

## Main [OB1]

## Main Properties

## General

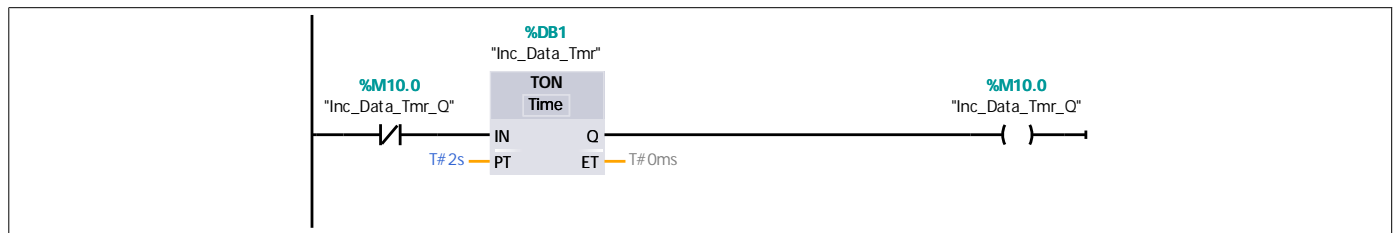
Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Automatic		

## Information

Title	Chapter 17 S7-1500 Com- munications	Author		Comment	TSEND_C and TRCV_C - Sending processor  Copyright (c) 2022, Dog- wood Valley Press, LLC
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
Remanence	Bool	
Temp		
Constant		

## Network 1:



## Network 2: Change data in sending block

```
0001 IF "Inc_Data_Tmr_Q" THEN
0002     "Send_Data_Block".IntData[0] := "Send_Data_Block".IntData[0] + 1;
0003     "Send_Data_Block".IntData[1] := "Send_Data_Block".IntData[0] + 10;
0004     "Send_Data_Block".IntData[2] := "Send_Data_Block".IntData[0] + 100;
0005     "Send_Data_Block".IntData[3] := "Send_Data_Block".IntData[0] + 1000;
0006     "Send_Data_Block".IntData[4] := "Send_Data_Block".IntData[0] + 10000;
0007 END_IF;
```

## Network 3: Call block to send data

Totally Integrated Automation Portal		
<div><div></div><div><div><div>%DB10 "Send_Data_DB"</div><div><div>%FB10 "Send_Data"</div></div></div><div>EN</div><div>ENO</div></div></div>		
<div>Network 4: Clear first scan</div>		
<div><div></div><div><div><div>%M0.0 "Always_On"</div></div><div><div>%M0.2 "First_Scan"</div></div></div><div>( R )</div></div>		

## Send\_Data [FB10]

### Send\_Data Properties

#### General

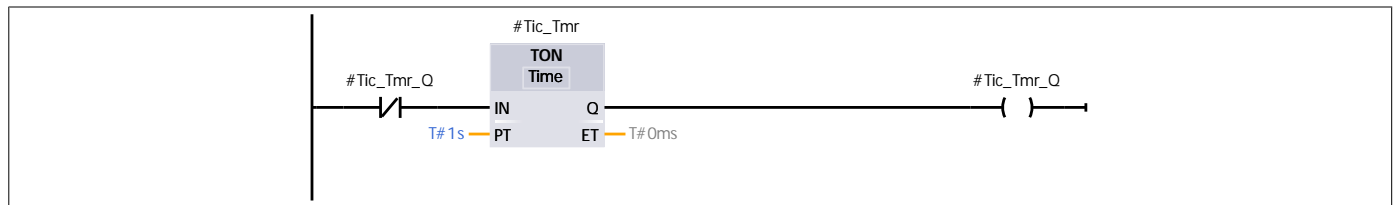
<b>Name</b>	Send_Data	<b>Number</b>	10	<b>Type</b>	FB
<b>Language</b>	LAD	<b>Numbering</b>	Manual		

#### Information

<b>Title</b>	Send block example using TSEND_C	<b>Author</b>		<b>Comment</b>	Send block of 5 Integers to PLC_2
<b>Family</b>		<b>Version</b>	0.1	<b>User-defined ID</b>	

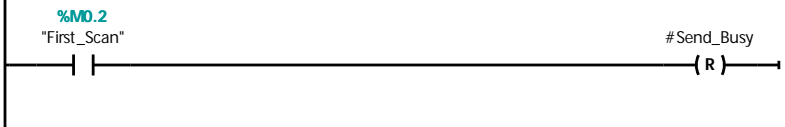
Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Tic_Tmr	TON_TIME		Non-retain
Send_Err_Tmr	TON_TIME		Non-retain
TSend	TSEND_C		
Tic_Tmr_Q	Bool	false	Non-retain
Act_Send	Bool	false	Non-retain
Send_Busy	Bool	false	Non-retain
Send_Connect_Cmd	Bool	false	Non-retain
Send_Conn_Est	Bool	false	Non-retain
Done_Latch	Bool	false	Non-retain
Conn_Error	Bool	false	Non-retain
Send_Conn_Trans	Bool	false	Non-retain
Send_Busy_Latch	Bool	false	Non-retain
TSend_Stat	Word	16#0	Non-retain
TSend_Stat_Save	Word	16#0	Non-retain
Temp			
Constant			

### Network 1: Timer for message



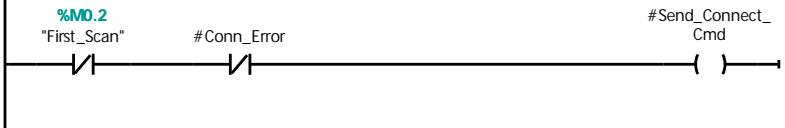
### Network 2: First scan initialization

Reset sending indication



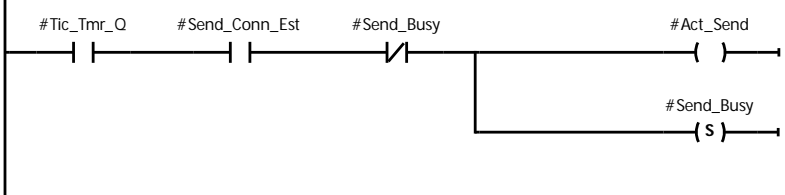
Network 3: Connect command for TSEND\_C

Not during first scan and as long as no connection error

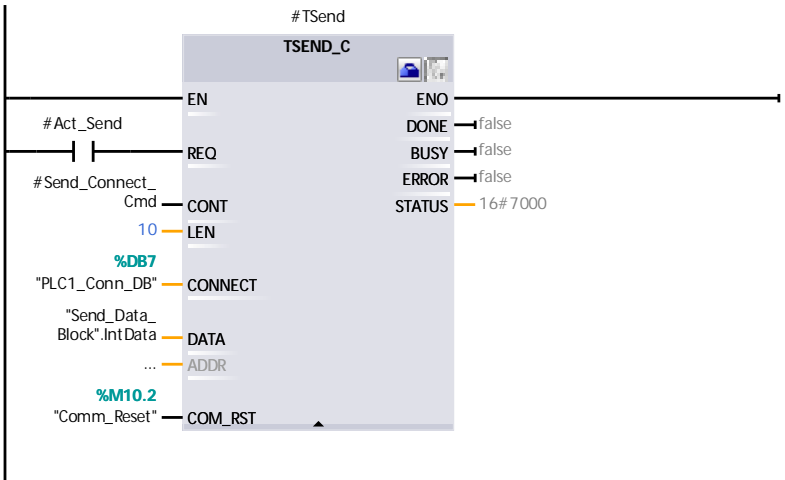


Network 4: Initiate send

Start TSEND\_C with communication tic if connection established and sending not already in progress The REQ input of the TSEND\_C is triggered with a pulse and Send\_Busy is set as long as sending not complete.

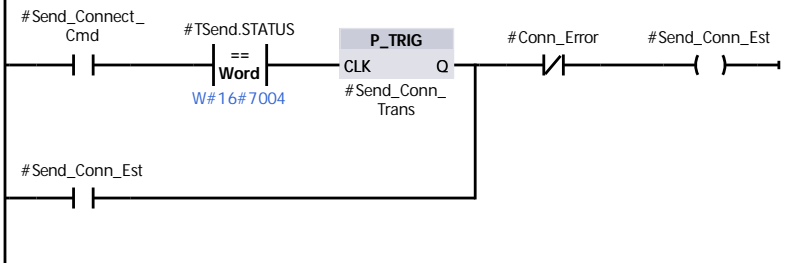


Network 5: Invoke TSEND\_C function



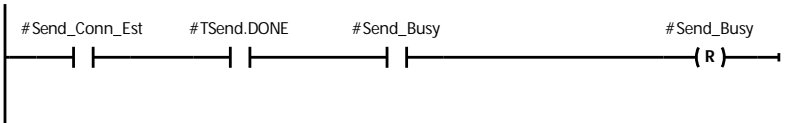
Network 6: Connection established

If status becomes 0x7004, connection is established. Maintain until connection error detected



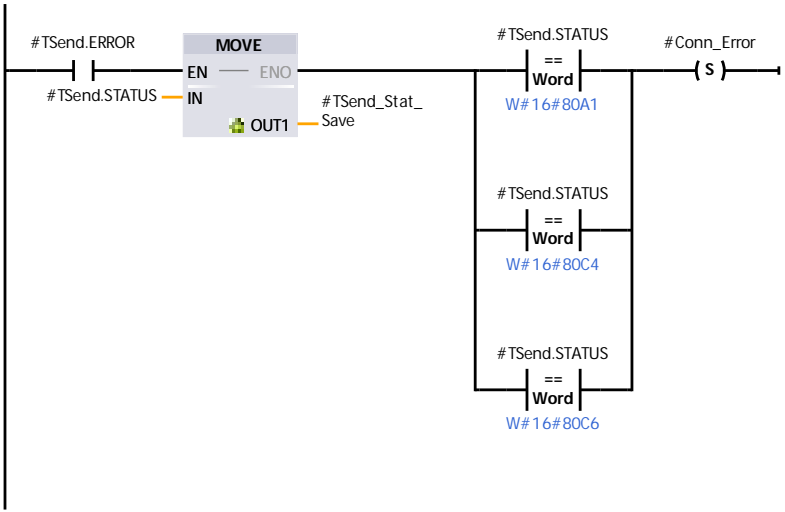
**Network 7: Send complete**

If connection established, sending complete, and send in progress, reset Send\_Busy.  
TSend\_Done on for things other than send complete.



**Network 8: Error tracking and check for connection error**

Save error status. If connection-related error, set Conn\_Error so maintained for timer.



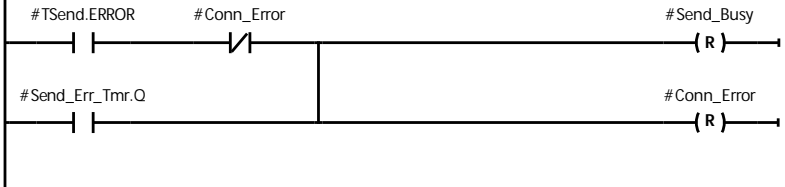
**Network 9: Connection error timer**

If connection error, wait 5 secs before reinitiating TSEND\_C

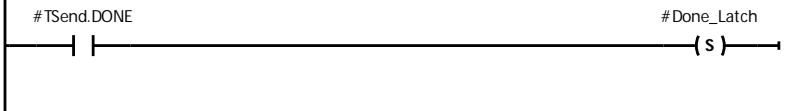


**Network 10: Resets due to error**

If error and not connection error, reset Send\_Busy and Conn\_Error immediately. If connection error, reset them after 5 seconds.



Network 11: Debug 1



Network 12: Debug 2

