Inova Automation Pvt Ltd.,
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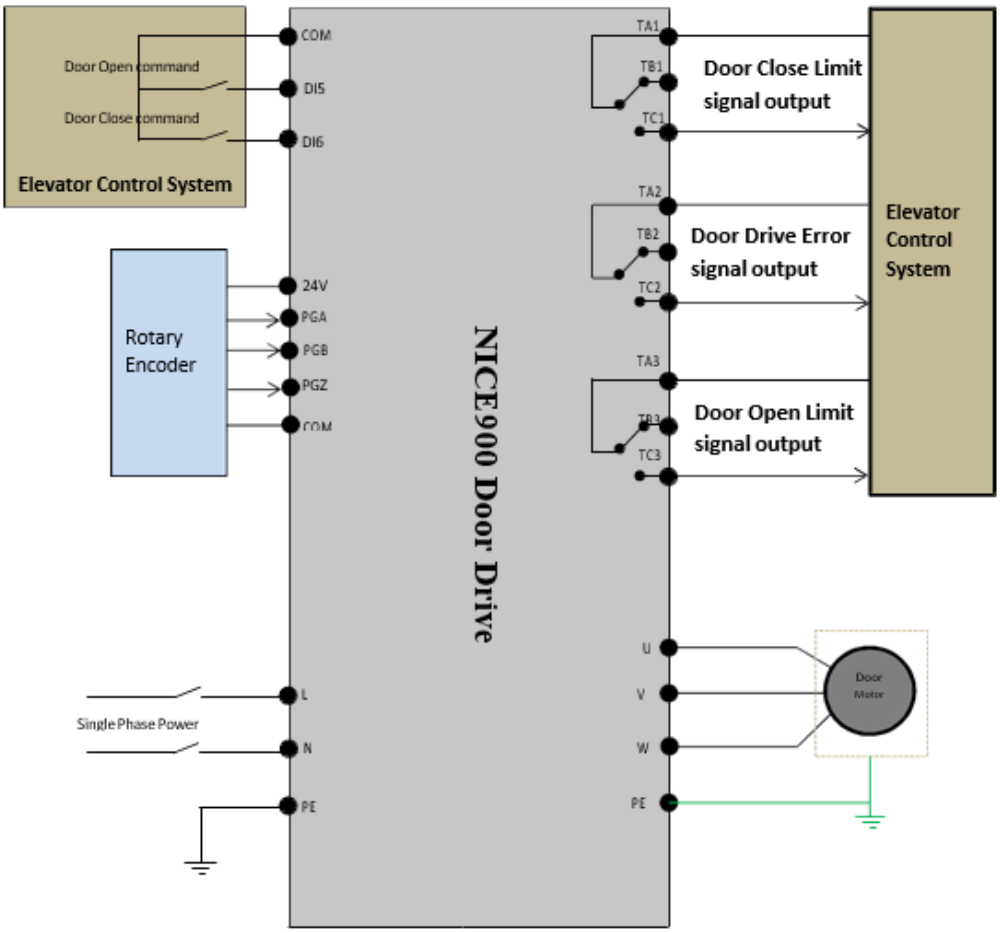
NICE900 Door Drive Setup Manual for Asynchronous / Synchronous Motor with Encoder Feedback

S. No	Description		Remarks
1	Connect the power supply to input terminal **(L, N, PE)** and Door Motor to Output terminal **(U, V, W)** in the NICE900 Drive		
2	Connect the Motor Rotary Encoder to terminals **(+24V, PGA, PGB, PGZ, COM)** in the drive		
3	Connect Door open command to **DI5** and Door Close Command to **DI6**	Set **F905=1** Set **F906-2**	
4	Take Close Limit NO contact Output between **TA1 & TC1**	Set **F909=2**	
5	Door drive error signal NO output between **TA2 & TC2**	Set **F910=5**	
6	Take Open Limit NO Contact Output between **TA3 & TC3**	Set **F911=1**	

NICE 900 Door Drive Interface wiring Diagram



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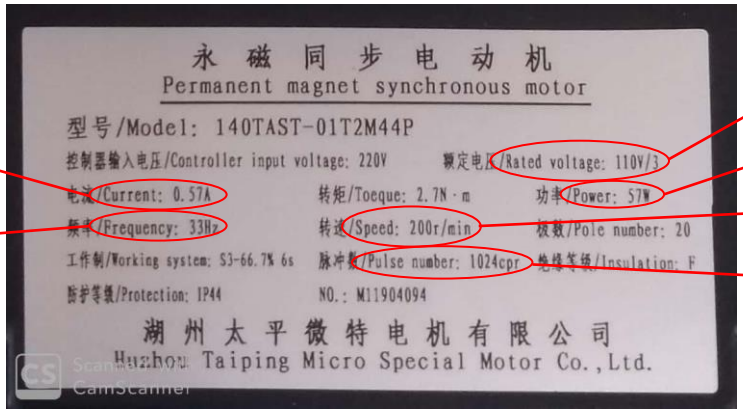
Enter the Following Parameter for Genesis PM Door Motor				
S. No	**Parameter**	**Default**	**Set according to the site condition**	**Remarks & Example Parameter value**
1	F000	1	**1**	
2	F001	1	**1**	
3	F002	0	**0**	
4	F006	4	**4**	
5	F100	1	**1**	1→Synchronous Motor
6	F101	--	**Set Motor Rated Power**	57W
7	F102	--	**Set Motor Rated Volt**	110V
8	F103	--	**Set Motor Rated Amps**	0.57A
9	F104	--	**Set Motor Rated Freq.**	33HZ
10	F105	--	**Set Motor Rated RPM**	200RPM
11	F214	1024	**Set Encoder PPR**	1024

Genesis PM Synchronous Motor Name-plate Details:



Rated Current: 0.57A

Rated Frequency: 33Hz

Rated Voltage: 110V

Rated Power: 57W

Rated Speed: 200rpm

Encoder PPR: 1024

Motor Tuning

The motor tuning must be in the panel control mode (F0-02=0). Before tuning Motor parameters (F1-00 to F1-05) and encoder PPR must be set to the actual value

F1-16 is Tuning mode selection parameter

- **F1-16=3 for Synchronous motor No-Load and Complete Tuning**
- **F1-16=4 for Synchronous motor Loaded Tuning**

Remark: -
Running with load will affect the accuracy of motor tuning. If permitted, it is better to choose no-load / complete tuning

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Motor Tuning Procedure for PM Synchronous Door Motor

F1-00=1 choose Synchronous motor

↓

Set the motor name plate details- F1-01, F1-02, F1-03, F1-04, F1-05 &Encoder PPR value F2-14

↓

Tuning selection: Tuning with load (or)

Without load (Physical Load Separation)

↓

Select **F0-02=0** for Operation panel control, **F1-16=3 for no-load Tuning/F1-16=4 for Loaded tuning** (Choose accordingly). If Loaded tuning is selected, please make sure that there will not be locked rotor because of inadequate door width for tuning and Please make sure that the load is fully removed if F1-16=3 is selected. **'Tune'** will be displayed when ENTER is pressed, motor tuning will start when OPEN or CLOSE is pressed.

↓

After successful motor tuning process, F1-16 becomes '0'. Check the motor direction by pressing the OPEN or CLOSE button, use F0-04 to change the operating panel speed.

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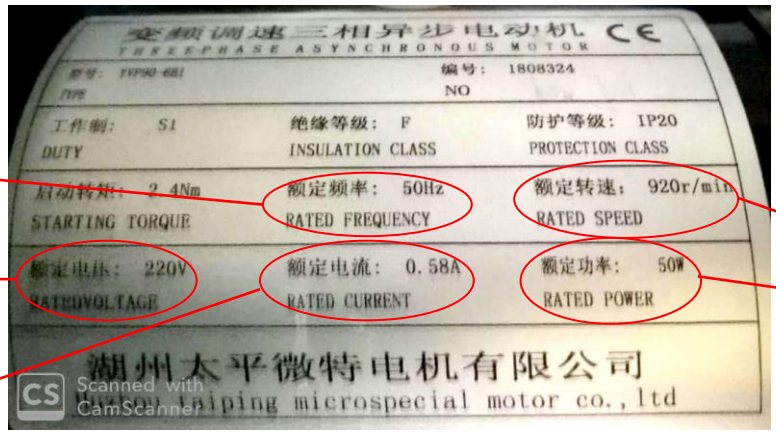
Enter the Following Parameter for Genesis Induction Door Motor				
S. No	**Parameter**	**Default**	**Set according to the site condition**	**Remarks & Example Parameter value**
1	F000	1	**0**	If encoder resolution is less than 500PPR, then keep F0-00=0
2	F001	1	**1**	
3	F002	0	**0**	
4	F006	4	**8**	Slow walking speed setting
5	F100	1	**0**	0→Asynchronous Motor
6	F101	--	**Set Motor Rated Power**	50W
7	F102	--	**Set Motor Rated Volt**	220V
8	F103	--	**Set Motor Rated Amps**	0.58A
9	F104	--	**Set Motor Rated Freq.**	50HZ
10	F105	--	**Set Motor Rated RPM**	920RPM
11	F214	1024	**Set Encoder PPR (50)**	Only 50 PPR for Genesis Induction Motor
12	F210	8	**13**	Torque boost – Adjust according to site condition
13	F601	3	**7**	Door width auto tuning speed
14	F614	80	**40**	Door-width auto-tuning Torque – Adjust according to site

Genesis Induction Asynchronous Motor Name-plate Details:



Rated Frequency: 50Hz

Rated Voltage: 220V

Rated Current: 0.58A

Rated Speed: 920 rpm

Rated Power: 50W

Motor Tuning

The motor tuning must be in the panel control mode (F0-02=0). Before tuning Motor parameters (F1-00 to F1-05) and encoder PPR must be set to the actual value

F1-16 is Tuning mode selection parameter

- **F1-16=1 for Asynchronous motor Static Tuning**
- **F1-16=2 for Asynchronous motor Complete Tuning**

Remark: -
Running with load will affect the accuracy of motor tuning. If permitted, it is better to choose no-load / complete tuning

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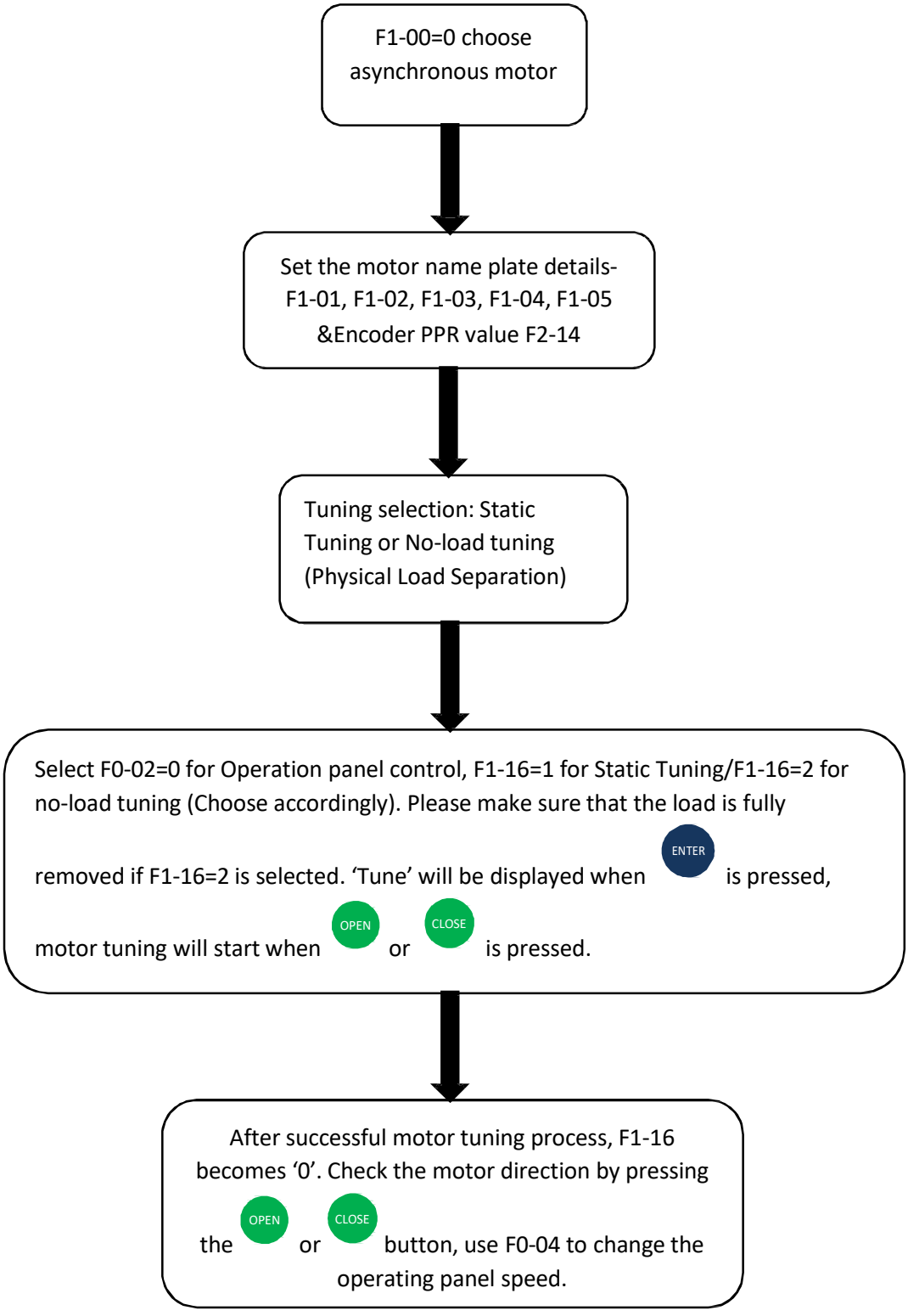
Motor Tuning Procedure for Genesis Induction Asynchronous Door Motor



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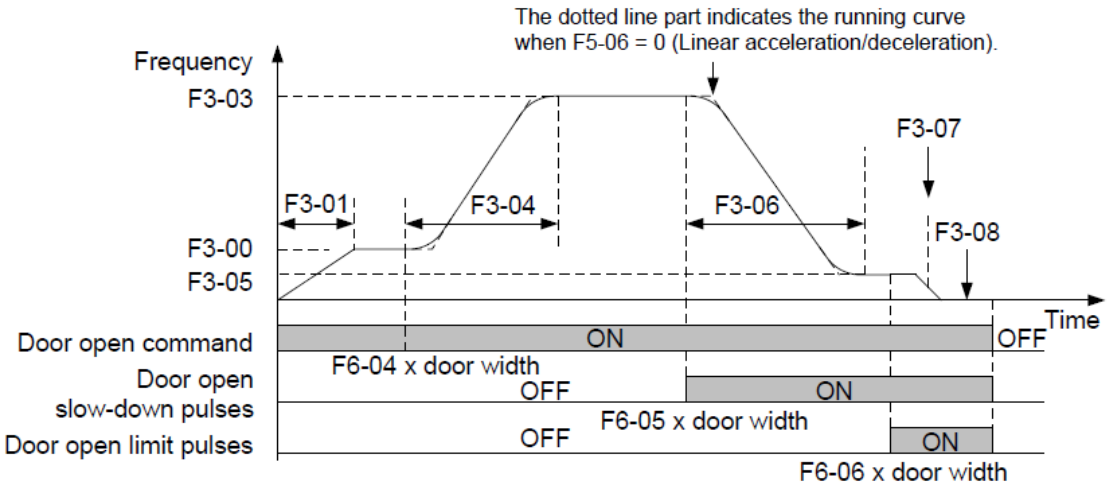
Follow the below parameter setting for Door Width Auto Learning function				
S.N	**Parameter**	**Default**	**Set**	**Remarks**
1	F002	0	2	For Door Width learning function
2	F601	3 Hz	Set **3 Hz** for Synchronous motor Set **7 Hz** for Asynchronous motor	For Door width learning speed setting
3	F600	0	1	Door Width Learning Function Enabled
4	➢ Now press Open / Close button on operating panel for Auto Door Width Learning function. Now system follows the below sequence 1. Door will close completely with speed set in F601. 2. Then Door will open completely with set speed 3. Again, door will close completely 4. After successful completion of the Auto Door Width Learning, display comes to normal status and Door width Pulse Low bit and High Bit will be stored in parameter F602 & F603 respectively ➢ If Error20 & Error27 occur during Auto door Width learning, check the suitability of Encoder, Encoder wiring and check the system by changing the parameter F215=1(Pulse Encoder Direction selection - Reversal) ➢ After successful completion of above functions, system is ready for Normal operation ➢ **Now Keep F002=1 for Door Drive 'DI' terminal Function** ➢ Using the following Parameter Groups, we can achieve the required smooth and perfect function of the Door while Opening and Closing 1. F3 – Open Door Run Parameter 2. F4 – Close Door Run Parameter 3. F6 – Distance Control Parameter			

Distance Control Door Open Curve Sketch



- F3 group parameters for Door open curve adjustment
- F6 group parameters for Distance Control Parameter

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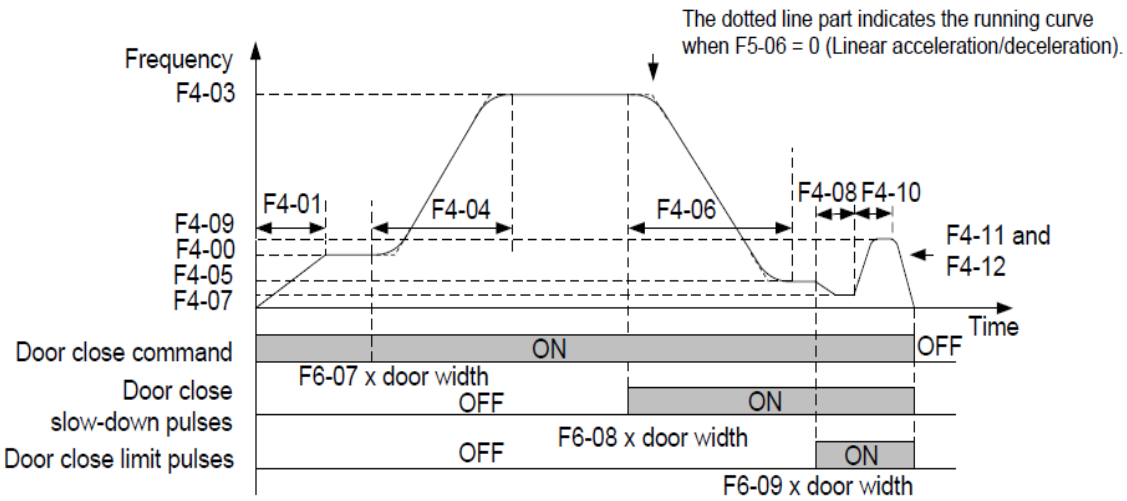
Distance Control Door Close Curve Sketch



- F4 group parameters for Door close curve adjustment
- F6 group parameters for Distance Control Parameter

Auto demonstrating mode (Test mode):

- After completion of Door width learning process, check the performance of the door open and close operation.
- Select F0-02=3, press OPEN / CLOSE button and door starts opening and then closing continuously with the default speed. Check the opening and closing performance.
- To modify the performance, use parameters F3 →Open door run parameter
  F4 →Close door run parameter
  F6 → Distance control parameter
  F2 → Performance control parameter

  to achieve the required smooth door operation.