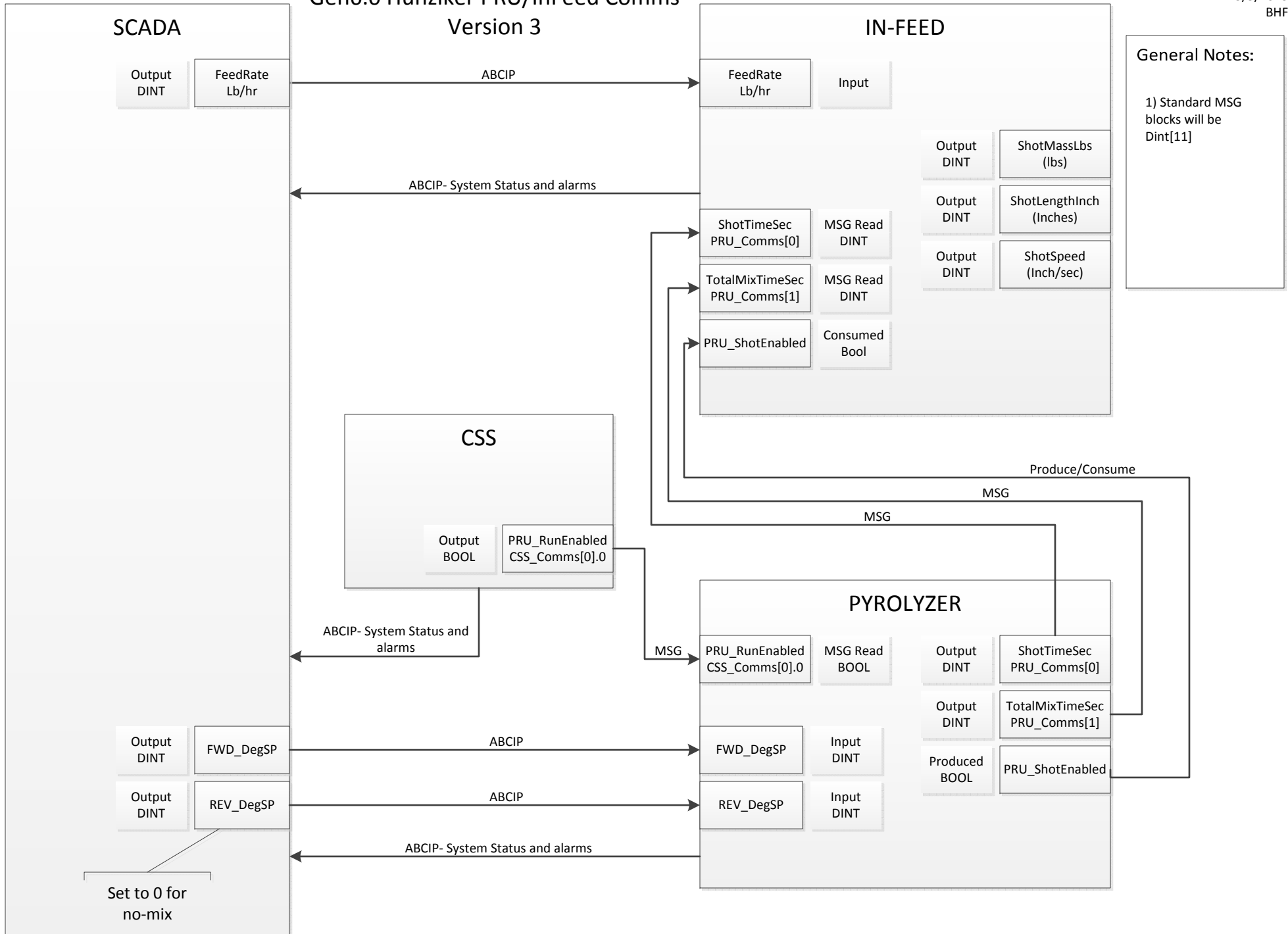


# Gen6.0 Hunziker PRU/InFeed Comms Version 3

3/5/2013  
BHF



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## Version 3

### Definition of Terms:

#### 1) Tag Source

Input = Input variable (derived by internal process)

Output = Output variable (derived by outside process)

#### 2) Tag Types:

BOOLEAN = Single bit (On/Off condition)

DINT = 32-bit integer, no decimal allowed

#### 3) Communication Types:

ABCIP = Ethernet comms from SCADA to Allen Bradley Logix5000 processors

MSG = Ethernet comms PLC-to-PLC

Produce/Consume = Ethernet comms, unique to Allen Bradley Logix5000 procedure

#### 4) Tag Naming Standards

CamelCase = keeps variable names short but readable

Use of Underscores = use when connecting two words with preceding capital letters

#### 4) Process Variables

FeedRate = User set-point to define the total mass of raw materials through the system (units of pounds/hour)

FWD\_DegSP = User set-point to define the number of forward rotations of the pyrolyzer screws (units of degrees)

REV\_DegSP = User set-point to define the number of reverse rotations of the pyrolyzer screws (units of degrees)

- the standard values should be between 150° and 180°.

- to define a “no mix” function, set REV\_DegSP = 0°

PRU\_RunEnabled = This is the master enable from the CSS that enables heating in the pyrolyzer (synonymous with “ECOOL” or “PRU\_RUN\_DISABLE”)

ShotTimeSec = PRU-calculated variable defining the timeslice for each shot (units of seconds).

- This is a function of: FWD\_DegSP, REV\_DegSP, VFD Speed, Gearbox Ratio

- with REV\_DegSP = 0 defines a no-mix condition, essentially making the ShotTimeSec approach infinity.

- ShotTimeSec max should be 999999

TotalMixTimeSec = PRU-calculated variable defining the total mix cycle time (units of seconds)

- This is a function of: FWD\_DegSP, REV\_DegSP, VFD Speed, Accel Time, Decel Time, Gearbox Ratio

- with REV\_DegSP = 0 defines a no-mix condition, essentially making the TotalMixTimeSec approach infinity.

- TotalMixTimeSec max should be 999999

PRU\_ShotEnabled = on/off conditions that tells the InFeed systems when feed process is allowed. To maximize the feed timing, this tag will utilize produce/consume comms

ShotMassLbs = InFeed-calculated variable defining the pounds of raw material in each shot (units of pounds)

- This is a function of: FeedRate and TotalMixTime

- In a no-mix condition, the ShotMassLbs should be the maximum allowable mass per shot (based on the mechanical/instrumentation limitations)

ShotLengthInch = This is an InFeed measured value (units of inches)

- After the raw material is loaded and compressed, the shot plunger needs to measure the shot height at a pre-defined compression measurement

- Possible measurements: hydraulic pressure or positioner deceleration

ShotSpeed = this is an InFeed calculated variable defining the velocity to add the compressed shot into the PRU

- This is a function of ShotTimeSec

- in the case of the no-mix condition, the shot time will be defined by FeedRate