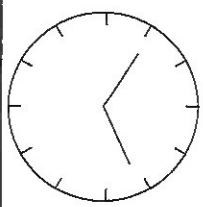


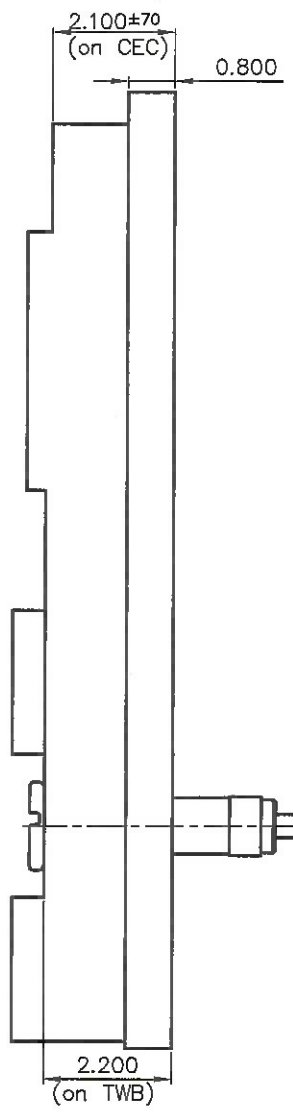
WATCH DIVISION

TECHNICAL DATA FOR TITAN (Bi-Directional) – T902A

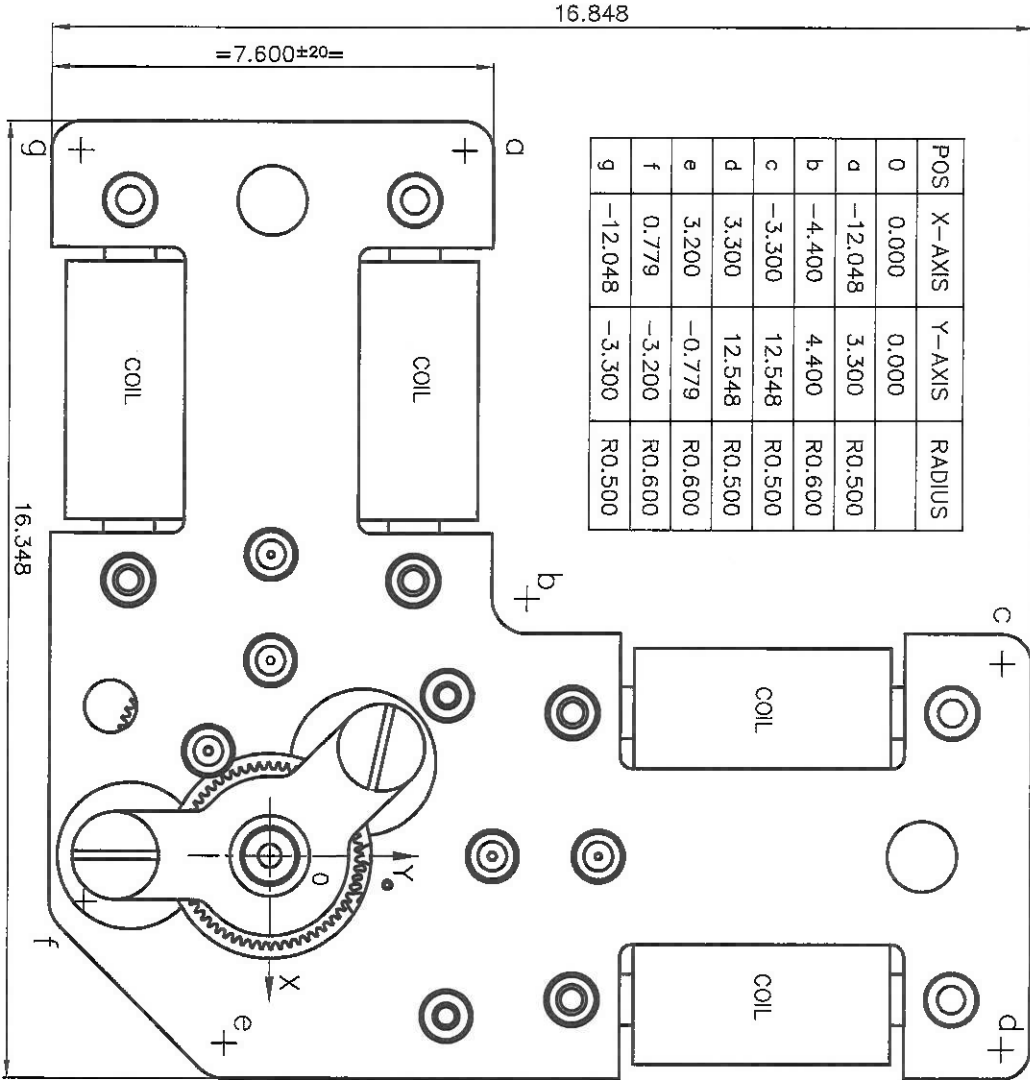


Functions – 2hands (Independent Control)		
Angular rotation per pulse	2°	2°
No of steps for 360° rotation	180	180
Direction	BI-DIRECTIONAL	
Movement size	16.348 x 16.848 mm	
Movt Thickness	2.550 (on COIL)	
No. of jewels	08	
Coil resistance	1.350 K ohms	
Effective temperature range	-10 to +55°C	
Shock resistance	As per NIHS 91/10	
Resistance to magnetic field	18.8 Oe	

POS	X-AXIS	Y-AXIS
0	0.000	0.000
6M	-2.450	11.698
8M	2.450	11.698
6S	11.198	2.450
8S	11.198	-2.450



POS	X-AXIS	Y-AXIS	RADIUS
0	0.000	0.000	
d	-12.048	3.300	R0.500
b	-4.400	4.400	R0.600
c	-3.300	12.548	R0.500
d	3.300	12.548	R0.500
e	3.200	-0.779	R0.600
f	0.779	-3.200	R0.600
g	-12.048	-3.300	R0.500



DIAL SIDE

BIRDGE SIDE

Detail at "G"

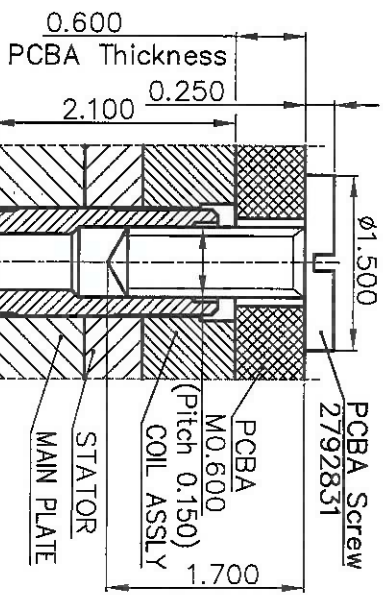
(Scale 16:1)

Section "A-A"

(Scale 16:1)

POS	X-AXIS	Y-AXIS	RADIUS
8S	0.000	0.000	
d	0.285	1.150	
b	0.530	1.000	R0.150
c	0.530	-1.000	R0.150
d	0.285	-1.150	
e	0.040	-1.323	R0.300

POS	X-AXIS	Y-AXIS	RADIUS
f	0.040	-1.390	R0.300
g	-1.300	-1.390	R0.300
h	-1.300	1.390	R0.300
j	0.040	1.390	R0.300
k	0.040	1.323	R0.300

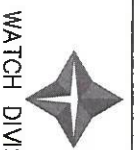


Note: For Pos. 6M, 8M – Rotate 90° anticlockwise direction

Note: PCBA Screw is not a part of Motor BOM

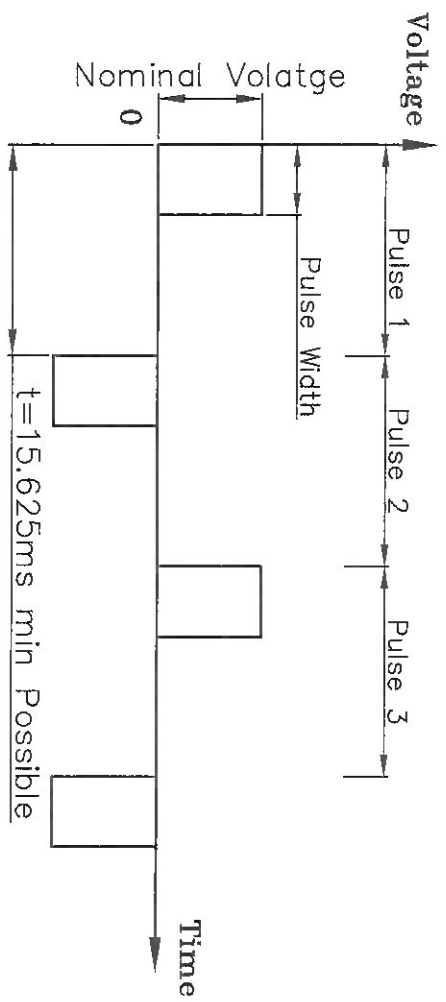
Name	Prepared	Checked	Approved
Date			
TITAN COMPANY LIMITED HOSUR 635 126			

TECHNICAL DATA FOR TITAN (Bi-Directional) – T902A



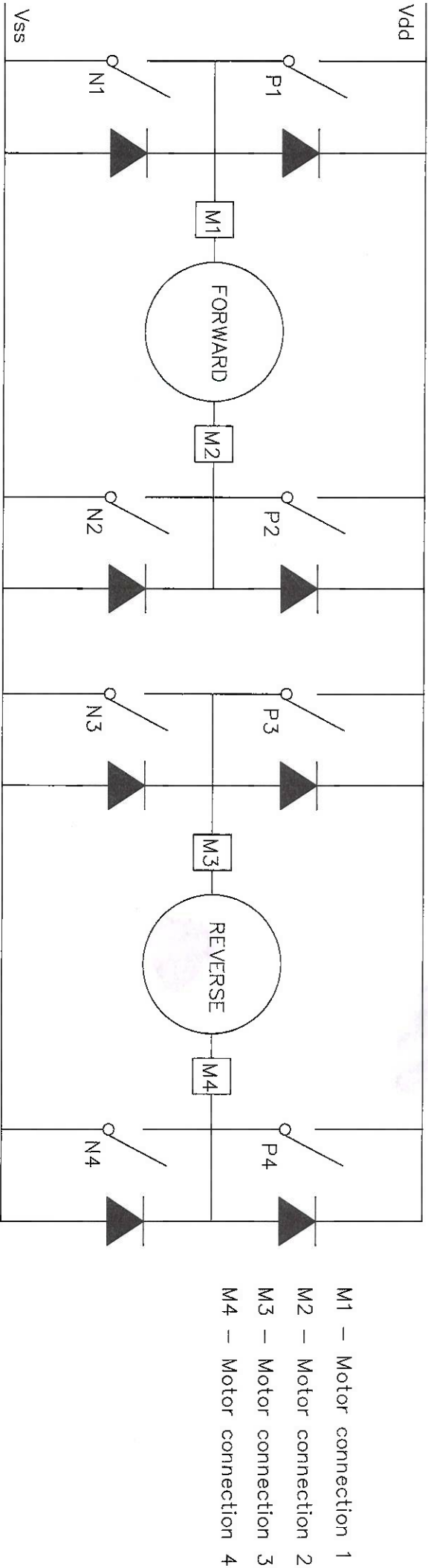
WATCH DIVISION

Wave forms



Note: * – Refer motor driving parameters table for the selections
– 't' parameter is defined based on the applications

Motors Driving Circuit (For Hour & Minute motor)



SL	Description	Unit	Nominal Voltage (V)	
			2.10	3.00
01	Pulse Width	ms	4.5	3.0
02	Duty Cycle	%	100%	100%
03	Current consumption @ 64Hz	μA	335(Typ)~385(Max)	335(Typ)~385(Max)
04	Current Consumption @ 1Hz	μA	5.1(Typ)~5.3(Max)	4.9(Typ)~5.4(Max)
05	Driving torque (typ)	μNm	36 (Min)	36 (Min)
06	Voltage Range	V	1.6 ~ 2.5	1.8 ~ 4.0

Motor driving parameters – Hour & Minute Hand

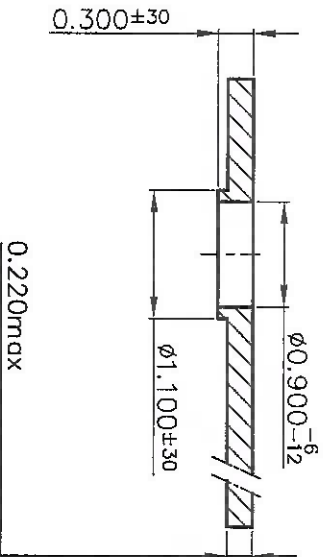
Hand fitting dimensions

Col	A	B	Dmax	E	F	G
STD	1.370	1.830	0.800	3.270	3.570	4.030
HIGH	1.830	2.330	1.200	3.730	4.030	4.530

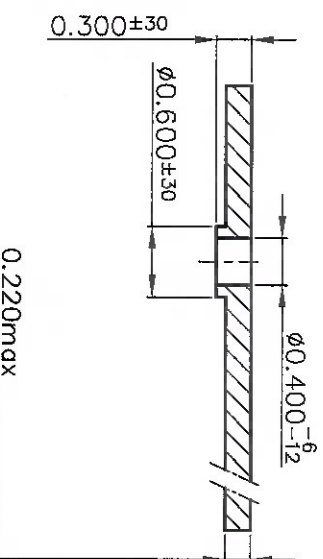
Hand Details

(Scale 16:1)

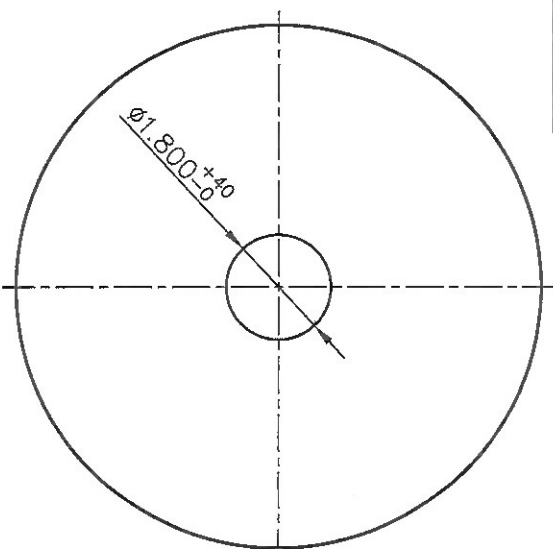
Hour hand



Minute Hand



Dial details



Note: Hands shape to be followed according to the dial holes.

HAND		HANDS	
DESCRIPTION			
Imbalance mg.mm		60	
Inertia mg.mm²		–	
Weight mg (max).		350	
Length mm(max)	Brass	15	

Notes:-

- 1) All dimensions are in mm.
- 2) Tolerances in um.
- 3) Jewel support to be provided while hand fixing
- 4) Motor consumption is measured in WTSCH AQ2
- 5) Protective coating provided on both side of the coils

Index	Alteration	Prepared	Checked	Date	Sign
Name					
Date					

T-2947

b