FB1 - <offline>

"Cyclic_Operation"

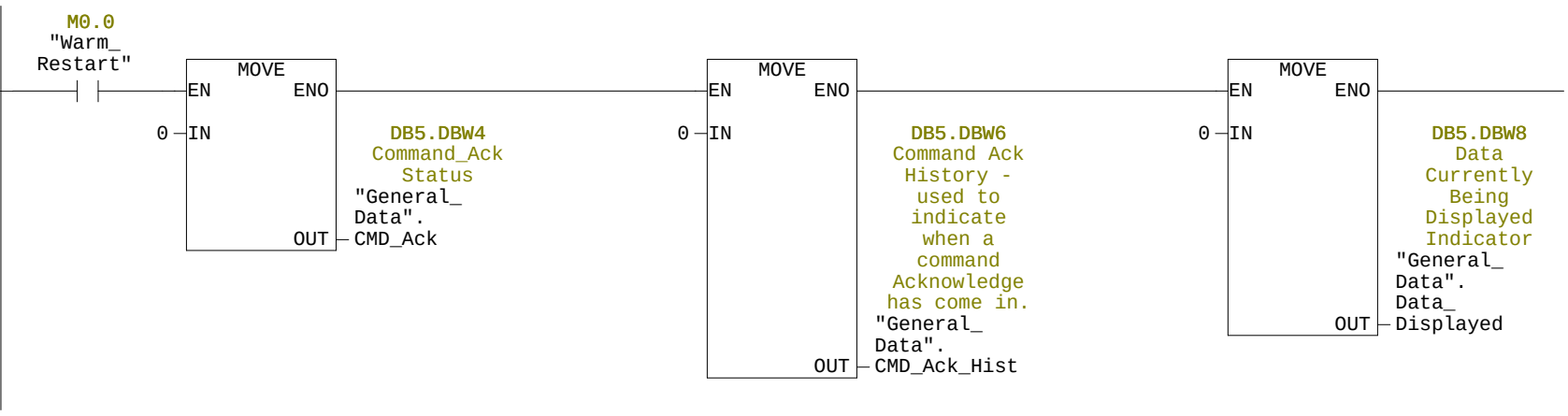
Name: **Family:**
Author: **Version:** 0.1
Block version: 2
Time stamp Code: 06/24/2015 02:33:38 PM
Interface: 06/22/2015 09:29:15 AM
Lengths (block/logic/data): 01494 01296 00030

Name	Data Type	Address	Initial Value	Comment
IN		0.0		
OUT		0.0		
IN_OUT		0.0		
STAT		0.0		
TMR_CMD_Ack	TON	0.0		
TEMP		0.0		
CMD_Ack_TMR_Done	Bool	0.0		
Return_Val	Int	2.0		

Block: FB1 Cyclic Operation

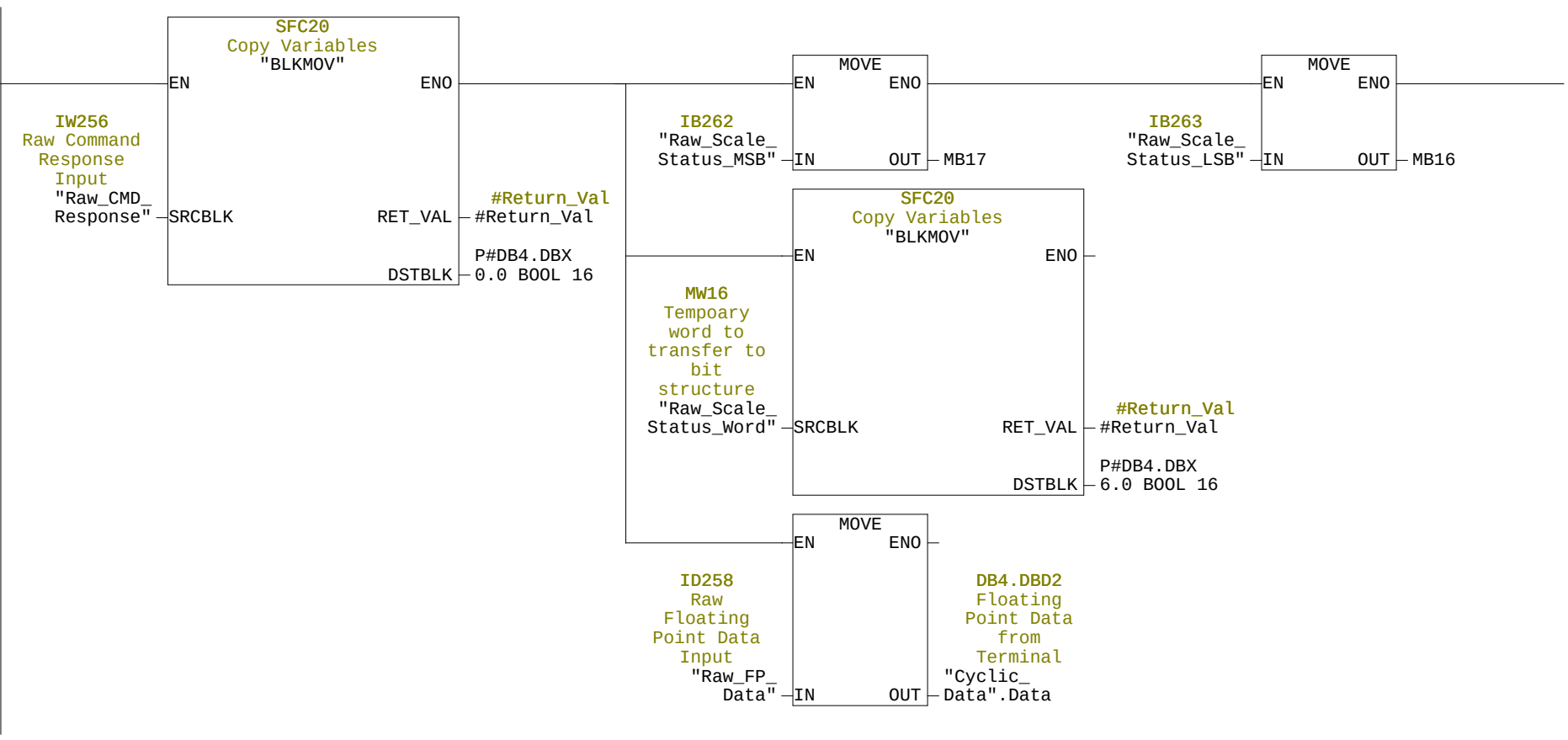
This program provides an example of how an IND131/331 Indicator can be used by a PLC to monitor weight, send commands, and do a calibration procedure from the PLC.

Network: 1 Initialize process on Restart



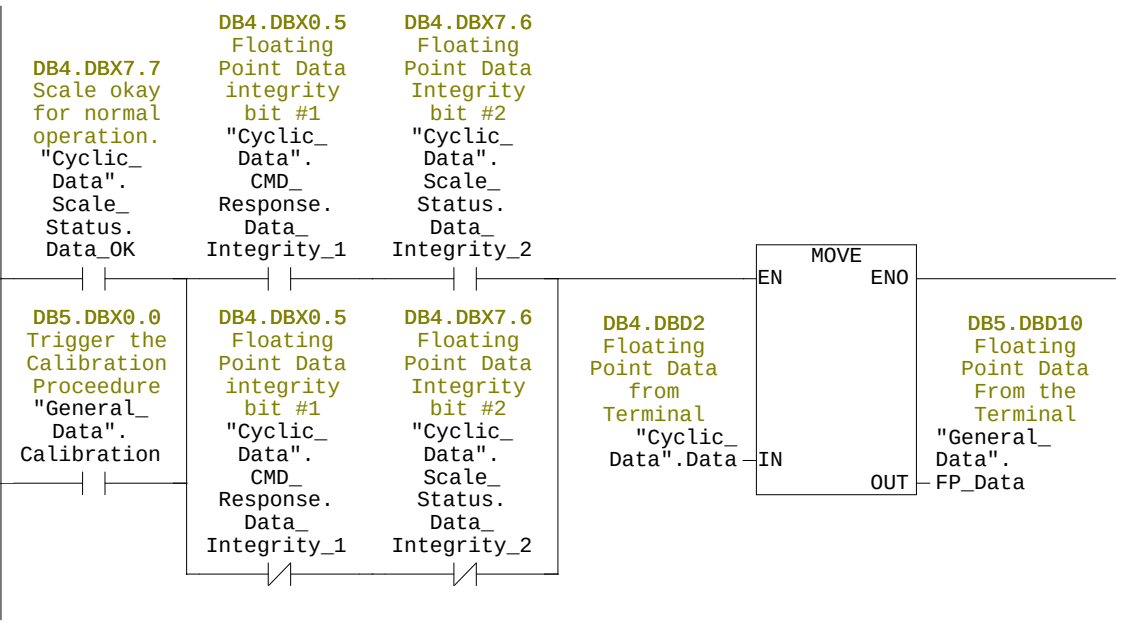
Network: 2 Read the Command Status and the Scale Status

Get the Command Status and the Scale Status from the Input buffer. We'll use these registers to validate the data coming in on the next rung. Note that we have to swap the bytes for the Scale Status to get things to line up correctly.



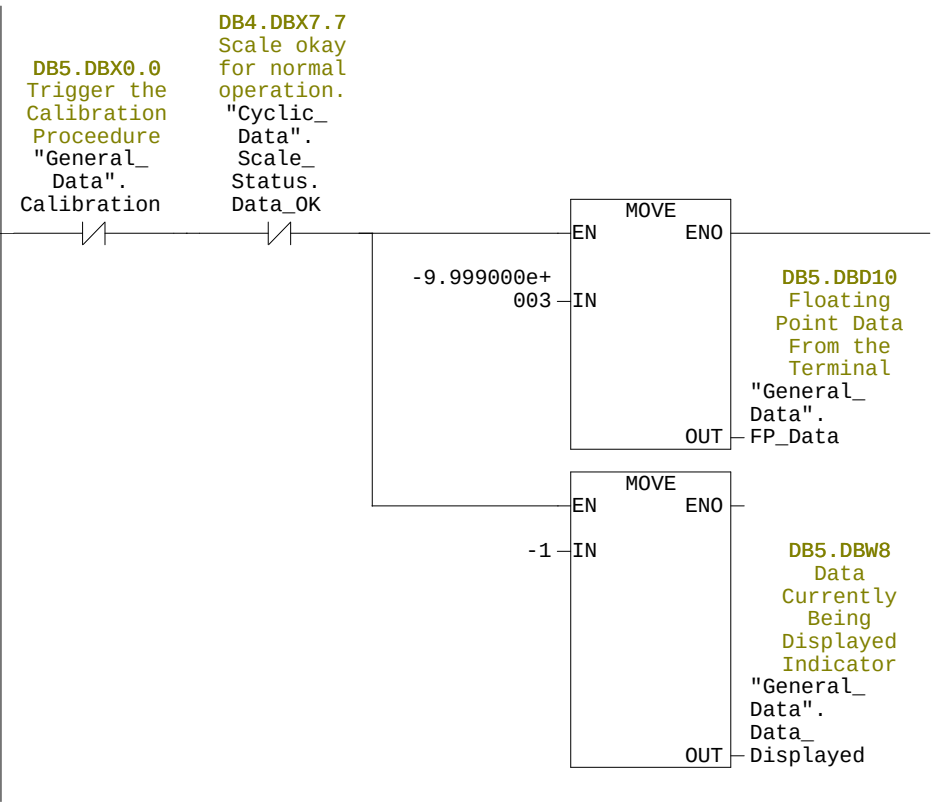
Network: 3 Update the data read from the ProfiBus IND

Only update the data if the Data OK bit is on OR if the Calibration Procedure
is
in progress, and the Data Integrity bits match (indicating that the data
inbetween the bits is valid). Otherwise, throw the data away.



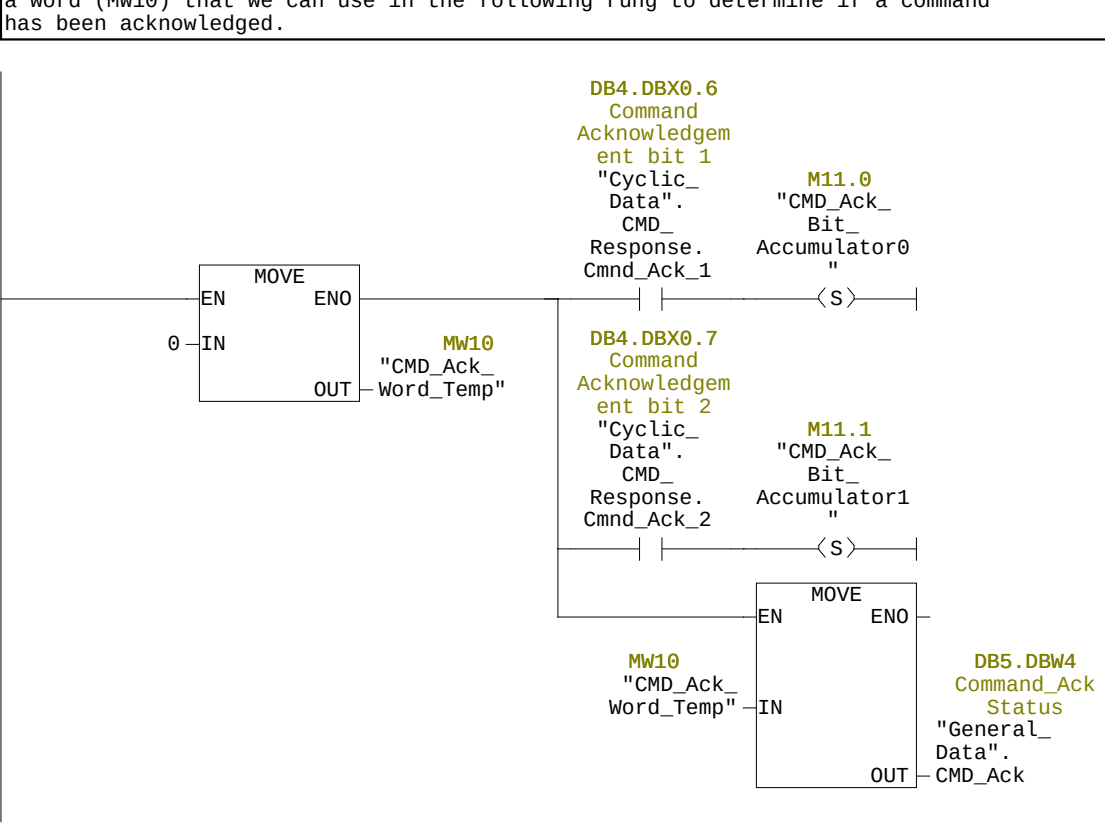
Network: 4 Data OK bit is OFF

If we're not Calibrating AND the Data_Ok bit is off, indicate an error in the
Floating Point value by writing a -9999.0 to it, and also indicate an error in
the Data Displayed variable by writing a -1 to it.



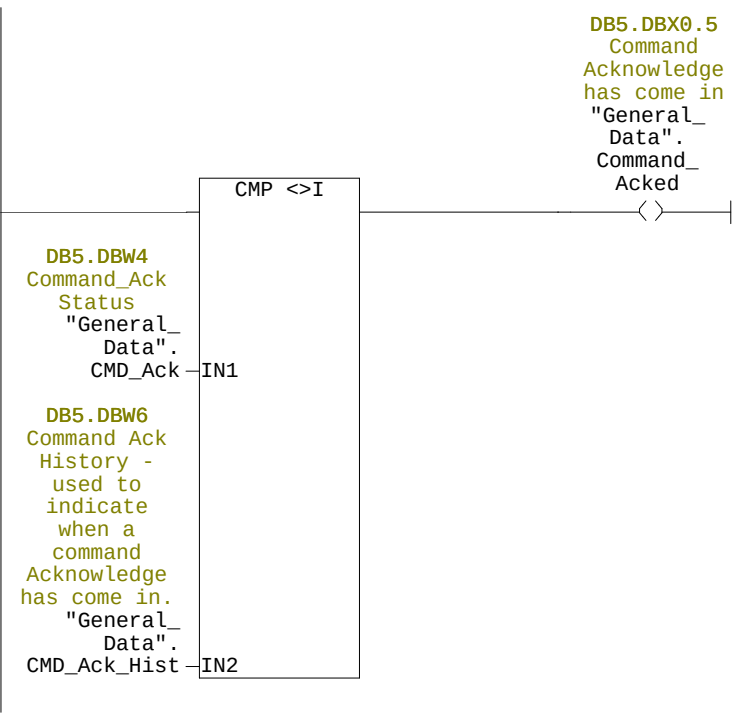
Network: 5 Read the Command Acknowledgement status

Grab the two Command Acknowledgement bits out of the status and stuff them into
a word (MW10) that we can use in the following rung to determine if a command
has been acknowledged.

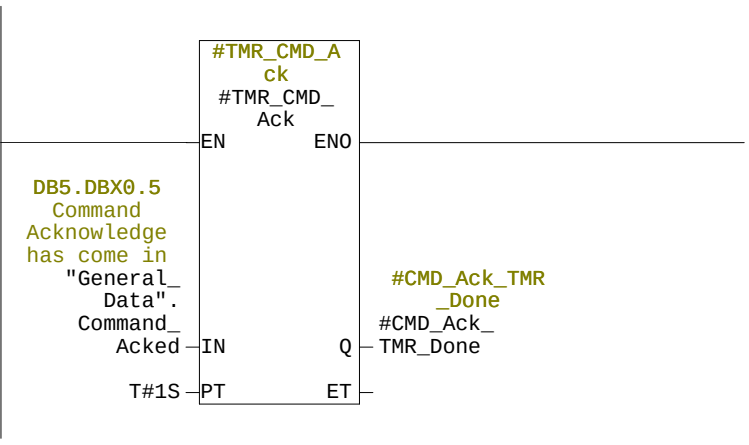


Network: 6 Handle Command Acknowledged bit

When a Command Ack is detected (CMD_Ack is NOT Equal to CMD_Ack_Hist) the turn on the Command Acked bit and run a timer.

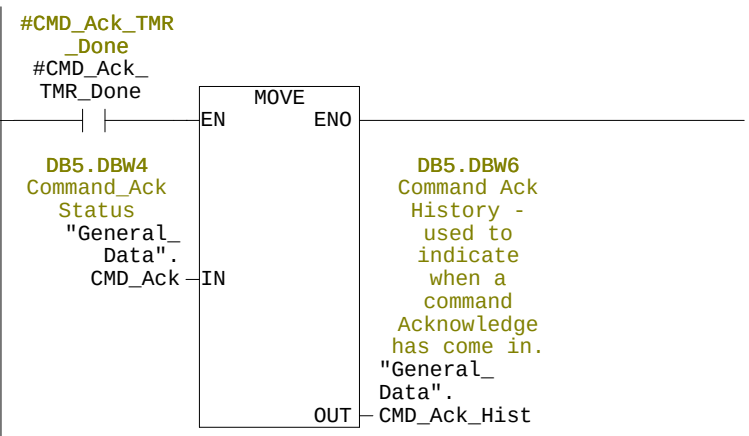


Network: 7 The Command ACK Timer



Network: 8 Command ACK Timer Complete

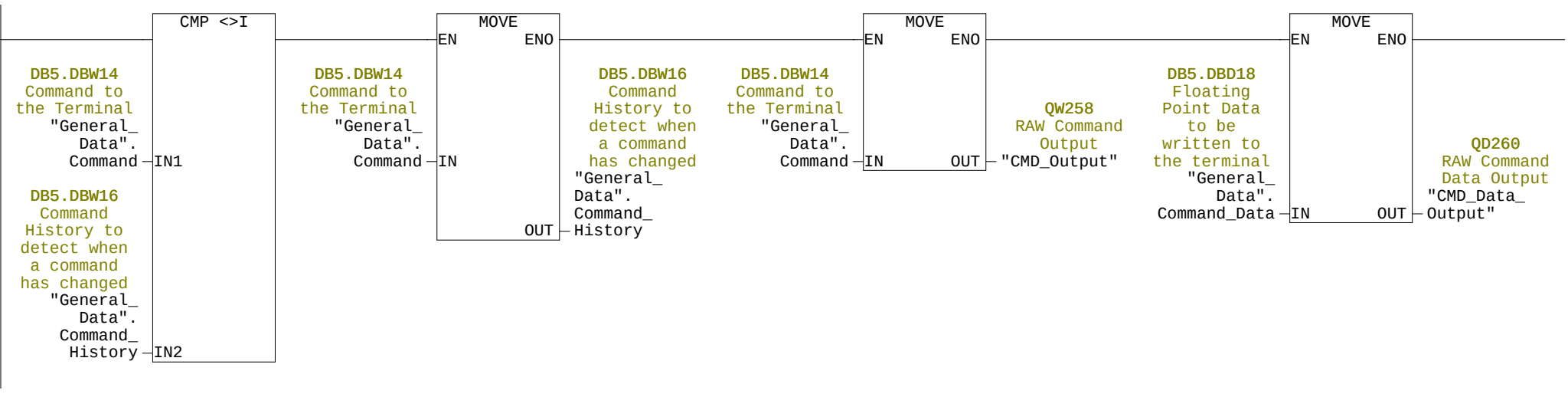
Whe the Command Ack timer expires, set the history to the new CMD_Ack state, which shuts everything off.



Network: 9 Update the Command to the IND

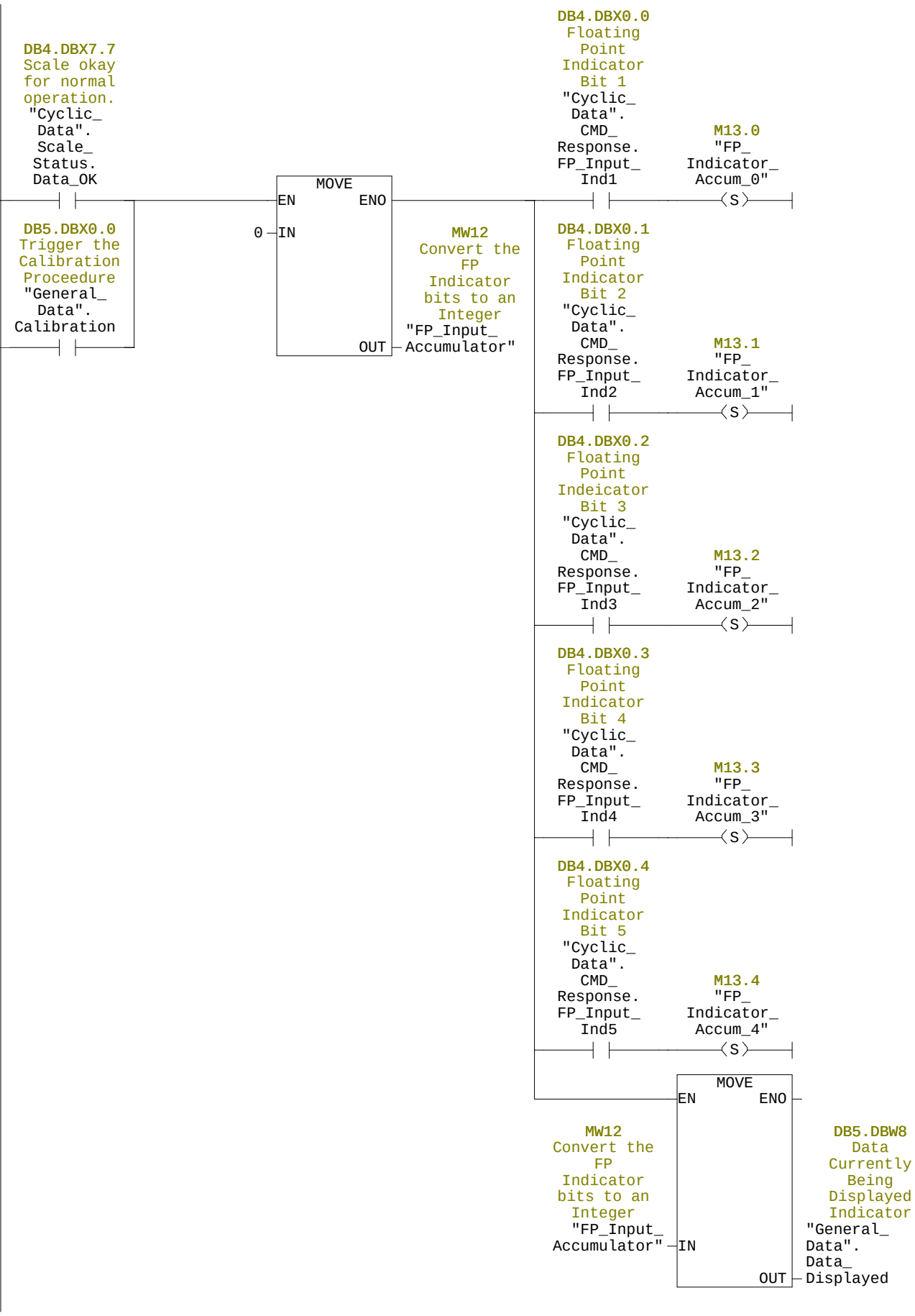
The IND only acts on a command if it sees a change from the previous command. That means if you need to send send another Tare after the first Tare, there must be another command between them - such as Display Net Weight.

This rung waits until the comand changes, then it writes the Command, and the Command Data to the PLC's output buffer to the IND. It then updates the history.

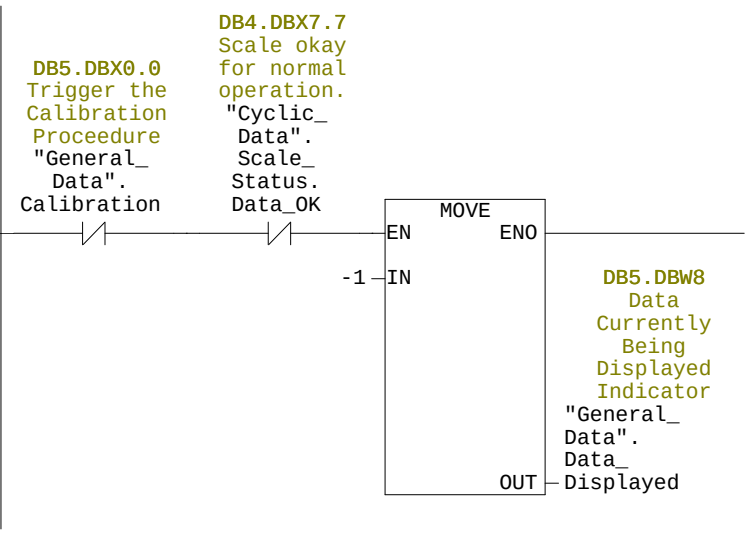


Network: 10 Returned floating Point value type indicator.

Map the Floating Point Input Indicator bits into a word so we can decode what type of data the Indicator is currently returning to us. See table in the PLC Inteface Manual for a mapping of these values. Note that we use MW12 to accumulate the bits in to form an Integer value that is then written to the Data_Display Value in DB5.



Network: 11 Indicate Error in Floating Point Indicator



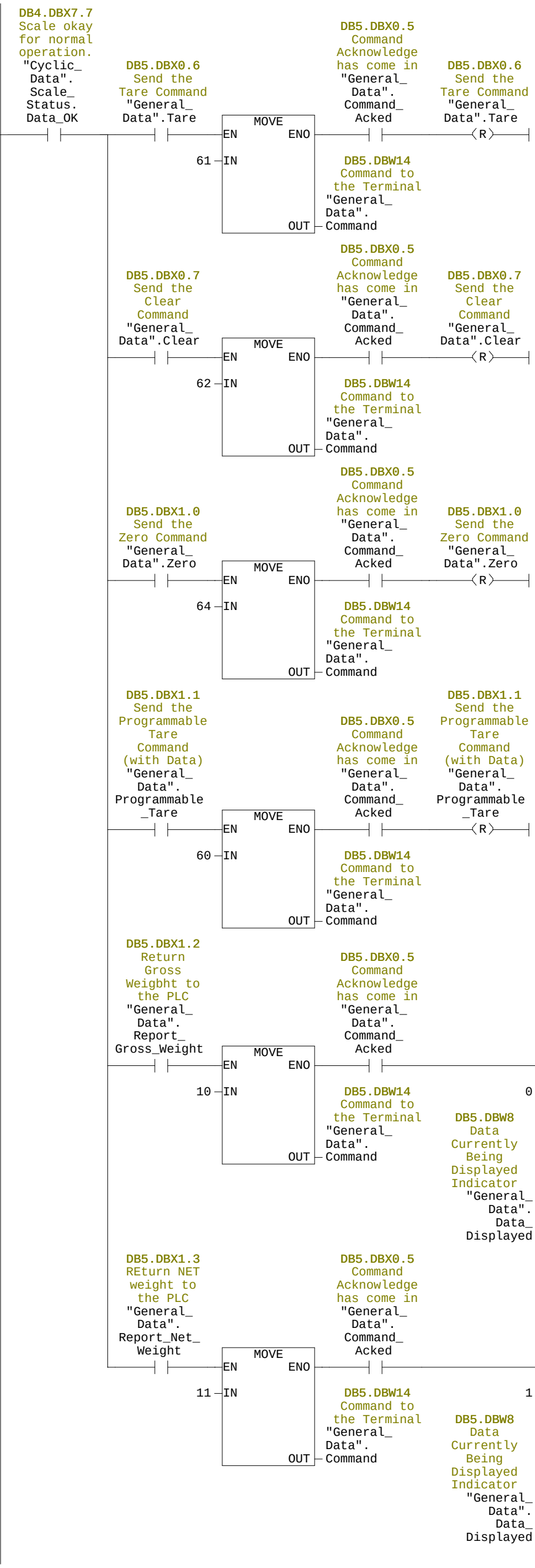
Network: 12 Various example commands

This rung allows triggering of some sample commands to the Indicator. Your own logic does not need to function this way. It only needs to write a value to "Command", and if necessary, to "Command_Data."

The MOV instruction for IND_FP_Data is only so that the returned data is easy

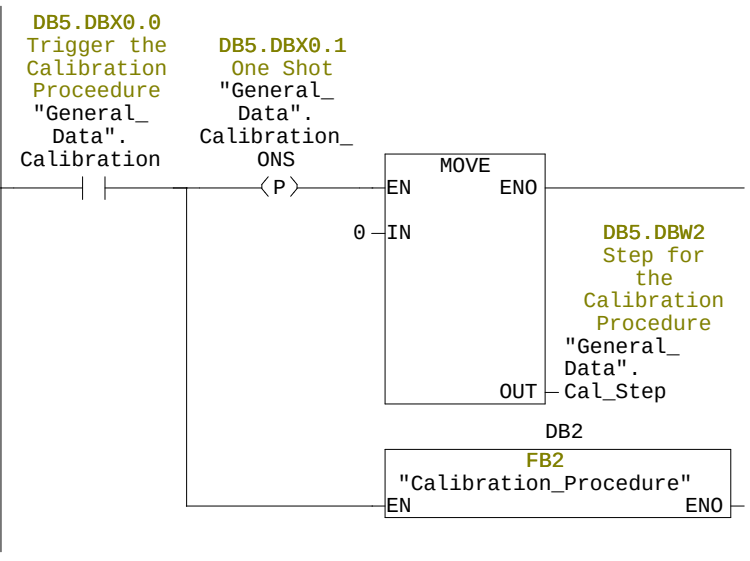
to read after one of the command bits has been set.

Other commands that can be sent to the Indicator can be found in the PLC Interface Manual.



Network: 13 Calibration Routine Request

If the Calibration routine has been requested, initialize the Calibration step

sequence to zero and then run the procedure.

The procedure will clear the request flag when it is complete.