SECTION G
PARAMETER SECURITY

Revision Date: 7-23-24

Description

The Parameter Security feature is used to guard the Controller's Parameters from unauthorized tampering. It requires the entry of a 48 bit Security Code in order to gain Write Access to the Parameters. Security Code entry is not required to simply view the parameters, but it is required to change their value.

Each of the three Communication Ports (ENET1, ENET2 & COM1) have their own Parameter Security.

Entering the Security Code through one of the communication ports, unlocks the Write Access of the Parameters but only through the communication port through which you entered the Security Code, and leaves the locked / unlocked status of the other two communication ports unchanged.

Communication Port ENET1 is designated for connection to SCADA. Write Access protection covers all the Modbus Registers (Setup Parameters), and all the Modbus Coils (Control Bits).

Communication Port ENET2 is designated for connection to a local HMI (SC5000-CTS-HMI). Write Access protection covers all Modbus Registers (Setup Parameters), but not the Modbus Coils (Control Bits).

Communication Port COM1 is designated for connection to a local HMI (SC5000-LED-HMI). Write Access protection covers all Modbus Registers (Setup Parameters), but not the Modbus Coils (Control Bits).

The Security Code Entry is divided into three parts (SCE3 : SCE2 : SCE1), where each part is a separate 16-bit parameter that has an entry range of 1 - 65,535. All three parts of the Security Code must be entered correctly to unlock the Setup Parameters.

Once unlocked, the Write Access of the Parameters and Control Bits will remain unlocked until the Write Access Relock Delay expires, or until an operator enters a "1" into the Security Code Entry SCE1 or SCE2 or SCE3.

Communication Port ENET1 also has a "Parameter Security Alert" feature that detects the Suspicious Activity of an Unusually High Number of Entries into the Security Code Entry Parameters (SCE1, SCE2 and SCE3). If Suspicious Activity is detected, the Controller locks out all further entries into Parameters SCE1, SCE2 and SCE3 and issues Fault Code 1201, which is written to Fault Code Parameters FLC and LFC. Status of the "Parameter Security Alert" is also available from Modbus Coil 189 (Register 40012 Bit 12). To reset the ability to write to the Security Code Entry Parameters (SCE1, SCE2 and SCE3) through Communication Port ENET1, Fault Code 1201 must be reset from a Local HMI through Communication Port ENET2 or COM1.

User / Operator Info.			SCADA	
Parameter	Default Value	Current Value	Register Address	Description of Parameters and SCADA Notes
Security Code Entry				
SCE1	11	-	42078	Security Code Entry - **SCE3 : SCE2 : SCE1** Range: 1 - 65,535 Enter Your Security Code Here to Unlock the Parameters. Manually Relock by Entering "1" into Parameter SCE1, or SCE2, or SCE3. If you forget your Security Code, have the Serial Number and consult the factory.
SCE2	12	-	42079	
SCE3	13	-	42080	
The "Parameter Security Alert" status is available from Modbus Coil 189 (Register 40012 Bit 12).				

PARAMETER SECURITY

To change the Security Setup, enter the Current Security Code into Parameters **cSCE3**, **cSCE2** and **cSCE1**.

User / Operator Info.			SCADA	
Parameter	Default Value	Current Value	Register Address	Description of Parameters and SCADA Notes
Security Setup				
cSCE1	-	-	-	Security Code Entry - **cSCE3 : cSCE2 : cSCE1** Range: 1 - 255 Enter Your Security Code Here to Unlock the following Security Setup Parameters: **S.001**, **S.002**, **S.003**, **S004**, **SCS1**, **SCS2** & **SCS3**
cSCE2	-	-	-	
cSCE3	-	-	-	
S.001	0		-	**ENET1** Write Access Mode 0 = Always Unlocked 1 = Requires Security Code Entry 2 = Always Locked (This mode is only available for ENET1.)
S.002	0		-	**ENET2**
S.003	0		-	**COM1**
S.004	60 min.		-	Write Access Relock Delay Range: 10 - 480 minutes
SCS1	11	-	-	Change Security Code - **SCS3 : SCS2 : SCS1** Range: 2 - 255 Establishes the Numerical Values that will be Accepted as the Security Code.
SCS2	12	-	-	
SCS3	13	-	-	

Parameter Security Notes:

1. Write Access Mode “0” (Always Unlocked), provides Write Access for all Parameters and Control Bits through the respective Communication Port.
2. Write Access Mode “1” (Requires Security Code Entry), provides Write Access through the Communication Port through which the Security Code was entered, leaving the “Write Access” of the other Communication Ports unchanged.
3. Write Access Mode “2” (Always Locked), provides additional protection from tampering. In this mode, no Parameters or Control Bits may be written to, even with Security Code entered. This feature is only available on Communication Port ENET1, which is intended to be connected to SCADA.
4. Changing any of the above Security Setup parameters can only be done from the local HMI connected to Communication Ports ENET2 or COM1, and only after the entry of the current Security Code into Parameters cSCE3, cSCE2 and cSCE1. The Security Setup parameters will automatically relock after ten minutes, or you may manually relock them by entering a “1” into cSCE3 or cSCE2 or cSCE1.
5. Attempts to remotely read the Security Code Entry or Change Security Code registers will always return a zero.
6. Reset of a Fault Code Modbus Coil 305 (Register 40020 Bit 0) is always allowed without a Security Code Entry.

PARAMETER SECURITY - Touchscreen HMI SCREENS