	GED Integrated Solutions, Inc 31100 Diamond Parkway Glenwillow, OH 44139	Document No.: APN-0208 Revision: B	Date: 03/13/19

Description: **Smart Extruder + to Intercept i3 Communication Upgrade and Setup**			
Written By: Brady Jacot			
Approved By: Bill Briese			
Revision History:	Changed By:	Release No.:	Date:
A) Original Release	BSJ	05159	03/13/19
B) Changed IP Address	BSJ	05202	06/14/19

1.0 Overview

1.1 This application note will describe the steps required to install and setup communications between a Smart Extruder + machine and an Intercept i3 machine.

2.0 Requirements

2.1 For the Smart Extruder +, the PLC version needs to be updated to at least version **2.2.0**.
- 2.1.1 Compactflash, 2GB, 100-6696
- 2.1.2 SOFTPLC0113, Version 2.2.0 or later.

2.2 For the Intercept i3, the PLC version needs to be updated to at least version **2.0**. WinFrame i-3 version **5.03.00** or later needs to be installed. A UMAC turbo CPU will also need to be 'flashed' with the Modbus protocol. This communication protocol will allow the UMAC CPU to communicate with the B&R CPU in the extruder. Furthermore, the IP address of the UMAC CPU will have to be changed to be on the same subnet as the B&R CPU.

- 2.2.1 UMAC CPU, 100-7974
- 2.2.2 SOFTPLC0040, Version 2.0 or later.
- 2.2.3 APN-0062. PMAC/UMAC Installation Instructions with the PTalkDT.OCX ActiveX Control

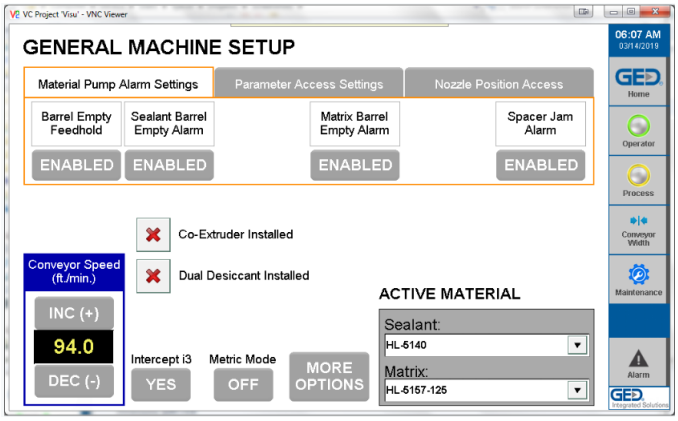
2.3 The 2 machines will require an interconnection. An Ethernet cable needs to be connected between the Ethernet switch in the Intercept i3 cabinet to the Ethernet switch located in the Smart Extruder + cabinet.
- 2.3.1 Ethernet Cable, 50-ft. 100-5226

3.0 Procedure

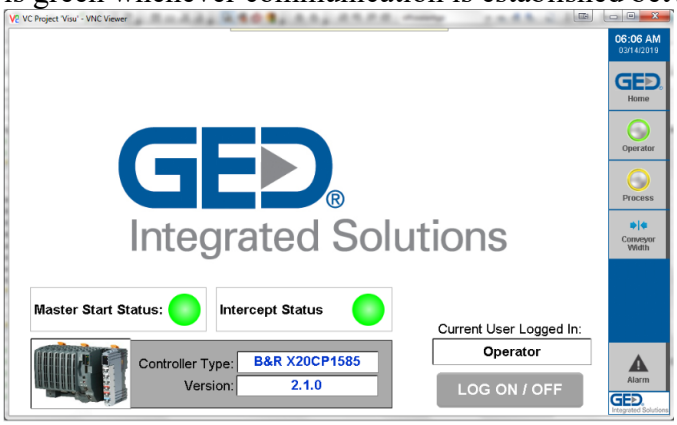
3.1 Smart Extruder + Machine. To configure the Smart Extruder + machine for communication with the Intercept i3, the plc program needs to be updated, and then the option needs to be enabled from the HMI.

3.1.1 For the Smart Extruder +, the PLC program needs to be updated. The simplest way is to install a compactflash with the latest revision on it. Once the program is running, Intercept i3 communications can be enabled.

3.1.2 Under the General Machine Setup button in the Maintenance screen, there is a button to enable or disable the Intercept i3 communications.



3.1.3 From the Home screen there is a new indicator for Intercept status. The indicator is green whenever communication is established between the 2 machines.

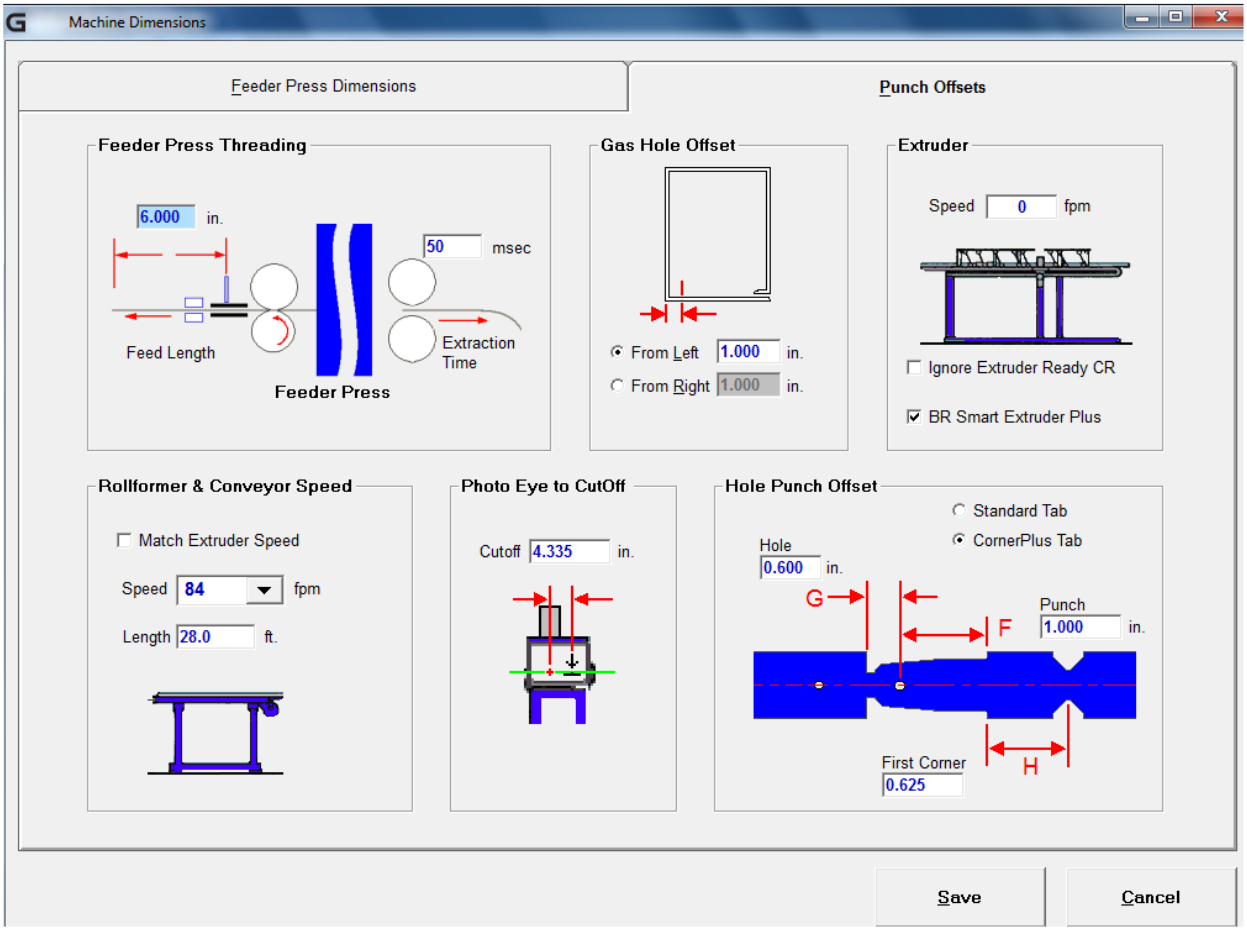


3.2 Intercept i3. To configure the Intercept i3 machine for communication with the Smart Extruder +, a new CPU will need to be installed with the latest plc program. The new CPU has a different IP address so the network settings on the pc will need to be adjusted. The new IP address also needs to be added to the PMAC setup. And then the WinFrame software needs to be configured to run with a Smart Extruder + machine.

3.2.1 Since the CPU will need to be replaced, the new program should already be installed on the CPU. The machine should be powered down, the old CPU removed from the UMAC rack, and the new CPU installed in its place.

3.2.2 The settings of the network card on the PC need to be adjusted to allow communications to the new IP address of the UMAC CPU. Reference APN-0062 to setup PC network card. Note that the previous revision of this APN required changing the IP address to 192.168.50.XXX subnet – after trying to set this up at a customer site, it was changed back to the 192.168.137.XXX. The IP Address of the UMAC should be 192.168.137.3.

3.2.2.1 The last thing that needs to be done is to go into Winframe and Enable the check box under Machine setup



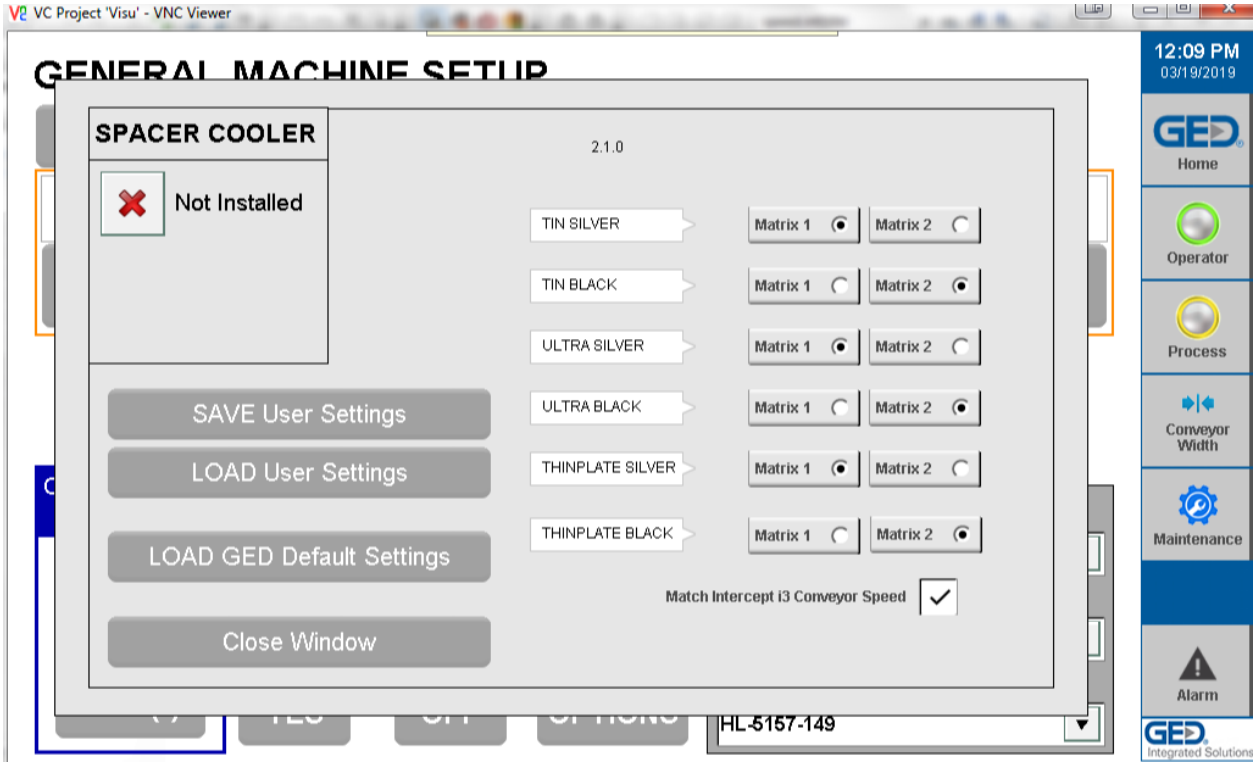
4.0 Operation

4.1 The purpose of this update is to allow the Smart Extruder + machine to automatically change conveyor width, nozzle position, and the matrix type, if it happens to have dual desiccant capability.

4.1.1 This is accomplished by sharing information in the UMAC CPU with the B&R CPU. The Intercept CPU contains size and spacer material information about the spacers being made.

4.1.2 The spacer size information in the Intercept CPU is defined in 0.01 mm units. So the register would contain a value of 1349 would mean 13.49mm or 17/32. This value is then used in the Smart Extruder + CPU to look up in its list of spacers and find the closest size defined. The exact size of the the spacer width is not stored in the smart extruder +, rather, the conveyor width is defined as that size. So the exact size of 17/32, or 0.531" is not stored in the control, but rather the conveyor width value, more likely a value of 0.535 or so.

4.1.3 For Dual Dessicant equipped smart extruders, the spacer material is also passed from the Intercept to the extruder. Depending on the spacer material, the extruder can then change matrix heads automatically. This feature is setup under the smart extruder + General Machine Setup screen, under the More Options button.



4.1.4 This screen allows selection of Matrix material for each type of spacer material.

4.1.5 There is also a checkbox labeled 'Match Intercetp i3 Conveyor Speed.' When this is enabled, the extruder conveyor speed will match the speed of the Intercept i3 conveyor.

4.1.6 It should be noted that, for simplicity, a few of the physical IO connections between the Smart Extruder + and the Intercept i3 have been removed. Namely the Extruder Ready Relay, the Auto Increment Relay, and the Nozzle Change Complete Relay are no longer hard-wired from the extruder cabinet to the conveyor IO block. Since there is now an Ethernet connection between the 2 PLCs the info can be shared via that connection.

