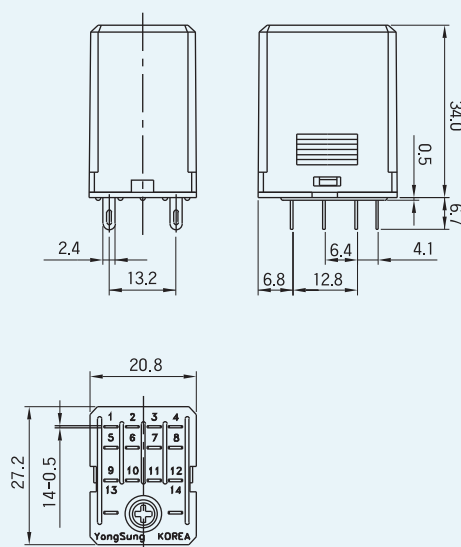
| Shape / Dimension Drawing |

(unit : mm)

YSMY03-4P

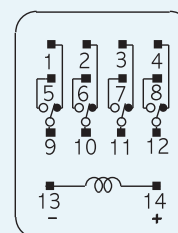


YSMY05-2P



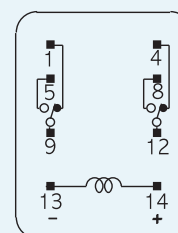
내부 결선도

| Inside Connection Diagram |



YSMY03-4P

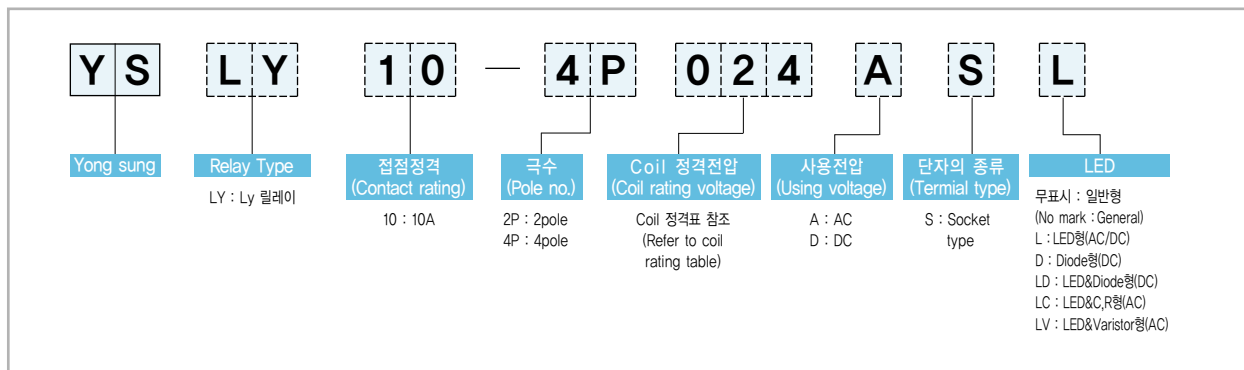
적용소켓 : YSSKMY-4
(Applied socket : YSSKMY-4)



YSMY05-2P

적용소켓 : YSSKMY-2
(Applied socket : YSSKMY-2)

형식 구분도 | Type Classification Diagram |



특징 | Features |

- LED 내장형, 다이오드 내장형, VARISTOR 내장형, C·R회로 내장형 등 다양한 종류의 선택이 가능합니다.
- 소형 경량이므로 복잡한 제어회로에 적용 가능합니다.
- Various built-in type is available. (LED, Diode, Varistor, C,R circuit)
- Light and small-sized type for applying to complicated control circuit.

사용상의 주의사항 | Remark in Use |

- DC용은 결선 시 극성에 유의하십시오.
- DC 정격은 완전 직류치를 표시한 것입니다.
- Double-check with polarity when wiring for DC use.
- DC rating indicates constant-direct current value.

성능 개요 | Performance Summary |

접촉저항 (Contact resistance)		50mΩ 이하 (초기치)
절연저항 (Insulation resistance)		100MΩ 이상 (DC 500V Meg)
내전압 (Withstand voltage)	단자상호간 (Between contact)	AC 1,000V/Min (50~60Hz)
	단자와 절연물간 (Between charging part and non-charging part)	AC 2,000V/Min (50~60Hz)
기계적 수명 (Mechanical lifetime)		above 3,000,000times
전기적 수명 (Electrical lifetime)		above 200,000times
동작시간 (Operating time)		below 20ms
복귀시간 (Return time)		below 20ms
내진동 (Withstand vibration)		10~55Hz double amplitude 1.0mm
최대개폐빈도 (Max. Switching frequency)	기계적 (Mechanical)	300 times/min
	전기적 (Electrical)	30 times/min
사용주위온도 (Ambient temperature)		-25℃ ~ +40℃
상대습도 (Relative humidity)		45 ~ 85%

코일 정격 | Coil Rating |

	정격전압(V) (Rating voltage)	정격전류(mA) (Rating current)		COIL 저항(Ω) (Coil resistance)	소비전력(VA, W) (Power Consumption)		동작전압(V) (Operation voltage)	복귀전압(V) (Return voltage)	최대허용전압(V) (Max. allowable voltage)
AC	24	93.6	80	78	2.25	1.92	below 80%	above 30%	110%
	100/110	22.5/25.5	19.0/21.8	1,800	2.25/2.81	1.90/2.40			
	200/220	12.5/14.3	11.8/13.4	6,700	2.50/3.15	2.36/2.95			
DC	24	69		350	1.66			above 10%	
	48	30		1,600	1.44				
	110	15.9		6,900	1.75				
	125	12.0		10,400	1.50				
	220	6.9		32,000	1.52				

- ※주 1. 정격전류의 허용범위는 20℃에서 +15%, -20%입니다.
 2. 코일저항은 허용범위는 20℃에서 ±15%입니다.
 3. 코일특성은 20℃에서의 수치입니다.
 4. 상기 수치는 일반형에 대한 코일정격입니다.

- ※Note 1. Allowable range of rated current (at 20℃) : +15%, -20%
 2. Allowable range of coil resistance (at 20℃) : ±15%
 3. Coil characteristic is specified at 20℃.
 4. Above data indicates coil resistance based on general type.

접점 정격 | Contact Rating |

정격 절연전압(Ui) (Rating insulation voltage)			AC 250V, DC 250V		
정격 통전전류(Ith) (Rating conductive current)			10A		
최대 개폐전류 (Max. switching current)			10A		
교류 (AC)	정격 전압(Ue) (Rating voltage)		24V	110V	220V
	정격 전류(Ie) (Rating current)	저항부하 (Resistance load) cosØ = 1	10A	10A	5A
		유도부하 (Inductive load) cosØ = 0.4	10A	7.5A	3.75A
	최대 개폐용량 (Max. Switching capacity)	저항부하 (Resistance load) cosØ = 1	1,100VA		
		유도부하 (Inductive load) cosØ = 0.4	825VA		
직류 (DC)	정격 전압(Ue) (Rating voltage)		24V	110V	220V
	정격 전류(Ie) (Rating current)	저항부하 (Resistance load)	10A	2.2A	1.1A
		유도부하 (Inductive load) L/R = 7ms	5A	1.1A	0.54A
	최대 개폐용량 (Max. Switching capacity)	저항부하 (Resistance load)	240W		
		유도부하 (Inductive load) L/R = 7ms	120W		

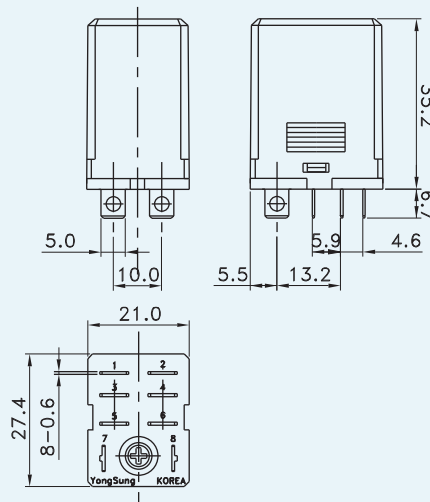
- ※주 1. 개폐전류의 최대치는 10A입니다.

- ※Note 1. Maximum switching current is 10A.

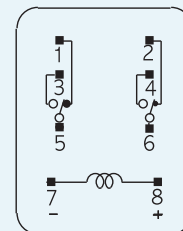
외형 / 치수도 | Shape / Dimension Drawing

(unit : mm)

YSLY10-2P



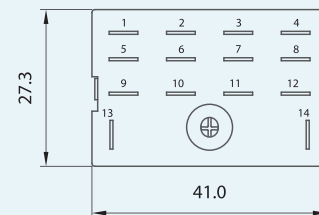
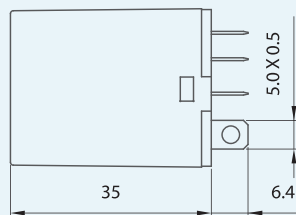
내부 결선도
(Inside Connection Diagram)



YSLY10-2P

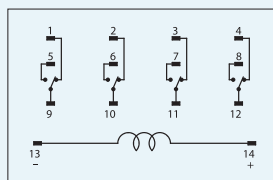
적용소켓 : YSSKLY-2
(Applied socket : YSSKLY-2)

YSLY10-4P

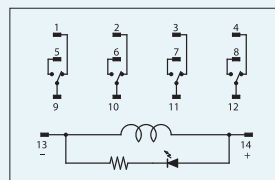


내부 결선도 | Inside Connection Diagram

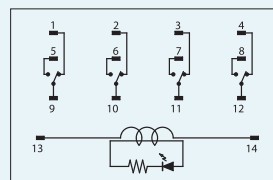
YSLY10-4P



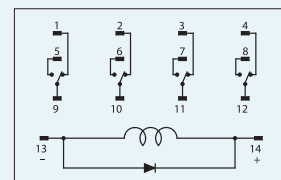
YSLY10-4P L(DC)



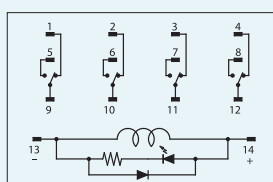
YSLY10-4P L(AC)



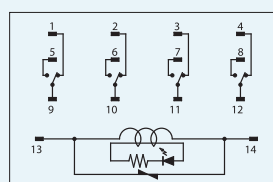
YSLY10-4P D(DC)



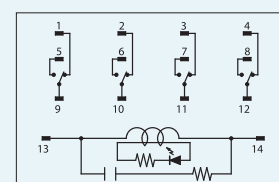
YSLY10-4P LD(DC)



YSLY10-4P LV(AC)



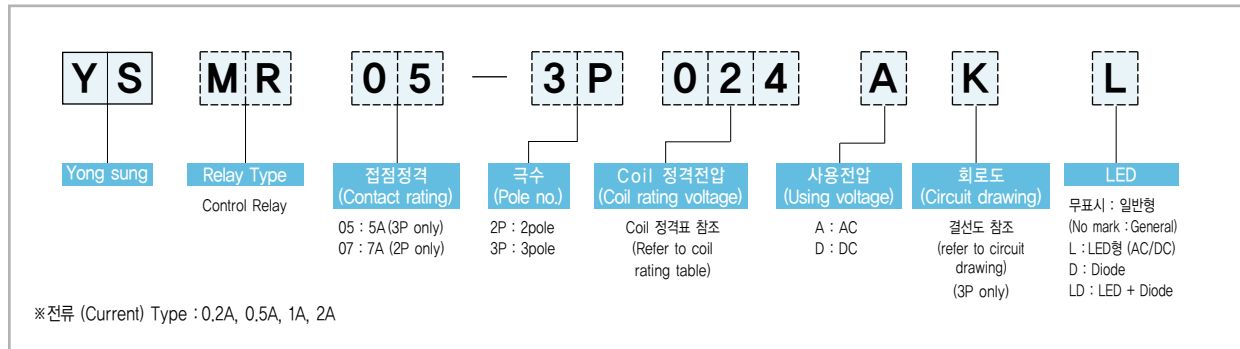
YSLY10-4P LC(AC)



8-2

콘트롤 릴레이
Control Relay■  File No. E200434

형식 구분도 | Type Classification Diagram |



특징 | Features |

- 외형은 소형이면서도 7A의 부하를 개폐할 수 있어 일반제어회로에 널리 사용할 수 있습니다.
- 적용전압(코일전압)의 선택의 폭이 넓어 회로구성이 용이합니다.
- 교환이 용이합니다.
- 기계적 수명이 500만회 이상으로 오래도록 사용할 수 있습니다.
- As even with mini type can switch 7A load, it can be widely used for general control circuit.
- Easy to compose circuit due to wide range of rating voltage.
- Easy replacement.
- With above 5 million times of mechanical lifetime, it can be long used.

성능 개요 | Performance Summary |

접촉저항 (Contact resistance)		below 50mΩ (Initial value)
절연저항 (Insulation resistance)		above 100MΩ (DC 500V, Meg)
내전압 (Withstand voltage)		AC 2,000V/min / AC 1,000V/min (접점간) Between contacts
수 명 (Lifetime)	기계적 (Mechanical)	above 5,000,000times
	전기적 (Electrical)	above 500,000times
동작시간 (Operating time)		AC below 20ms DC below 30ms
복귀시간 (Return time)		below 20ms
내진동 (Withstand vibration)	오동작 (Malfunction)	10~55Hz double amplitude 1.0mm
	내구 (Endurance)	10~55Hz double amplitude 1.5mm
내충격 (Withstand impact)	오동작 (Malfunction)	100m/S ² (about 10G)
	내구 (Endurance)	500m/S ² (about 50G)
최대개폐빈도 (Max. Switching frequency)	기계적 (Mechanical)	20 times/min
	전기적 (Electrical)	20 times/min
사용주위온도 (Ambient temperature)		-25℃ ~ +40℃
상대습도 (Relative humidity)		45 ~ 85%

코일 정격 | Coil Rating |

	정격전압(V) (Rating voltage)	정격전류(mA) (Rating current)	COIL 저항(Ω) (Coil resistance)	소비전력(VA,W) (Power Consumption)	최대연속인가전압 (Max. continuous applied voltage)	최소동작전압 (Min. operational Voltage)	복귀전압 (Return Voltage)
AC	24	88	100	2.3VA	110%	below 80%	above 30%
	110	21	2,000	2.2VA			
	220	11	8,120	2.3VA			
DC	24	85	280	2.0W	110%	below 80%	above 10%
	48	36	1,330	1.8W			
	110	14	8,150	1.6W			
	125	11	11,420	1.4W			
	220	8.8	23,210	2.0W			

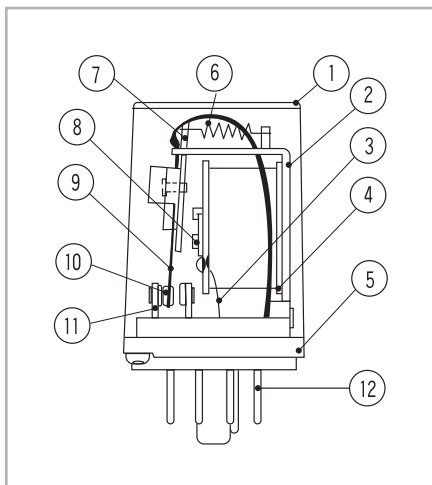
- ※주 1. 정격전류의 허용범위 (23℃일때) : (mA)±15%
 2. Coil 저항의 허용범위 (23℃일때) : (Ω)±10%

- ※Note 1. Allowable range of rating current (at 23℃) : (mA)±15%
 2. Allowable range of coil resistance (at 23℃) : (Ω)±10%

접점 정격 | Contact Rating |

구 분 (Classification)	최대접점용량 (Max. Contact Capacity)					정격통전전류(A) (Rating conductive current)
	접점허용전력 (Contact Allowable Power)		전압(V) (Voltage)	정격부하 (Rating load)		
	저항부하 (Resistance load)	유도부하 (Inductive load)		저항부하 (Resistance load) (COSØ=1)	유도부하 (Inductive load) (COSØ=0.4, L/R=7ms)	
MR07	AC1540VA	AC660VA	AC220V	7	3	7
	DC120W	DC96W	DC24V	5	4	
MR05	AC1100VA	AC440VA	AC220V	5	2	5
	DC72W	DC60W	DC24V	3	2.5	

내부 구조도 | Inside Structure Diagram |



No.	부품명 (Part Names)	재질 (Materials)
1	Cover	수지 (Polycarbonate Resin)
2	Frame	탄소강 (Carbon Steel)
3	Coil	구리선 (Copper Wire)
4	Bobbin	66 나일론 (Nylon 66)
5	Plug	PBT Resin
6	복귀 Spring (Return Spring)	스테인리스 (Stainless Steel)
7	Amature	순철 (Pure Iron)
8	Shaft	순철 (Pure Iron)
9	유동단자 (Swing Terminal)	인천동 (Phosphor Bronze)
10	접 점 (Contact)	은접점 (Ag)
11	고정단자 (Fixed Terminal)	황동 (Brass)
12	리드단자 (Lead Terminal)	황동 (Brass)

외형 / 치수도

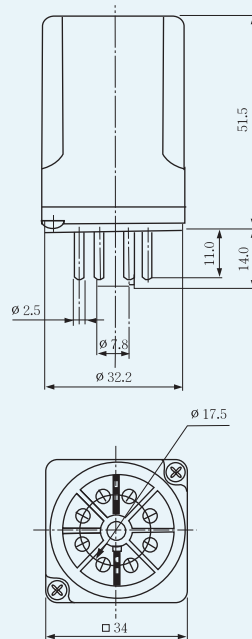
| Shape / Dimension Drawing |

(unit : mm)

YSMR07-2P

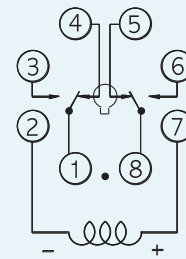


적용소켓 : YSSK 08
(Applied socket : YSSK 08)



내부 결선도

| Inside Connection Diagram |

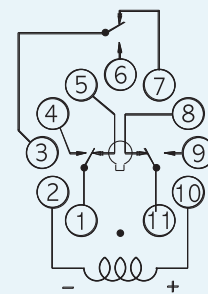
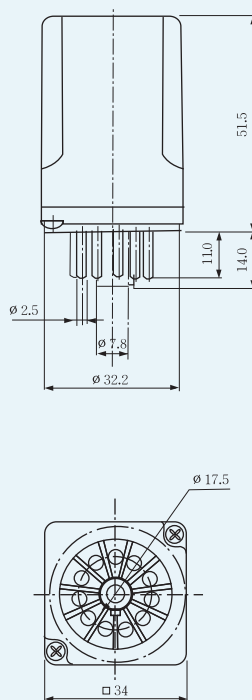


YSMR07-2P

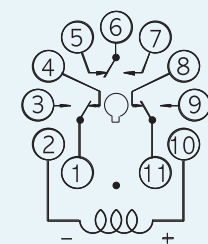
YSMR05-3P



적용소켓 : YSSK 11
(Applied socket : YSSK 11)



YSMR05-3P

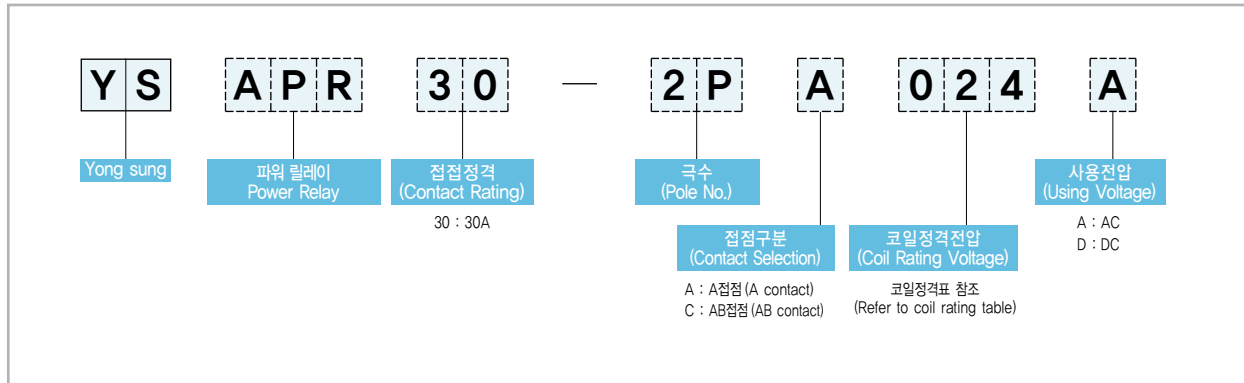

YSMR05-3P
(K Type)

*주문 Type (Ordered production)

8-3

파워 릴레이 Power Relay

형식 구분도 | Type Classification Diagram |



특징 | Features |

- 소형이면서 대용량의 전류를 개폐할 수 있다.
- 냉동차, 전기온수기, 건조장치, 단상모타 기동용으로 널리 사용이 가능하다.
- 조립성이 용이하다. - 판넬조립이 가능함.
- 결선이 간편하다. - 카바부 조립상태에서 결선이 가능함.
- Small type and can switch large capacity.
- Widely used for refrigerator, electric water-warming device, dry machine, single - phase motor starting.
- Easy for assembling - possible for panel assembling.
- Easy for wiring - possible for wiring with keeping cover assembled.

성능 개요 | Performance Summary |

절연저항 (Insulation Resistance)	above 100MΩ (DC 500V meg)
접촉저항 (Contact Resistance)	below 50mΩ (initial value)
내전압 (Withstand Voltage)	AC2,500V/min (60Hz)
동작 시간 (Operating Time)	below 30ms
복귀 시간 (Return Time)	below 30ms
기계적 수명 (Mechanical Lifetime)	above 5,000,000 (20time/min)
전기적 수명 (Electrical Lifetime)	above 250,000 (20time/min)
내진동 (Withstand Vibration)	10~55Hz double amplitude 1.0mm
사용 주위 온도 (Ambient Temperature)	-5℃ ~ +40℃
상대습도 (Relative Humidity)	45 ~ 85%

코일 정격 | Coil Rating |

정격전압 (Rating voltage) V	정격전류 (Rating current) mA	Coil 저항 (Coil resistance) Ω	소비전력 (Power Consumption) VA,W
AC 110	256	380	28VA
AC 220	162	1,240	31VA
DC 24	99	242	2.4W
DC 110	29	3,760	2.4W
DC 125	30	4,050	4.0W

부품 재질 | Part Materials |

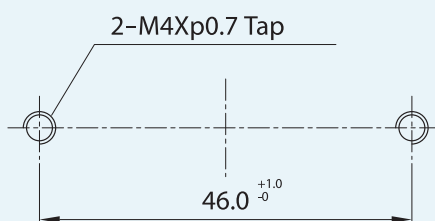
부 품 (Part)	재 질 (Materials)
몸 체 (Body)	PC 수지 (PC Resin)
카 바 (Cover)	PC 수지 (PC Resin)
단 자 (Terminal)	황동 (Brass)
볼 트 (Bolt)	탄소강 (Carbon Steel)

접점 정격 | Contact Rating |

정격절연전압 (Rating Insulation Voltage)			AC600V, DC250V	
정격통전전류 (Rating Conductive Current)			35A	
정격사용전압 (Rated Voltage)			110V	220V
정격전류 (Rating Voltage)	AC	저항부하 (Resistive Load)	30A	25A
		유도부하 (inductive Load)	26A	13A
	DC	저항부하 (Resistive Load)	2.6A	1.3A
		유도부하 (inductive Load)	2.3A	0.7A

판넬 가공 치수 | Cut-out Dimension |

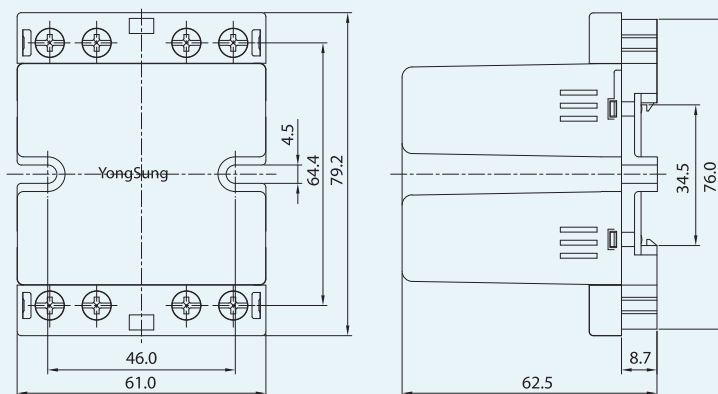
(unit : mm)



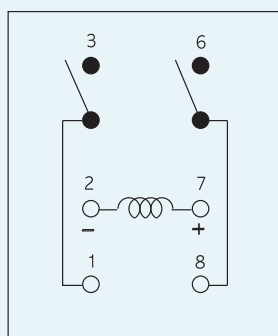
외형 / 치수도 | Shape / Dimension Drawing |

(unit : mm)

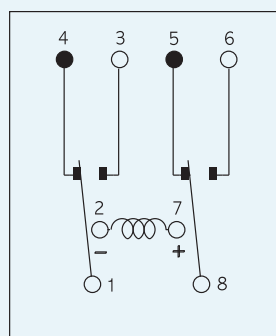
파워 릴레이 (Power Relay)



내부 결선도 | Inside Connection Diagram |



2PA



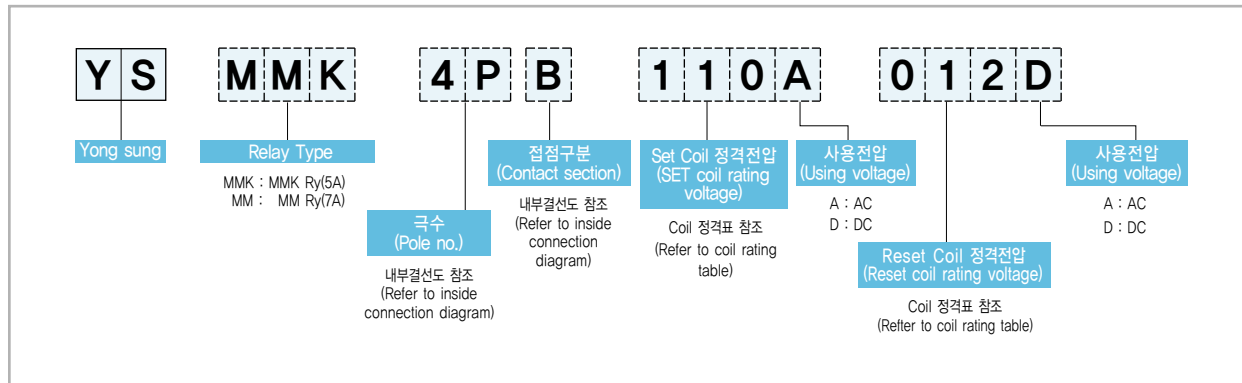
2PC

8-4

자기 유지형 릴레이 (전력용 보조 계전기) Keep Relay (Auxiliary Relay for Electric Power)

■ 한국전기연구원개발시험합격

형식 구분도 | Type Classification Diagram |



특징 | Features |

기계적 Lock방식의 Keep Relay (MMK형)

- 동작이 기계적으로 유지되기 때문에 소비전력이 적어 경제적입니다. (MMK)
- Set coil을 AC, Reset coil을 DC로 하는 사양의 Relay도 제조가능합니다. (MMK)
- Pulse 신호전력으로 빠른 응답동작
- 안정된 접촉신뢰성, 긴 수명
- 설치, 배선이 용이하고 취급이 간단합니다.
- MM형은 일반형 Relay입니다.

Keep relay with mechanical lock method. (MMK type)

- Due to being mechanically operated, it is economical with less power consumption. (MMK)
- Possible to supply relay with AC set coil and DC reset coil also possible. (MMK)
- Rapid response due to pulse signal power.
- Stabilized contact reliability and long lifetime.
- Easy setting and wiring and simple maintenance.
- MM type is general relay.

접점 정격 | Contact Rating |

구 분 (Classification)	접점허용전력 (Contact Allowable Power)		전압(V) (voltage)	정격부하 (Rating load)		정격통전전류(A) (Rating conductive current)
	저항부하 (Resistance load)	유도부하 (Inductive load)		저항부하 (Resistance load) (COS ϕ =1)	유도부하 (Inductive load) (COS ϕ =0.4, L/R=7ms)	
MMK4P	AC1250VA	AC1,000VA	AC250V	5	4	5
	DC120W	DC96W	DC 24V	5	4	
MM4P	AC1750VA	AC1,250VA	AC250V	7	5	7
	DC168W	DC120W	DC 24V	7	5	

코일 정격 | Coil Rating

▶ SET COIL

	항 목 (Item)	코일전류(mA) (Coil current)		코일저항(Ω) (Coil resistance)		소비전력(VA, W) (Power Consumption)		SET전압 (Set voltage)	최대허용 전압(Max. allowable voltage)	복귀전압 (return voltage)
정격전압(V) (Rating voltage)	형 식 (Type)	MMK형 (MMK type)	MM형 (MM type)	MMK형 (MMK type)	MM형 (MM type)	MMK형 (MMK type)	MM형 (MM type)	정격전압에 대한 비율 (Ratio against rating voltage)		MM형 (MM type)
AC	110	1,000	700	103	157	115	77	MMK type MM type below 80%	MMK type MM type 110%	above 30%
	220	353	271	454	800	77	59			
DC	24	150	160	158	152	3.6	2.7	MMK type below 80% MM type below 70%		
	48	71	52	671	925	3.42	2.5			
	110	29	22	3,700	5,600	3.3	2.8			
	125	27	22	4,440	5,600	3.4	2.8			
	220	13	－	17,200	－	2.8	－			

▶ RESET COIL

정격전압(V) (Rating voltage)	항 목 (Item)	코일전류(mA) (Coil current)(mA)	코일저항(Ω) (Coil resistance)(Ω)	소비전력(VA, W) (Power Consumption)	RESET전압 (Reset voltage)	최대허용전압 (Max. allowable voltage)
					정격전압에 대한 비율 (Ratio against rating voltage)	
AC	110	122	426	13.4	below 80%	110%
	220	155	1,496	34.0		
DC	24	169	139	4.1		
	48	50	971	2.4		
	110	40	2,700	4.4		
	125	41	3,000	5.1		
	220	17.2	12,500	3.8		

- ※주 : 1. 정격전류, Coil 저항은 Coil 온도가 23℃일 때의 값으로서 허용공차는 AC정격전류 : +15%, -20%이며, DC Coil 저항은 ±15%입니다.
2. 동작특성은 Coil 온도가 23℃에서의 특성치입니다.

- ※Note : 1. As rating current and coil resistance are the value at 23℃ of coil temperature, its allowable tolerance is AC rating current : +15% ~ - 20% and DC coil resistance : ±15%
2. Operating characteristics is the value at 23℃ of coil temperature.

성능 개요 | Performance Summary |

항 목 (Item)		성 능 (Performance)	
		MMK4P	MM4P
접촉저항 (Contact resistance)		below 50mΩ (Initial value)	
내전압 (Withstand voltage)		AC2,000V/min	
절연저항 (Insulation resistance)		above 100MΩ (DC500V.Meg)	
SET	시 간 (Time)	AC : below 30ms DC : below 60ms	-
	최소 PULSE 폭 (Min. PULSE width)	AC, DC 100ms	-
RESET	시 간(Time)	below 30ms	-
	최소 PULSE 폭 (Min. PULSE width)	AC, DC below 100ms	-
동작시간 (Operating time)		-	below 50ms
복귀시간 (Return time)		-	below 50ms
내진동 (Withstand Vibration)	내구 (Endurance)	10~55Hz 복진폭 0.75mm (Double amplitude)	10~55Hz 복진폭 1.5mm (Double amplitude)
	오동작 (Malfunction)	10~35Hz 복진폭 1mm (Double amplitude)	10~55Hz 복진폭 1mm (Double amplitude)
내충격 (Withstand Impact)	내구 (Endurance)	500 m/s ² (about 50G)	1,000 m/s ² (about 100G)
	오동작 (Malfunction)	50 m/s ² (about 5G)	100 m/s ² (about 10G)
수 명 (Lifetime)	기계적 (Mechanical)	about 1,000,000 times	
	전기적 (Electrical)	above 500,000 times	
최대개폐빈도 (Max. switching Frequency)	기계적 (Mechanical)	30 times/min	
	전기적 (Electrical)		
사용주위온도 (Ambient temperature)		-25℃ ~ +40℃	
상대습도 (Relative humidity)		45% ~ 85%	

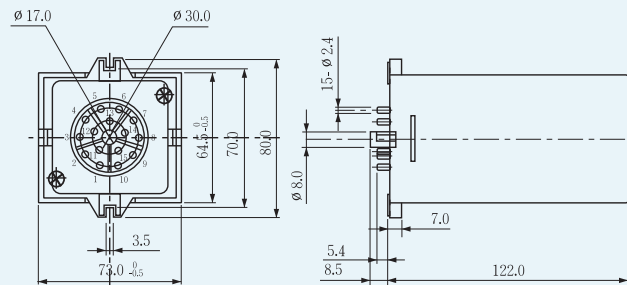
외형 / 치수도 | Shape / Dimension Drawing

(unit : mm)

YSMMK-4P



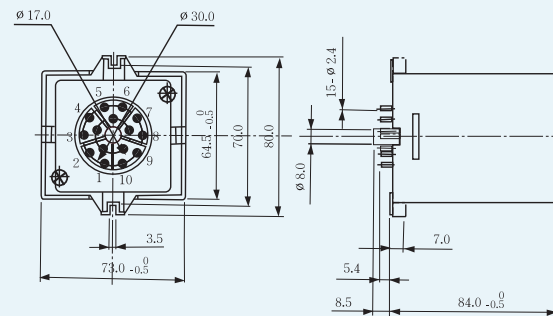
적용 socket (Applied socket) : YSSK14-K



YSMM-4P

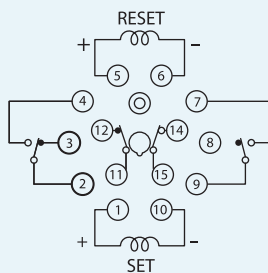


적용 socket (Applied socket) : YSSK14-K

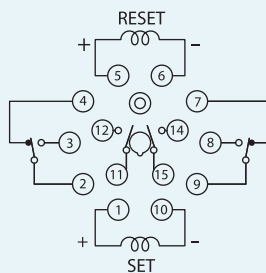


내부 결선도 | Inside Connection Diagram

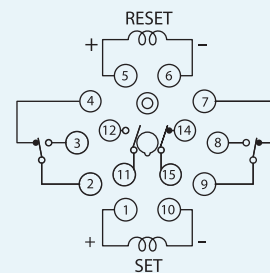
YSMMK 4PA (MMK TYPE)



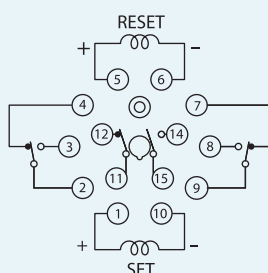
YSMMK 4PB (MMK TYPE)



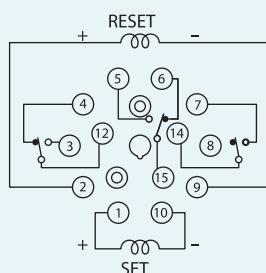
YSMMK 4PG (MMK TYPE)



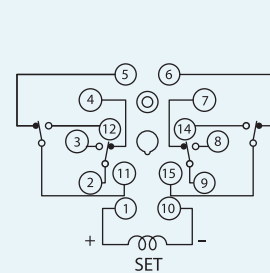
YSMMK 3PB (MMK TYPE)



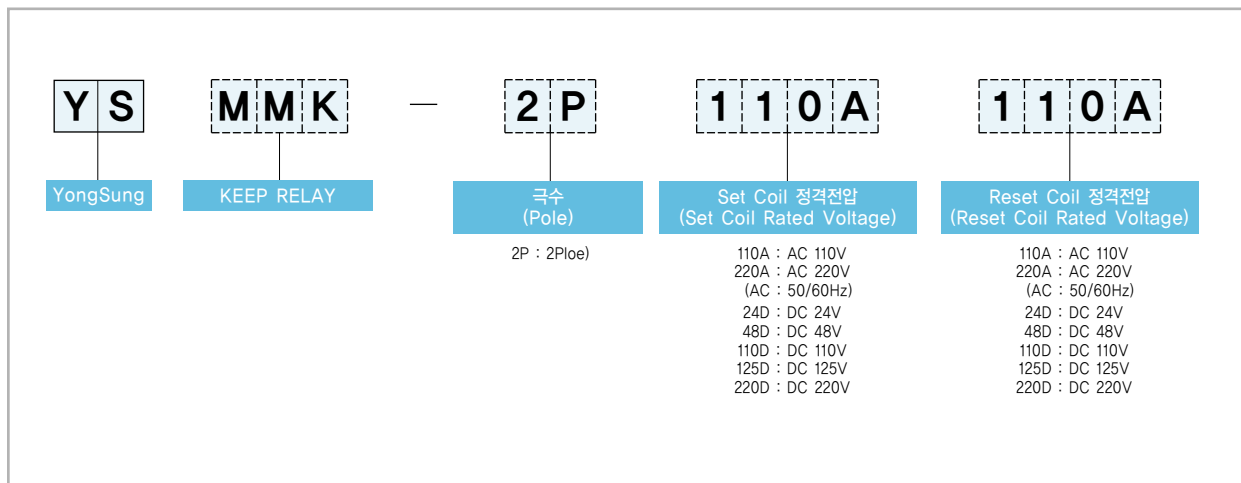
YSMMK 3PC (MMK TYPE)



YSMM 4PC (MM TYPE)



형식 구분도 | Type Classification Diagram |

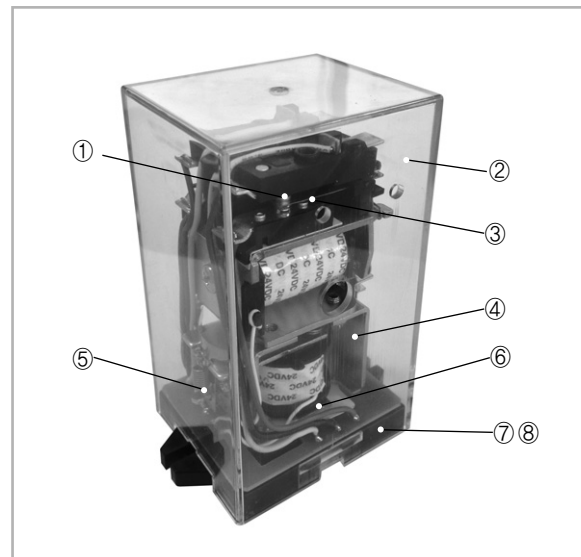


제품 특징 및 구조 | Features and Structure of Product |

- 설치, 배선이 용이하고 취급이 간단합니다.
- Set coil 전압과 Reset coil 전압을 별도로 사용할 수 있습니다.
- 단일 펄스로 래치되므로 지속적인 전압을 가할 필요가 없어, 전력이 효율적입니다.
- Easy setting and wiring and simple maintenance.
- Set coil Voltage and Reset coil Voltage can be used separately.
- As it is latched with one Pulse, it doesn't need continuous voltage, then it is economical with less power consumption.

부품 재질 | Part Materials |

No	부 품 (Part)	재 질 (Materials)
1	접점 (Contact)	은 접점 (Silver)
2	카바 (Cover)	PC 수지 (PC Resin)
3	단자 (Terminal)	황동 (Brass)
4	프레임 (Frame)	탄소강 (Carbon Steel)
5	스프링 (Spring)	스테인레스 (Stainless)
6	보빈 (Bobbin)	나일론 수지 (Nylon Resin)
7	베이스 (Base)	페놀 수지 (Phenol Resin)
8	플러그 (Plug)	황동 (Brass)



코일 정격 | Coil Rating |

▶ SET COIL

정격전압(V) (Rating voltage)	항 목 (Item)	코일전류(mA) (Coil current)(mA) (60 Hz)	Coil저항(Ω) (Coil resistance)(Ω)	소비전력(VA,W) (Power Consumption)	SET전압 (Set voltage)	최대허용전압 (Max. allowable voltage)
					정격전압에 대한 비율 (Ratio against rating voltage)	
AC	110	71	300	5.4	below 80%	110%
	220	28	1,545	4.2		
DC	24	82	295	2.1		
	48	47	1,680	2.3		
	110	20	5,700	2.3		
	125	21	6,000	2.8		
	220	11	22,400	2.4		

▶ RESET COIL

정격전압(V) (Rating voltage)	항 목 (Item)	코일전류(mA) (Coil current)(mA) (60 Hz)	Coil저항(Ω) (Coil resistance)(Ω)	소비전력(VA,W) (Power Consumption)	RESET전압 (Reset voltage)	최대허용전압 (Max. allowable voltage)
					정격전압에 대한 비율 (Ratio against rating voltage)	
AC	110	61	430	5.1	below 80%	110%
	220	34	1,500	5.7		
DC	24	166	145	4		
	48	51	960	2.5		
	110	41	2,735	4.7		
	125	40	3,260	5.1		
	220	18	12,580	4.2		

주1) 정격 전류, 코일 저항은 코일 온도가 +23℃일 때의 값으로, 공차는 AC정격 전류 +15%, -20%, DC코일 저항 ±15%입니다.

주2) AC코일 저항은 참고값입니다.

주3) 최대 허용 전압은 릴레이 코일 조작 전원의 전압 허용 변동 범위의 최대값으로, 연속 허용은 아닙니다.

Note1) The value of Rating current and Coil resistance is based on the coil temperature of +23℃.

The tolerance is +15%, -20% for AC rating and ±15% for AC coil resistance.

Note2) The value of AC coil is just for your reference.

Note3) The Maximum allowable voltage is the highest value of the allowable range of relay coil voltage.

It is not accepting continuity.

접점 정격 | Contact Rating |

접점허용전력 (Contact Allowable Power)		전압(V) (Voltage)	정격부하 (Rating load)		정격통전전류(A) (Rating conductive current)
저항부하 (Resistance load)	유도부하 (Inductive load)		저항부하 (Resistance load) (COSØ=1)	유도부하 (Inductive load) (COSØ=0.4, L/R=7ms)	
AC 1,250VA	AC 1,000VA	AC 250V	5	4	5
DC 120W	DC 96W	DC 24V	5	4	

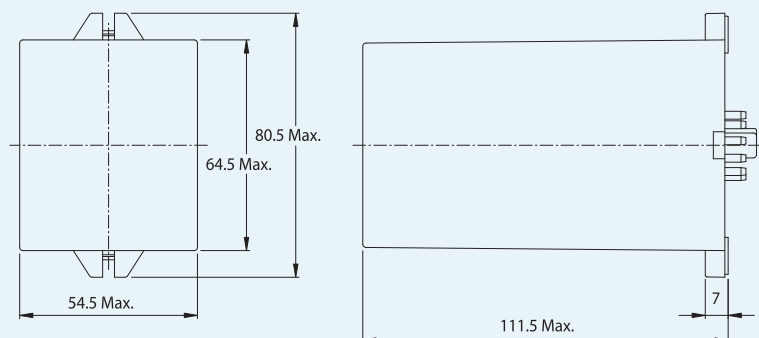
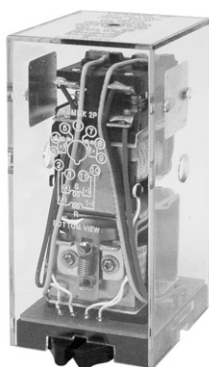
성능 및 사용조건 | Performance and Using Condition |

접촉저항 (Contact resistance)		below 50mΩ(initial value)
내전압 (Withstand voltage)		AC 2,000V/min(50~60Hz)
절연저항 (Insulation resistance)		above 100MΩ(DC 500V. Meg)
Set	시간 (Time)	AC : below 30ms DC : below 60ms
	최소 PULSE 폭 (Min. PULSE width)	AC, DC 100ms
	시간 (Time)	below 30ms
Reset	최소 PULSE 폭 (Min. PULSE width)	AC, DC 100ms
내진동 (Withstand Vibration)	내구 (Endurance)	10~55Hz 복진폭 0.75mm (Double amplitude)
	오동작 (Malfunction)	10~55Hz 복진폭 0.5mm (Double amplitude)
내충격 (Withstand Impact)	내구 (Endurance)	500 m/s ² (about 50G)
	오동작 (Malfunction)	50 m/s ² (about 5G)
수명 (Lifetime)	기계적 (Mechanical)	above 1,000,000 times (20 times/min)
	전기적 (Electrical)	above 500,000 times (20 times/min)
최대개폐빈도 (Max. switching Frequency)	기계적 (Mechanical)	30 times/min
	전기적 (Electrical)	
사용주위온도 (Ambient temperature)		-25℃ ~ +55℃ (단 결로되지 않는 조건) (When condensation is not)
상대습도 (Relative humidity)		45 ~ 85%

외형 / 치수도 | Shape / Dimension Drawing |

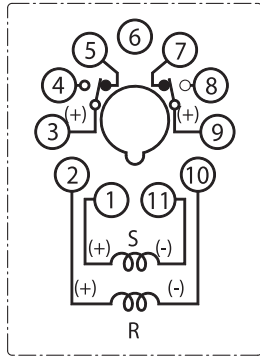
(unit : mm)

YSMMK-2P



적용소켓 : YSSK11K (Applied Socket : YSSK11K)

단자 배열 / 내부 배열 | Terminal Arrangement / Internal Connections |



BOTTOM VIEW

- ※ 콤몬은 모두 같은 극성으로 해 주십시오.
케이스 마킹은 동극성을 나타내므로 콤몬은 모두 (+) 표시되어 있으나,
콤몬을 모두 동극성으로 사용하면 (모두 (+) 또는 모두 (-)) 문제 없습니다.
- ※ COMMON should be done to the same type of poles.
COMMON is marked with (+) on the case, as the case marking
shows the same poles.
However, when you make the COMMON with the same type of
poles, (+) with (+) or (-) with (-) will be no problem.

설치 및 주의사항 | Safety Precautions |

- 1) 접점부 근처에 철가루 등이 있으면 철가루가 유입되어 접점의 접촉을 방해하므로 철가루등이 유입되지 않도록 사용 장소를 충분히 고려해 주십시오.

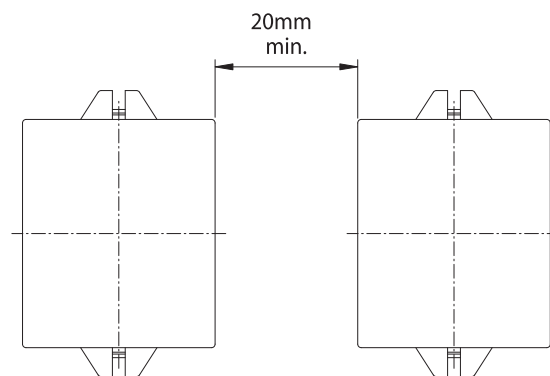
Please keep the contact pints away from iron shavings. When iron shavings flow into the contact points, they may interrupt the contact.

- 2) 릴레이 단독으로 사용할 수 없습니다. 전용 소켓을 별도로 준비해야 합니다.

The relay has to be used together with it's socket. You can not use the relay itself.

- 3) 두 개 이상의 릴레이를 사용할 경우 20mm의 최소 여유 공간이 필요합니다.

Two or more relays are used together, where will need at least 20mm of space between the relays.



일반 설치 방향
(Direction of normal
installation)

- ※ 가동 접점(set coil)이 아래 방향으로 향하도록 릴레이를 장착해야 합니다.
- ※ When you install the relay, Set Coil should be downward.

- 4) Coil set 전원과 reset 전원을 동시에 사용할 수 없습니다.

동시에 전압이 인가되면 릴레이는 set 상태가 됩니다.

Coil set power and Reset power can not be used at the same time.

When they are used at the same time, the relay will be in the status of "set".

- 5) MMK 2P는 단일 펄스로 래치되므로 지속적으로 전압을 가하지 마십시오.

지속적으로 전압을 인가할 경우 전원만 소비되며, 제품의 수명이 줄어들 수 있습니다.

As MMK 2P is latched with one Pulse, don't supply with continuous voltage.

If you supply with continuous voltage, only power will be consumed and also the durability of the relay could be reduced.

- 6) DC 스위칭으로 사용 시 아크 현상은 질소 가스를 생성할 수 있습니다.

이때 가스를 배출할 수 있도록 제품 양 측면에 가스 배출구가 있습니다.

배출구를 통해 먼지나 이물질이 유입될 수 있으므로, 적절한 환경에서 사용하십시오.

When it is used as DC switching, nitrogen gas can be created by arc.

That's why there are gas vents both sides of the relay. Please prevent dust or foreign materials from getting into the relay through the gas vents.

- 7) 가연 가스가 발생되는 곳에서는 사용하지 마십시오.

아크로 인해 폭발의 위험이 있습니다.

Don't use the relay in where there is combustible gas.

As there could be danger of explosion by arc.

- 8) 아래 그림과 같이 릴레이 NC접점 (b 접점)을 사용하여 set coil을 사용하는 회로는 사용할 수 없습니다.

You can not use the circuit as below diagram using set coil with NC contact (b contact).

