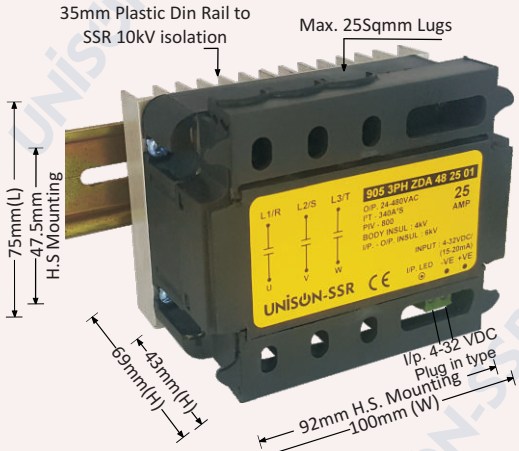
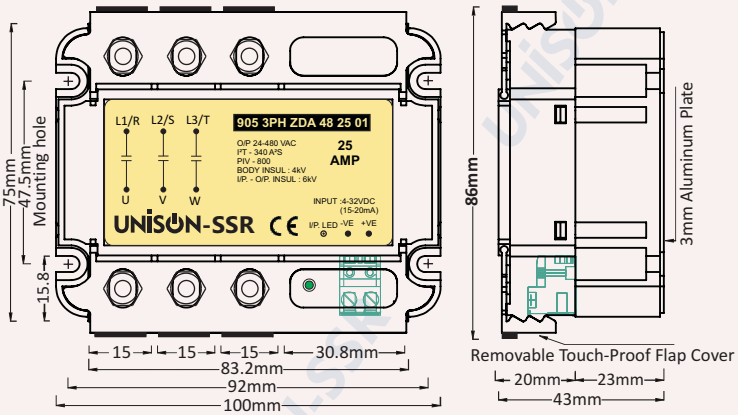
UNISON CONTROLS PVT. LTD.

3 PHASE DC TO AC SSR

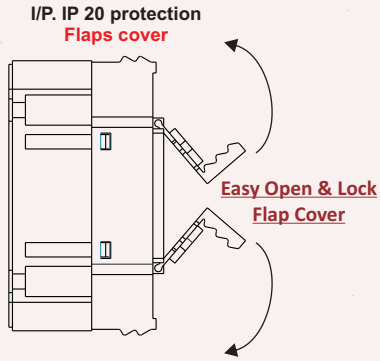
SOLID STATE RELAY



TYPE "E-75"
Model 905- 1 Nos.
Current upto 21Amp @40°C with Din Rail 45mm
Thermal Resistance
$R_{\theta SA}$ = 3°C/W
$R_{\theta SA}$ = 278.15 K/W
ΔT= 75°C
Surface Area:
267mm²X75mm
=20025 mm³
101mm(W) X 75mm(L) X 15mm(H) + SSR
Weight : @ 119gms



- **Zero Voltage Turn-On .**
- **Rating from 25 Amp to 50 Amp @25°C 24-480 VAC.**
- **Short Circuit Current Rating As Per UL508A.**
- **Short Circuit Protected SSR up to 15 Amp per phase current by help of suitable "B" curve MCB.**
- **No need to use semiconductor Fuse due to short circuit protected SSR.**
- **With easy open & lock IP 20 protection Flaps on O/P Terminals.**
- **Fire Retardant Plastic as per UL94 VO GRADE.**
- **New improved SEMS Screw - Washers input & Output terminals.**
- **High resistance to aggressive chemicals and dust due to special Potting.**
- **Logic compatibility, Fast switching, Low coupling capacitance.**
- **No electromechanical or acoustical noise**
- **Long life cycle . Up to 10^{11} cycles**
- **No contact arcing, low electromagnetic interference, high surge capability**
- **SSRs can be provided as surface-mount technology (SMT)parts, which means lower cost and easier SMT printed-circuit board manufacture**



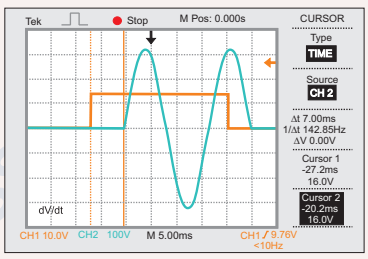
ORDERING FORMAT

UNISON	MODEL	XXX	X	X	X	XX	YYY	ZZ
UNI	905	3PH	Z	D	A	48	25	01

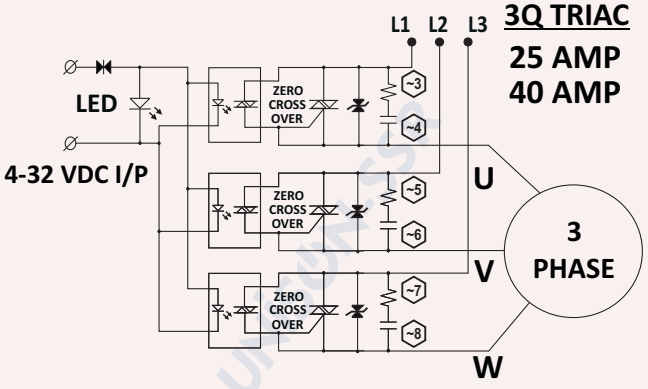
905: 905 Model
3PH : 3 Phase
Z : Zero Cross Over
D : DC Input
A : AC Output
Output Voltage
48: 24-480 VAC
Output Current Rating
25
40
50
Control Input
01 : 4-32 VDC

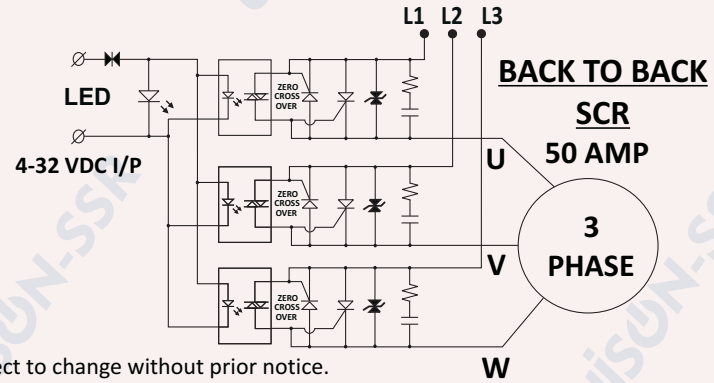
EXAMPLES
UNI 905 3PH ZDA 48 25 01
UNI 905 3PH ZDA 48 40 01

ZERO CROSSOVER Waveform



3 PH DC TO AC I/P SSR BLOCK DIAGRAM





Note : Specifications are subject to change without prior notice.

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UNISON CONTROLS PVT. LTD.

SOLID STATE RELAY

General Specification

Max Barrier Layer Temperature (T_{max})	< 125 °C
Ambient Temperature Range (T_{amb})	0-85 °C
SSR Storage Temperature Range (T_{st})	-40°C to 80°C
Input Terminal Screw Torque Range	Ţ = 0.5 N.m (Max.)
Output Terminal Screw Torque Range	Ţ = 2.5 N.m (Max.)
Power Factor COSϕ @Max. Load @480VAC	> 0.55
Housing Material	UL-94 V0 Grade
Base Plate	Aluminium
SSR Weight	390 grams
Control Input Electrical Wire Size (Max.)	Up to 2.1 sq mm(14 AWG)
Power Output Electrical Wire Size (Max.)	Up to 25 sq mm(3 AWG)
Test Standards:	ROHS,IP20
Pending Approvals:	UL 508,VDE ,TUV ,CSA 22-2 IEC 60947-5-1:2016 IEC 62314:2006

Input Technical Specifications

Parameters	Unit	ZDA
Control Voltage Range	V	4-32VDC
Input Frequency Range	Hz	-
Control Supply Current Consumption	mA	15-20mA
Input Impedance (Current Regulator Circuit Impedance)	Ω	1 kΩ - 2 kΩ
Minimum Turn ON Voltage	VDC	3.5 VDC
Turn OFF Voltage	VDC	< 3.5 VDC
Control Input Status Indication	-	Green LED Indication
Maximum Turn ON Time	mS	≤ 1/2 Cycle(10 mS)
Maximum Turn OFF Time	mS	≤ 1/2 Cycle(10 mS)

Output Technical Specifications @ 25°C Unless Specified

Parameters	Symbol	Unit	25 Amp	40 Amp	50 Amp
Operating Voltage Range	V_{AC}	V_{RMS}	24-480 VAC - 3Q TRIAC		24-480 VAC B & B SCR
Operating Frequency Range	f	Hz	47-63 Hz		
Peak Inverse Voltage	PIV	V_{PK}	800	800	1200
Max. Surge Voltage With Stand Capacity (<1 Second)	**V_{surge}**	**V_{RMS}**	**2700 V_{RMS} (3800 V_{PK})**		
Rated Operational Current AC51a @ 20°C (Resistive Load)	**I_T**	**Amp**	**25**	**40**	**50**
Rated Operational Current AC53a @ 55°C (Inductive Load-Motor)	I_T	Amp	4.8	7.8	11.2
Maximum Load Short Circuit Protection Current @ 55°C	**I_{SC}**	**Amp**	**-**	**-**	**15**
"B" Curve D.P. MCB Rating for Short Circuit Protection	**MCB**	**Amp**	**-**	**-**	**16**
Maximum 3 Phase Motor Rating	hp	hp	2 hp	3 hp	5 hp
	kW	kW	1.49	2.23	3.72
NON Repetitive Surge Peak ON-State Current @ Rated V_{RRM} applied for 1/2 Cycle t=10 mS/t=8.33 mS (50 Hz/60 Hz)	I_{TSM} @ 50 Hz	Ap	260	420	800
	I_{TSM} @ 60 Hz		273	441	840
Max. I^2t for Fusing @ t=10 mS (50Hz)	I^2t	A^2s	340	880	3000
Max. I^2t for Fusing @ t=8.33 mS (60Hz)	I^2t	A^2s	305	795	2750
Max. Peak ON-state voltage Drop	V_{TM}	VRMS	≤ 1.2	≤ 1.2	≤ 1.2
Minimum Isolation Resistance between Input Terminals (+1,-2) to Output Terminals (L1,L2,L3,U,V,W) @ 500 VDC	Ω	GΩ	50	50	50
Isolation Voltage Input Terminals (+1,-2) to Output Terminals (L1,L2,L3,U,V,W) for 1 Minute	V_{ISO}	kV	6	6	6
Isolation Voltage Input & Output Terminal (+1,-2,L1,L2,L3,U,V,W) to Body Isolation for 1 Minute	V_{ISO}	kV	4	4	4
Phase to Phase Isolation between terminals (L1,L2,L3) to (U,V,W) for 1 Minute	V_{ISO}	kV	4	4	4
Max. Rate of Rise OFF-State Voltage	dV/dt	V/µS	400	500	600
Max. Rate of Rise OFF-State Current	di/dt	A/µS	22	50	100
Max. Peak Repetitive Forward OFF-State Voltage	V_{DRM}	V	800	800	1200
Max. Peak Repetitive Forward OFF-State current	I_{DRM}	mA	0.05	0.05	0.1
Max. Peak repetitive reverse off-state Voltage	V_{RRM}	V	800	800	1200
Max. Peak repetitive reverse off-state current	I_{RRM}	mA	0.05	0.05	0.1
Max. DC Gate Trigger Voltage	V_{GT}	V	1.2	1.5	1.5
Max. DC Gate Trigger Current	I_{GT}	mA	50	50	8.8
Turn OFF Time	t_q	µS	20	35	120
Maximum Latching Current	I_L	mA	100	100	160
Maximum Holding Current	I_H	mA	75	60	150
Thermal Resistance Rθ (Junction to case)	$R_{\theta(j-c)}$	°C/W	1.2	1.1	1
OFF State SSR Leakage Current @ Rated Voltage & Frequency (Snubber Leakage)	I_{leak}	mA	< 2 mA	< 2 mA	< 2 mA
SCCR Current Rating	I_{SCCR}	kA	-	-	10 kA
SSR Weight - 905 Model	W	gram	350	350	370

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