



RoHS Compliant

PRODUCT SPECIFICATION

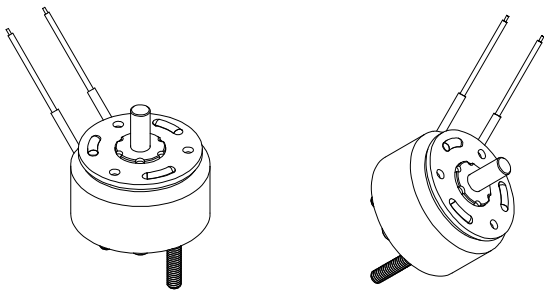
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PART No.	VOLTAGE	STROKE(°)	DUTY CYCLE*	POWER (W)	DCR (Ω)	START TORQUE (N*m)
DSRS-0640-13-45D	13 VDC	45°	50%	14	12.0	0.035
DSRS-0640-15-45D	15 VDC	45°	30%	24	9.0	0.250
DSRS-0640-18-45D	18 VDC	45°	12.5%	53	5.8	0.400
DSRS-0640-26-45D	26 VDC	45°	4%	178	3.8	0.650

SPRING RETURN TORQUE: 0.016~0.024 N*m

* PROPERTY VALUES ARE ±10% AT 20°C

1. MECHANICAL DIMENSIONS:

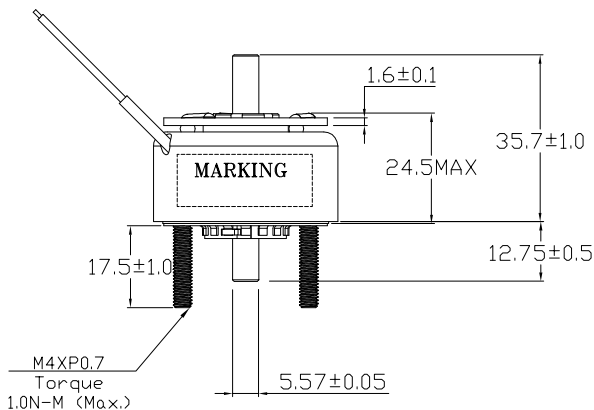
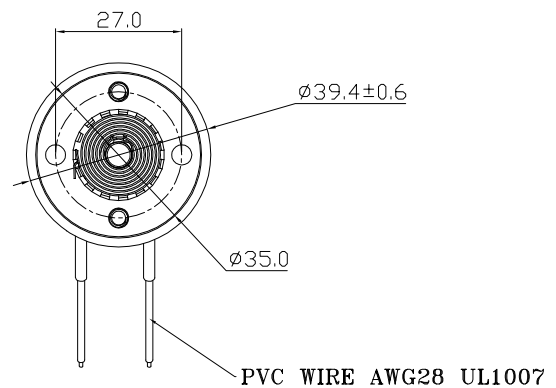
UNIT : mm
UNLESS TOLERANCES.

X = ±0.5

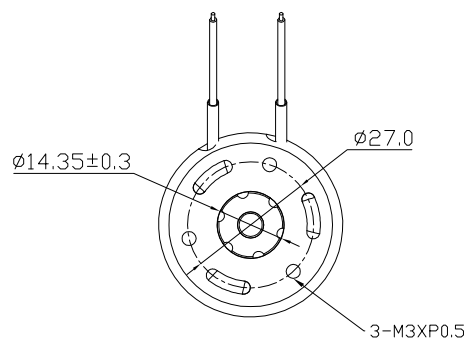
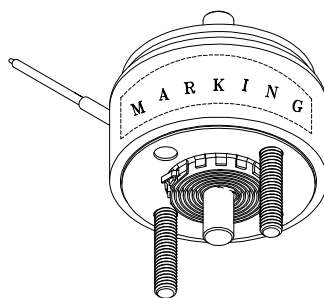
X.X = ±0.3

DRAWING SHOWN SOLENOID AT INITIAL POSITION

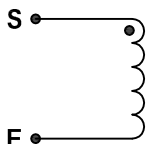
ANGLES = ±0.5°

M4XP0.7
Torque
1.0N-M (Max.)

PVC WIRE AWG28 UL1007



2. SCHEMATIC :



MARKING:

DECT : DELTA CHACHOENGSARO THAILAND
PLANT

YY : THE LAST 2 DIGIT OF YEAR

WW : WEEK

DD : DATE OF WINDING PROCESS

LL : LINE NO. OF WINDING

A : SAMPLE REVISION

INSULATION MATERIALS: UL CONSTRUCTION, CLASS B 130°C
LIFE EXPECTANCY: 100K CYCLES OPERATIONS

$$*Duty\ cycle = \frac{\text{"ON" TIME}}{\text{"ON" TIME} + \text{"OFF" TIME}} \times 100\%$$

LAYER TEST	IR. @500 Vdc.	HI-POT
(S-F) : 2KVp. MIN.	COIL TO CASE	@50/60Hz., 2mA
TEST ONLY COIL	10 MOHM MIN.	COIL TO CASE
		600Vac., 2s



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3.CHARACTERISTICS:

3.1 ELECTRICAL REQUIREMENTS

3.1.1 DIELECTRIC STRENGTH (COIL TO METAL FRAME) · 600 Vac., 2 sec. @ 50/60HZ.,5mA.

3.1.2 INSULATION RESISTANCE (COIL TO METAL FRAME) · 10 MEGA-OHM MINIMUM @ 500Vdc.

3.1.3 SPRING RETURN TORQUE · 0.016~0.024 N · M

3.1.4 DUTY CYCLE SETTING BY NOMINAL VOLTAGE ·

P/N	DUTY CYCLE* FOR On/Off TIME
DSRS-0640-13-45D	5 sec. On Max.; 5 sec. Off Min.
DSRS-0640-15-45D	3 sec. On Max.; 7 sec. Off Min.
DSRS-0640-18-45D	1.25 sec. On Max.; 8.75 sec. Off Min.
DSRS-0640-26-45D	0.4 sec. On Max.; 9.6 sec. Off Min.

3.2 MISCELLANEOUS REQUIREMENTS

3.2.1 WORKING STROKE · 0° TO 45°. C.W

3.2.2 WORKING RELATIVE HUMIDITY · 0% TO 58%RH

3.2.3 WORKING TEMPERATURE · -40° C TO 65° C

3.2.4 STORAGE TEMPERATURE · -40° C TO 65° C

3.3 SAFETY REQUIREMENTS

3.3.1 SOLENOID COMPLY WITH "RoHS"

4. OPERATION INSTRUCTION FOR EXTRA APPLICATION.

WITH SOLENOID AT AMBIENT ROOM TEMPERATURE 20°C

DUTY CYCLE* FOR ON TIME Max. AND VOLTAGE INPUT									
P/N	Duty	100%	50%	30%	25%	12.5%	10%	5%	4%
	sec.	∞	5.0	3.0	2.5	1.25	1.0	0.5	0.4
DSRS-0640-13-45D	VDC (Nom.)	9.0	13.0	16.6	18.2	25.8	28.8	40.7	45.6
DSRS-0640-15-45D	VDC (Nom.)	8.0	11.5	15.0	16.0	22.7	25.5	36.0	40.0
DSRS-0640-18-45D	VDC (Nom.)	6.5	9.1	11.9	12.8	18.0	20.3	28.7	32.2
DSRS-0640-26-45D	VDC (Nom.)	5.2	7.4	9.6	10.4	14.5	16.5	23.3	26.0

$$*Duty\ cycle = \frac{"ON" TIME}{"ON" TIME + "OFF" TIME} \times 100\%$$



Reliability test data

Part Number : DSR5-0640-13-45D

Part Name: DC Solenoid

Test durance: Sep.21 - Sep.23,2018

Report number: FM18SOLQE023

Customer P/N: DSR5-0640-13-45D

Test department: FMBG ESP RD & QE

Char.	DCR	Hi-Pot at 500VAC	Insulation resistance at 500 VDC	Layer test	Power consumption	Operation Voltage	Duty cycles
Product spec.	12.8	60.00	10	500Vp.	14.00	13 Vdc	1.0 sec ON / 1.0 sec OFF
Tolerance	+/-10%	Max	Min	Min	+/-10%	Max	
Unit	Ohm	Sec	Mohm	Vp.	W	Volt	Cycles
USL	14.08	2 mA	100		15.40	Operation solenoid	Operation solenoid
SL							100K
LSL	11.52	0.00	0.00		12.60		
Sample 1	12.92	PASS	≥ 30	PASS	13.08	PASS	PASS
Sample 2	12.93	PASS	≥ 30	PASS	13.08	PASS	PASS
Sample 3	12.86	PASS	≥ 30	PASS	13.14	PASS	PASS
Dimension check							
Item	35.7+/-1.0	12.75+/-0.5	17.5+/-1.0	24.5 Max.	5.57+/-0.05	39.4+/-0.6	35.0+/-0.1
Sample 1	36.07	12.52	17.30	24.46	5.57	39.76	35.03
Sample 2	36.11	12.58	17.34	24.41	5.57	39.81	35.04
Sample 3	36.24	12.51	17.37	24.43	5.57	39.83	35.06
Function check							
Description	Torque check (N-M)		Working storke	Working temp.(°C)		Storage temp.(°C)	
Item	starting	Spring Return	45°	-40.00	65.00	-40.00	65.00
Sample 1	0.035	0.018	45°	PASS	PASS	PASS	PASS
Sample 2	0.034	0.019	45°	PASS	PASS	PASS	PASS
Sample 3	0.033	0.019	45°	PASS	PASS	PASS	PASS
Check by : Nick.Hsu / Peggy.Shu				Approval by : Bonnie.Cheng			



Reliability test data

Part Number : DSR5-0640-15-45D

Part Name: DC Solenoid

Test durance: Sep.21 ~ Sep.23,2018

Report number: FM18SOLQE023

Customer P/N: DSR5-0640-15-45D

Test department: FMBG ESP RD & QE

Char.	DCR	Hi-Pot at 500VAC	Insulation resistance at 500 VDC	Layer test	Power consumption	Operation Voltage	Duty cycles
Product spec.	9.0	60.00	10	500Vp.	24.00	15 Vdc	0.3 sec ON / 0.7sec OFF
Tolerance	+/-10%	Max	Min	Min	+/-10%	Max	
Unit	Ohm	Sec	Mohm	Vp.	W	Volt	Cycles
USL	9.90	2 mA	100		26.40	Operation solenoid	Operation solenoid
SL							100K
LSL	8.10	0.00	0.00		21.60		
Sample 1	8.65	PASS	≥30	PASS	26.01	PASS	PASS
Sample 2	8.72	PASS	≥30	PASS	25.80	PASS	PASS
Sample 3	8.74	PASS	≥30	PASS	25.74	PASS	PASS
Dimension check							
Item	35.7+/-1.0	12.75+/-0.5	17.5+/-1.0	24.5 Max.	5.57+/-0.05	39.4+/-0.6	35.0+/-0.1
Sample 1	36.08	12.57	17.37	24.44	5.57	39.74	35.04
Sample 2	36.10	12.58	17.35	24.42	5.57	39.78	35.04
Sample 3	36.16	12.56	17.37	24.46	5.57	39.77	35.05
Function check							
Description	Torque check (N-M)		Working storke	Working temp.(°C)		Storage temp.(°C)	
Item	starting	Spring Return	45°	-40.00	65.00	-40.00	65.00
Sample 1	0.245	0.019	45°	PASS	PASS	PASS	PASS
Sample 2	0.234	0.019	45°	PASS	PASS	PASS	PASS
Sample 3	0.243	0.019	45°	PASS	PASS	PASS	PASS
Check by : Nick.Hsu / Peggy.Shu				Approval by : Bonnie.Cheng			



Reliability test data

Part Number : DSRS-0640-18-45D

Part Name: DC Solenoid

Test durance: Sep.21 ~ Sep.23,2018

Report number: FM18SOLQE023

Customer P/N: DSRS-0640-18-45D

Test department: FMBG ESP RD & QE

Char.	DCR	Hi-Pot at 500VAC	Insulation resistance at 500 VDC	Layer test	Power consumption	Operation Voltage	Duty cycles
Product spec.	5.8	60.00	10	500Vp.	53.00	18 Vdc	0.125 sec ON / 0.875 sec OFF
Tolerance	+/-10%	Max	Min	Min	+/-10%	Max	
Unit	Ohm	Sec	Mohm	Vp.	W	Volt	Cycles
USL	6.38	2 mA	100		58.30	Operation solenoid	Operation solenoid
SL							100K
LSL	5.22	0.00	0.00		47.70		
Sample 1	5.92	PASS	≥30	PASS	54.73	PASS	PASS
Sample 2	6.04	PASS	≥30	PASS	53.64	PASS	PASS
Sample 3	5.96	PASS	≥30	PASS	54.36	PASS	PASS
Dimension check							
Item	35.7+/-1.0	12.75+/-0.5	17.5+/-1.0	24.5 Max.	5.57+/-0.05	39.4+/-0.6	35.0+/-0.1
Sample 1	36.16	12.56	17.27	24.42	5.57	39.83	35.01
Sample 2	36.15	12.56	17.31	24.42	5.57	39.85	35.05
Sample 3	36.19	12.57	17.33	24.45	5.57	39.81	35.03
Function check							
Description	Torque check (N-M)		Working storke	Working temp.(°C)		Storage temp.(°C)	
Item	starting	Spring Return	45°	-40.00	65.00	-40.00	65.00
Sample 1	0.398	0.018	45°	PASS	PASS	PASS	PASS
Sample 2	0.410	0.019	45°	PASS	PASS	PASS	PASS
Sample 3	0.412	0.018	45°	PASS	PASS	PASS	PASS
Check by : Nick.Hsu / Peggy.Shu				Approval by : Bonnie.Cheng			



Reliability test data

Part Number : DSR5-0640-26-45D

Part Name: DC Solenoid

Test durance: Sep.21 ~ Sep.23,2018

Report number: FM18SOLQE023

Customer P/N: DSR5-0640-26-45D

Test department: FMBG ESP RD & QE

Char.	DCR	Hi-Pot at 500VAC	Insulation resistance at 500 VDC	Layer test	Power consumption	Operation Voltage	Duty cycles
Product spec.	3.8	60.00	10	500Vp.	178.00	26 Vdc	0.1 sec ON / 2.4 sec OFF
Tolerance	+/-10%	Max	Min	Min	+/-10%	Max	
Unit	Ohm	Sec	Mohm	Vp.	W	Volt	Cycles
USL	4.18	2 mA	100		195.80	Operation solenoid	Operation solenoid
SL							100K
LSL	3.42	0.00	0.00		160.20		
Sample 1	3.86	PASS	≥30	PASS	175.13	PASS	PASS
Sample 2	3.77	PASS	≥30	PASS	179.31	PASS	PASS
Sample 3	3.92	PASS	≥30	PASS	172.45	PASS	PASS
Dimension check							
Item	35.7+/-1.0	12.75+/-0.5	17.5+/-1.0	24.5 Max.	5.57+/-0.05	39.4+/-0.6	35.0+/-0.1
Sample 1	35.97	12.57	17.33	24.42	5.57	39.83	35.08
Sample 2	36.05	12.54	17.31	24.44	5.57	39.85	35.02
Sample 3	36.04	12.55	17.40	24.45	5.57	39.79	35.06
Function check							
Description	Torque check (N-M)		Working storke	Working temp.(°C)		Storage temp.(°C)	
Item	starting	Spring Return	45°	-40.00	65.00	-40.00	65.00
Sample 1	0.640	0.018	45°	PASS	PASS	PASS	PASS
Sample 2	0.642	0.018	45°	PASS	PASS	PASS	PASS
Sample 3	0.638	0.018	45°	PASS	PASS	PASS	PASS
Check by : Nick.Hsu / Peggy.Shu				Approval by : Bonnie.Cheng			