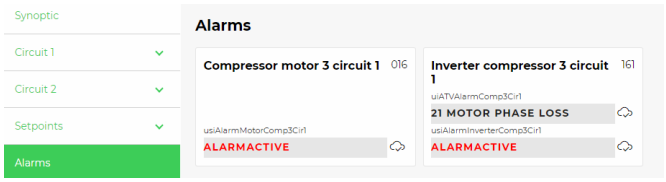
# Baseline CH-HP-CR
# Changes history

## Release 2.08.19  06-12-2021

**PLC:**

- **Fixed Communication time out on IQ Modules.**
  **Changed retry policy in order to avoid synchronous retry**



## Release 2.08.18  29-11-2021

**HMI:**

- **Fixed Enumerative for inverter compressor.**

## Release 2.08.17  25-11-2021

**PLC:**

- **Added dedicated alarm for Inverter compressors.**
- **Fixed DO (General Alarm), This alarm will be active if a critical alarm blocks the unit. In previous version the Digital Output was not working.**
- **Added parameters to manage circuit rotation in case of Chiller units.**
- **Added generic regulation description in IO Mapping list.**

**HMI:**

- **Added Parameter/Wizard menu available for L3 used to enable /disable inverters.**

**WEB:**

- **Updated WebServer Template to version 1.5.0**

## Release 2.08.16 03-11-2021

**PLC:**

- **Fixed simultaneous start of compressor of different circuit in case of reset of a general alarm.**
- **Fixed Evaporator pump Flow, now the pump is not switched off in case of flow switch event.**
- **Removed Low inlet temperature alarm, not necessary.**
- **Added Antifreeze Low temperature differential.**
- **Fixed Emergency alarm deadlock, now in case of an emergency alarm is not necessary reboot the PLC.**

**HMI:**

- **Added Antifreeze Low temperature differential, parameter 01.218**

**WEB:**

- **Added Antifreeze Low temperature differential, parameter 01.218**

## Release 2.08.15 27-10-2021

**PLC:**

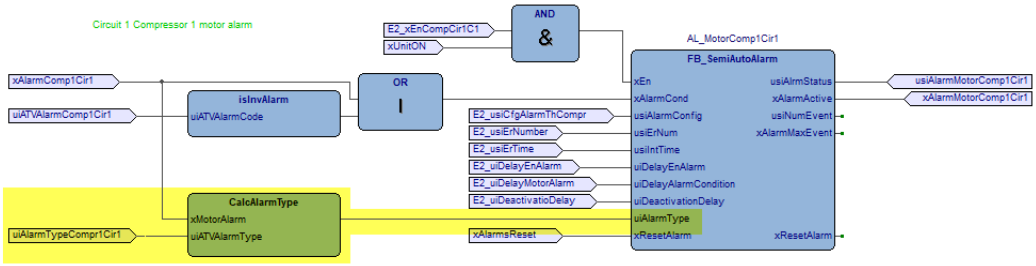
- **Fixed Logger array vectors size, regression of the release (2.08.12 15-10-2021)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 38 | MAX_LOG_DATA | UINT | Auto | No | 60 | CONSTANT | TODO : Update if You add Log data |
| 39 | MAX_LOG_EVENT | UINT | Auto | No | 60 | CONSTANT | TODO : Update if You add Log event |

## Release 2.08.14  27-10-2021

**PLC:**

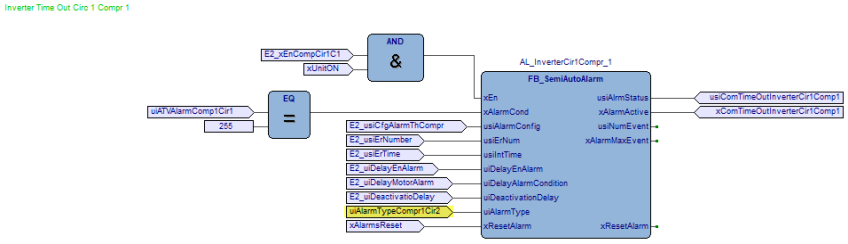
- **Fixed Alarm visualization of SE-i1 inverters.**



# Release 2.08.13  26-10-2021

**PLC:**

- **Fixed Alarm Time Out on compressor 1**

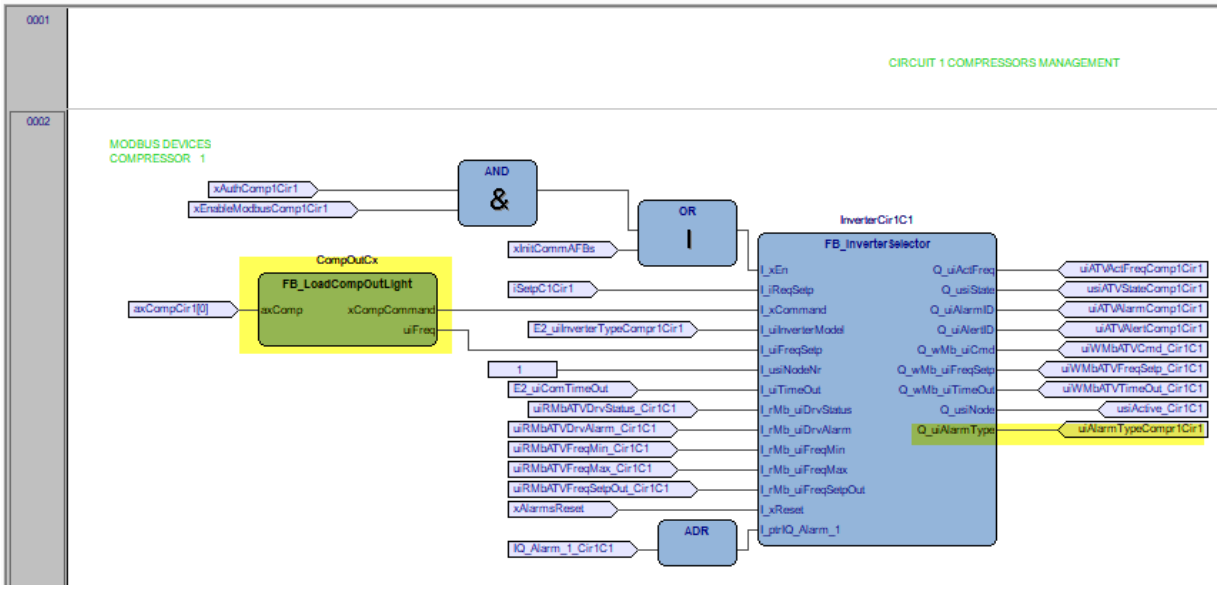


## Release 2.08.12 15-10-2021

**PLC:**

- **Fixed IO Mapping Form, only the available IO will be listed in the IO allocation Map.**
- **Added Generic regulation probes in the data logger variables.**
- **Added new alarm form in the web server to be able to show alarm detail of the Generic regulator and of the inverter Alarm.**
- **Updated translation language; added missing strings.**
- **Added XVD alarm decoding strings in the local HMI form.**
- **Fixed save configuration in usb memory, the String parameter is now saved in the PARAM.RAW file.**
- **Added alarm type management to set alarm action to "Warning" or to "Alarm" in case of different inverter type. Inverter SE-I1 has been set to warning in case of any alarms or in case of com time out.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | CompOutCx | FB_LoadCompOutLight | Auto | No | | .. |
| 6 | FFATV22_Cir1C1 | RS | Auto | No | | .. |
| 7 | FFATV22_Cir1C2 | RS | Auto | No | | .. |
| 8 | FFATV22_Cir1C3 | RS | Auto | No | | .. |
| 9 | FFATV22_Cir1C4 | RS | Auto | No | | .. |




- **Fixed reset History, now the alarms string in case of generic alarm will be cleaned from the reset history button.**

**NOTE:** **Compiled with FSP 1.4.0 and BIOS 596.12**

## Release 2.08.11 16-09-2021

**PLC:**

- **Fixed Flickering of solenoid valve in case of DL90 Set to EV. The Serial control of the DO out of the XVD is enable only if DL90 and DL91 are set to RS485.**

## Release 2.08.10 02-09-2021

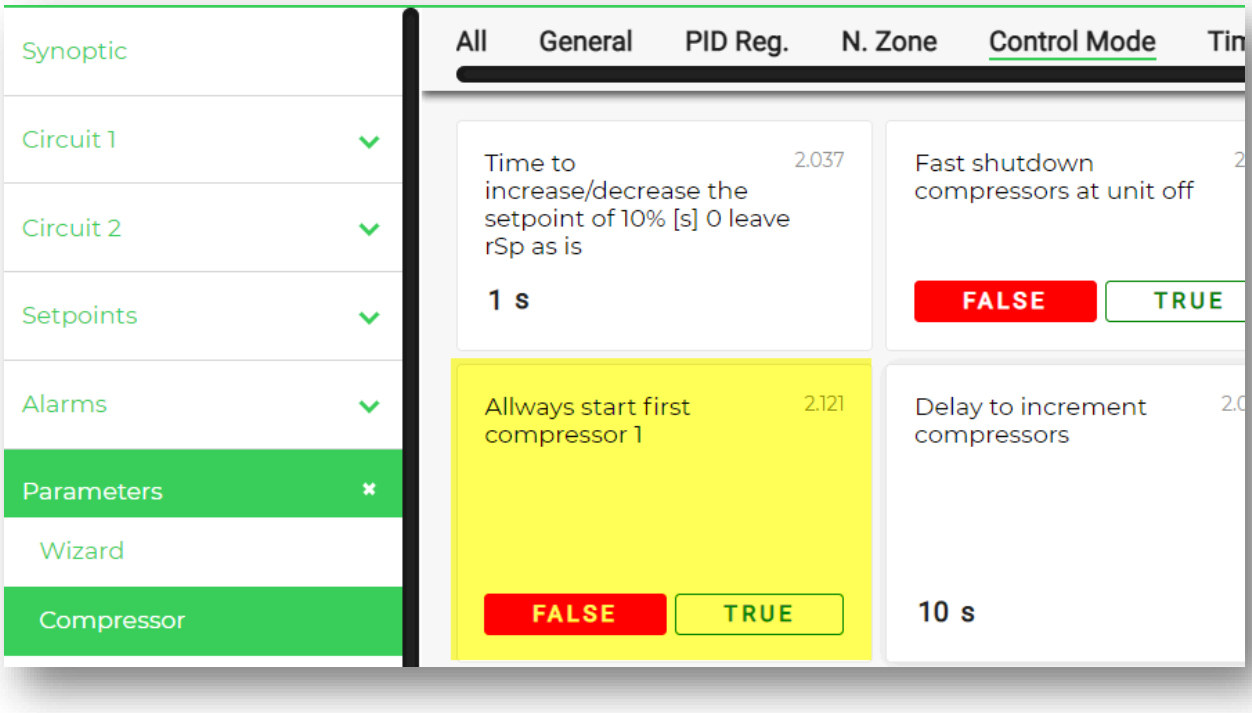
**PLC:**

- **Fixed Discharge temperature alarm in case of XVD expansion valve.**
- **Fixed Evaporator pump on/off activation in case of Automatic/semiautomatic alarm.**
- **Fixed Source pump alarm; In case of source pump alarm, the compressor and the evaporator pump will be stopped.**
- **Added new feature to send mail via SMTP protocol in case of alarm event.**

## Release 2.08.9 24-08-2021

**PLC:**

- **Added new parameter 2.121 to enable/disable the feature “always start with compressor 1 and end with compressor 1”**



# Changes history

## Release 2.08.8 23-08-2021

**PLC:**

- **Fixed IQ Module inverter reset alarm on compressor 5**
- **Fixed compressor configuration alarm in case of IQ module discharge temperature probe disconnection.**
- **Fixed communication with IQ modules with application OFF**

**WEB:**

- **Fixed missing RTC setting in webserver.**
- **Compiled with new webserver template.**

## Release 2.08.7 16-08-2021

**PLC:**

- **Fixed IQ Module inverter Time out, Regression introduced in version 2.8.1**

## Release 2.08.6 06-08-2021

**PLC:**

- **Fixed Discharge temperature probe alarm in case of XVD valve and the Discharge is not assigned to the XVD valve.**
- **Fixed compressor discharge max temperature alarm of the not used compressors.**

**WEB:**

- **Added visibility roles to hide unused parameters.**

## Release 2.08.5 09-06-2021

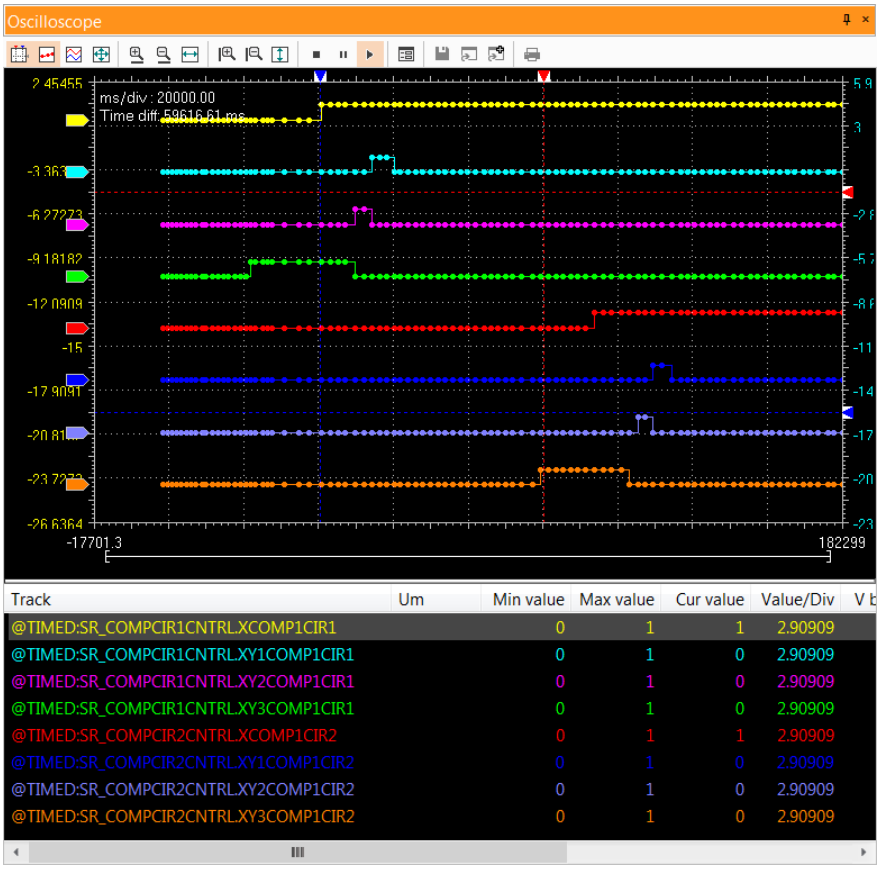
**PLC:**

- **Fixed Min Off Timer in case of compressor alarm the timer always stop the compressor.**

- **Fixed circuit interlock to avoid starting compressor of the second circuit before start of compressor of first circuit. The algorithm always considers the working hour to select the first circuit.**

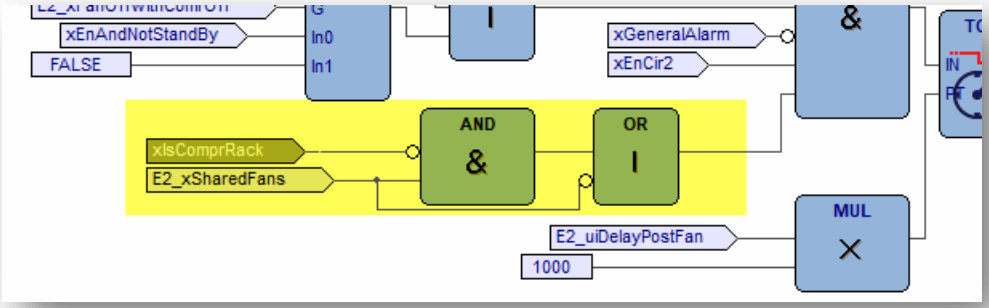
  **This Feature is available by setting the parameter/compressor/general/2.147 to TRUE.**

  **The time used to delay the compressor of the second circuit is the parameter 2.048 (Delay to increment compressors) and 2.049 (Delay to decrement compressors).**



## Release 2.08.4 17-05-2021

**PLC:** **Fixed condensing fan of circuit 2; In case of "Shared Fan" and a "Rack application" the Fan of circuit 2 will be set to disable. This because the twin circuit rack uses a common discharge line and the circuit 2 has no HI pressure probe to calculate the condensing power.**

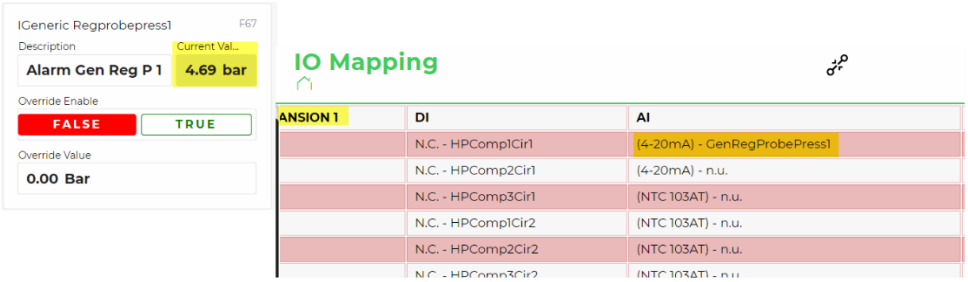



**WEB:** **Fixed Alarm page regression of the version 2.8.3**

NOTE: Validated with HMI Touch Color 1.15

## Release 2.08.3 14-05-2021

**PLC: -Fixed Analog Input configuration of the expansions; now the setting type is correctly sent to the expansion.**




**-Added new feature in the IO allocation algorithm to check automatically the AI configuration in pair.**

**If "ODD" AI configuration is not compatible with "EVEN" analog input, it will be automatically forced to the "ODD" Analog input configuration.**

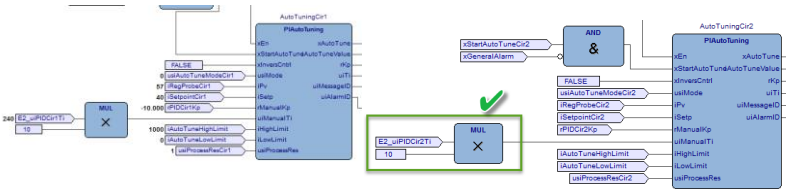
**For instance, if Analog input 3 is 4-20mA and Analog Input 4 is set to NTC it will be set automatically to 4-20mA.**

**-Added detailed information on the IO configuration map**

**(1)= Digital input polarity, (2)= Analog input type, (3)= Digital output polarity, (4)= Analog output type**

| CONTROLLER | DI (1) | AI (2) | DO (3) | AO (4) |
|---|---|---|---|---|
| 1 | N.C. - AlarmComp1Cir1 | (4-20mA) - LowPressCir1 | N.O. - Comp1Cir1 | (0-10v) - FanCir1 |
| 2 | N.C. - AlarmComp2Cir1 | (4-20mA) - HighPressCir1 | N.O. - Comp2Cir1 | n.u. |
| 3 | N.C. - AlarmComp3Cir1 | (NTC NK103) - SuctionTempCir1 | N.O. - Comp3Cir1 | n.u. |

**-Fixed integral time factor in PID regulation of circuit 2.**



## Release 2.08.2 10-05-2021

**PLC: -Fixed proportional band of FAN Factor in case of Temperature regulation.**

**-Fixed Number of circuits in case of Rack application.**

**HMI:** **-Fixed missing alarm code in alarm page and in and alarm history.**

**WEB:** **- Fixed regression of String write.**

**Note1: Validated with HMI Touch color version 1.14**

**-In HMI Touch color version Fixed Compressor page to see compressors of circuit 2.**

**-In HMI Touch Color Fixed missing alarm code in alarm page and in and alarm history.**

## Release 2.08.1 07-05-2021

**PLC:** **-Added HP compressor alarms for all compressor of the circuit 2.**

**-Added option to disable delay between Star and Delta in case of Delta starter motor.**

**-Added new EEVD CANOpen Valve according with the follow table.**

The EEV Modbus address had been updated as follow table:

| Valves | CAN Address | Dip Switch Configuraiton |
|---|---|---|
| Circuit 1 Valve Bipolar EEV A | 20 |  |
| Circuit 2 Valve Bipolar EEV A | 21 | |
| Circuit 1 Valve Unipolar EEV A | 22 | |
| Circuit 2 Valve Unipolar EEV A | 23 | |
| Circuit 1 Valve Bipolar EEV B | 24 | |
| Circuit 2 Valve Bipolar EEV B | 25 | |
| Circuit 1 Valve Unipolar EEV B | 26 | |
| Circuit 2 Valve Unipolar EEV B | 27 | |

**-Added option to set a circuit/ unit in maintenance from digital input by using a generic regulator configured as digital input**

**-Fixed "High Pressure Transducer, also Common High Pressure SW Alarm active, the System only shutdown Compressors Cir1 while the Cir2 still running normally, I think Cir2 should be also shut down since this is Common Discharge line (1x Discharge Line)"**

**WEB Server:**

**-Use last web server template v1.1.5-beta-2021_05_04**

**-Fixed Generic regulator pressure measurement unit and format in IO Value menu.**

**-Fixed missing BIOS and RTC in Parameter menù.**

**-Fixed Generic regulator pressure measurement unit and format in visualization menu.**

**Note1: Validated with HMI Touch color version 1.13**

**HP C2 cir2 and HP C3 Cir2 is now recorded on the Alarm Hystory when we trigger the Alarm.**

**Note2: Upload the HMI Touch application will require a fresh bios download!**

```
Used code size:      FA270h ( 1000 KByte)
Free code space:      5D90h (   23 KByte)
Total code space:   100000h ( 1024 KByte)

Used data space:     2B4A8h (  173 KByte)
```

```
Free data space:    54B58h (  338 KByte)
Total data space:   80000h (  512 KByte)
```

## Release 2.07.18 24-04-2021

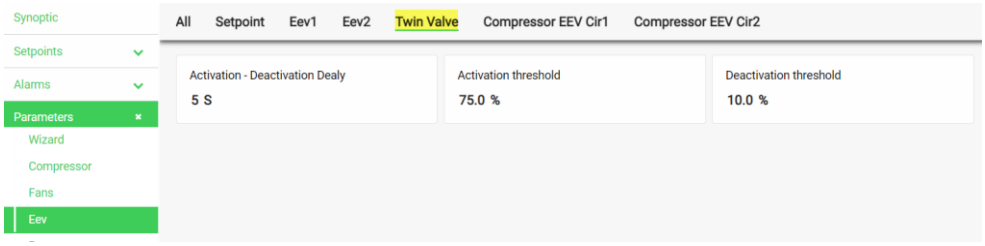
**PLC:** **-Added HP compressor alarms for all compressor of the circuit 2.**

**-Added option to disable delay between Star and Delta in case of Delta starter motor.**

## Release 2.07.17 07-04-2021

**PLC:**

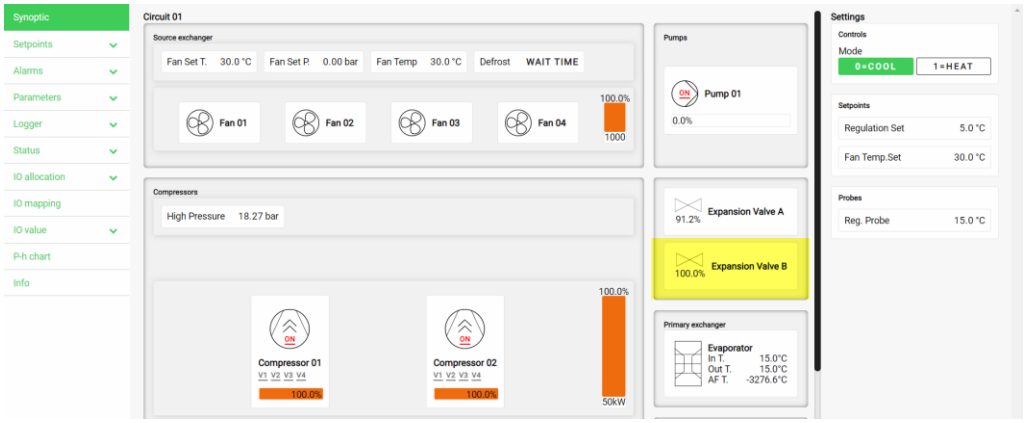
1. Fixed circuit protection delay; now the compressor of different circuit will not be activated simultaneously.
2. Added double circuit valve. The secondary valve (EEV B) will be activated if the opening % of the primary expansion valve (EEV A) exceed the “activation threshold”.
   The EEV B will be deactivated if the opening % of the primary expansion valve (EEV A) exceed the “activation threshold”.
   The activation/deactivation can be delayed with a dedicated parameter.



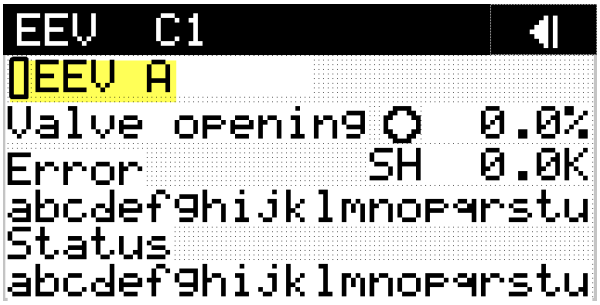

The EEV (XVD V3.0) Modbus address had been updated as follow table:

| **Valves** | **Modbus Address** |
|---|---|
| Circuit 1 Valve Bipolar EEV A | 40 |
| Circuit 1 Valve Bipolar EEV B | 41 |
| Circuit 2 Valve Bipolar EEV A | 42 |
| Circuit 2 Valve Bipolar EEV B | 43 |

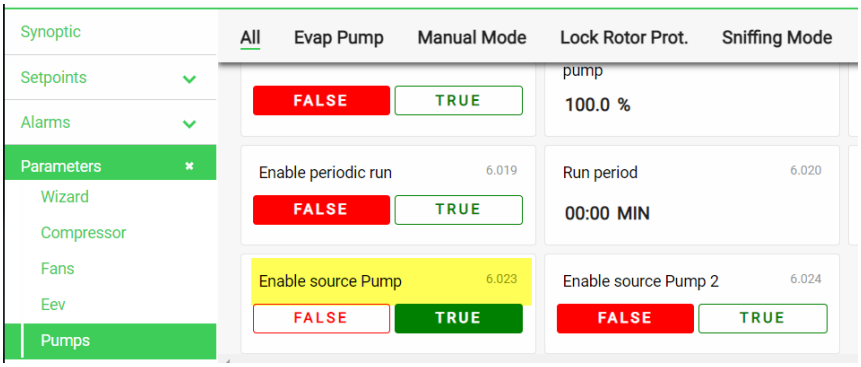
3. Added status icon in the synoptic page



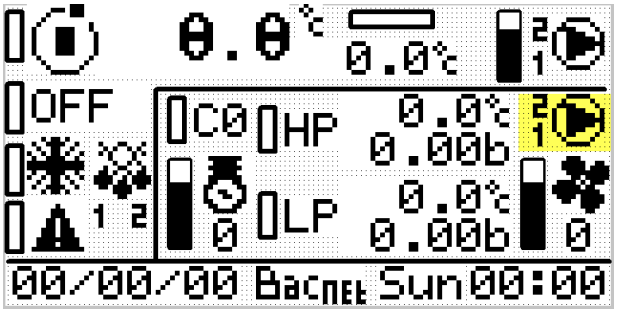

4. Added option on local HMI to select the EEV A or B in the EEV status information page



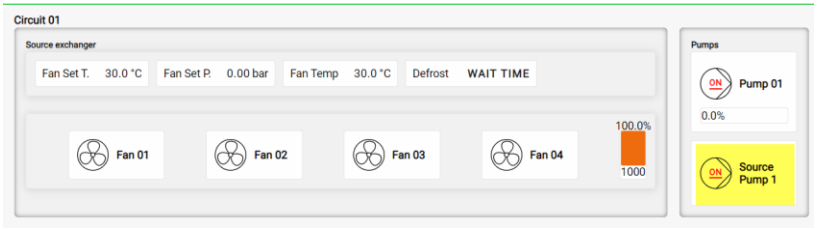

5. Added source Pump enable parameter




6. Added Source pump Icon in local HMI




7. Added Source pump Icon synoptic web page




8. Removed unused PLC code

   Used code size: F9230h ( 996 KByte)
   Free code space: 6DD0h ( 27 KByte)
   Total code space: 100000h ( 1024 KByte)

9. Removed unused HMI code

   Used code size: 158C3Ch ( 1379 KByte)

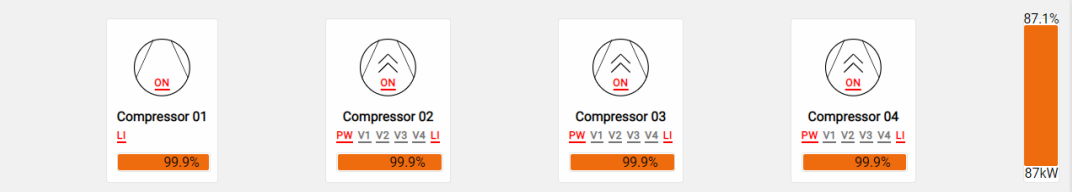
Free code space: 273C4h ( 156 KByte)
Total code space: 180000h ( 1536 KByte)

## Release 2.07.216 19-03-2021

**PLC:**

10. Fixed power distribution algorithm, in case of running at 100% the rounded calculating is limited to avoid storing extra power in memory.
11. 
12. Fixed String "COIL Alarm" in alarm, changed in "Common Oil Alarm".

13. Change the valve color in the main synoptic page from green to red.



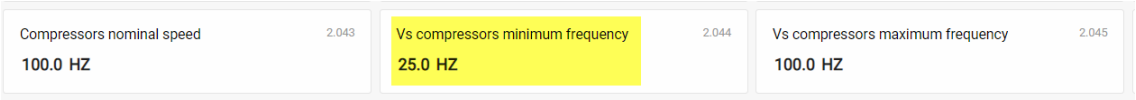

## Release 2.07.116 18-03-2021

**PLC:**

14. Fixed connection file CONNEC.PAR, now the connection file in folder EXTRA_NOR is aligned with the compiled file.

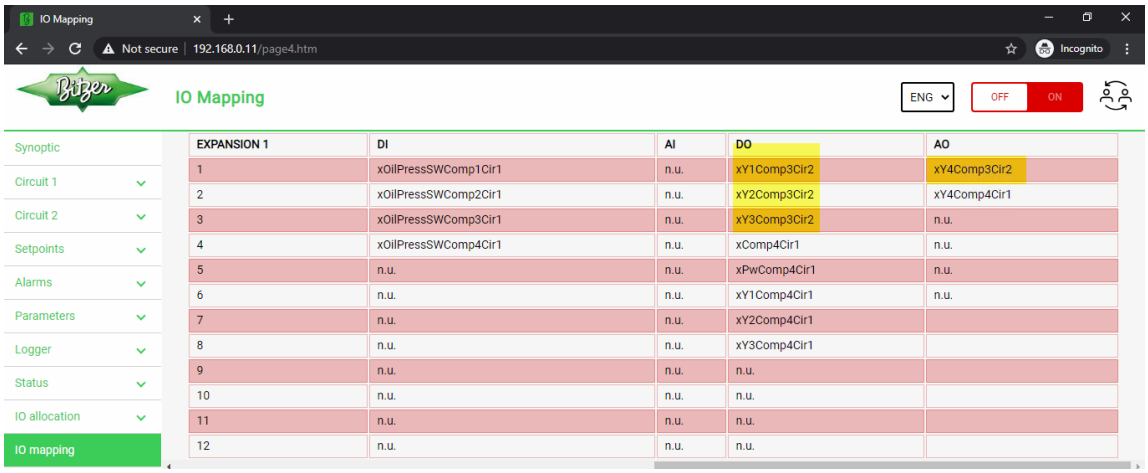
15. Fixed power distribution algorithm, the rounded power distributed to the step compressor is now correctly assigned to the inverter compressors.

16. Fixed missing off of screw compressor of the screw compressor if the minimum power is greater than start %.




Start % is considered the same parameter of the inverter 2.044
Now this threshold is not considered in the switch off sequence.

17. Fixed visualization issue on the digital input allocation on expansion 1.

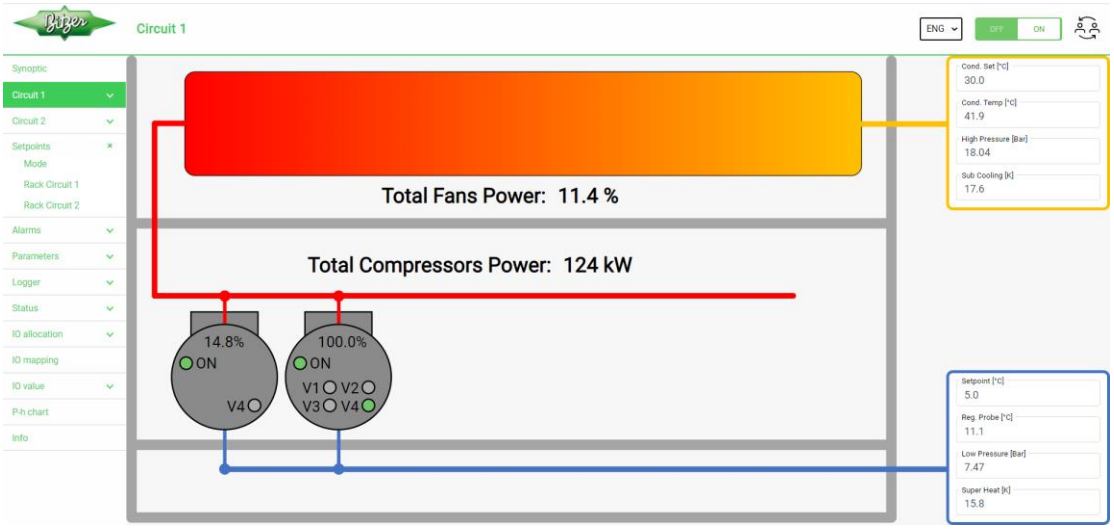



18. Corrected Chinese language translation.

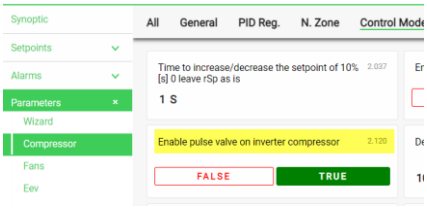
## Release 2.07.16 17-03-2021

**PLC:**

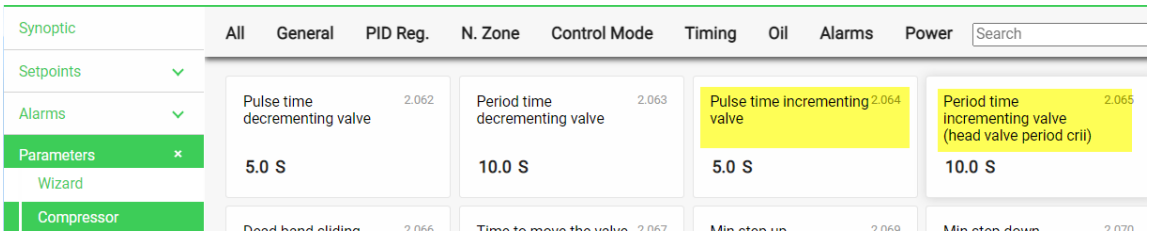
1. Fixed On-Off Screw compressor in case of PID circuit activation.
2. Fixed missing alarms “Compressor High discharge temperature”.
3. Fixed Parameter label in Circuit Set menu.
4. Fixed Webserver compatibility with HMISTW6200 4"W touch panel display.
5. Fixed Parameter label in Circuit Set menu.
6. Added option to set to set hi priority for inverter compressors in power distribution (saturation mode) and force inverter to start first and stop as last.



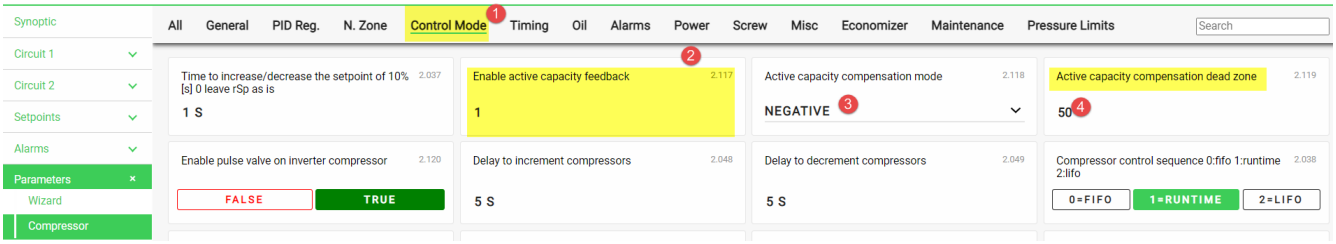

7. Added new parameter to enable the pulsing valve in case of compressor inverter.




The timing of the pulsing valve will be aligned with the CR4 of the screw compressor



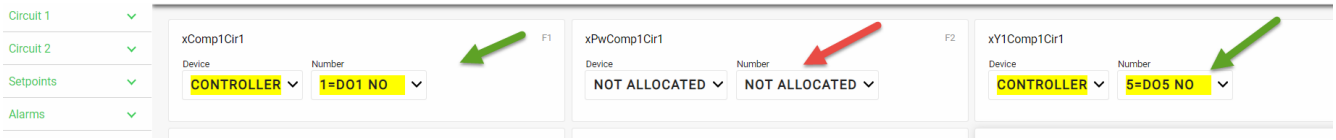

8. Added compressor active power feedback.



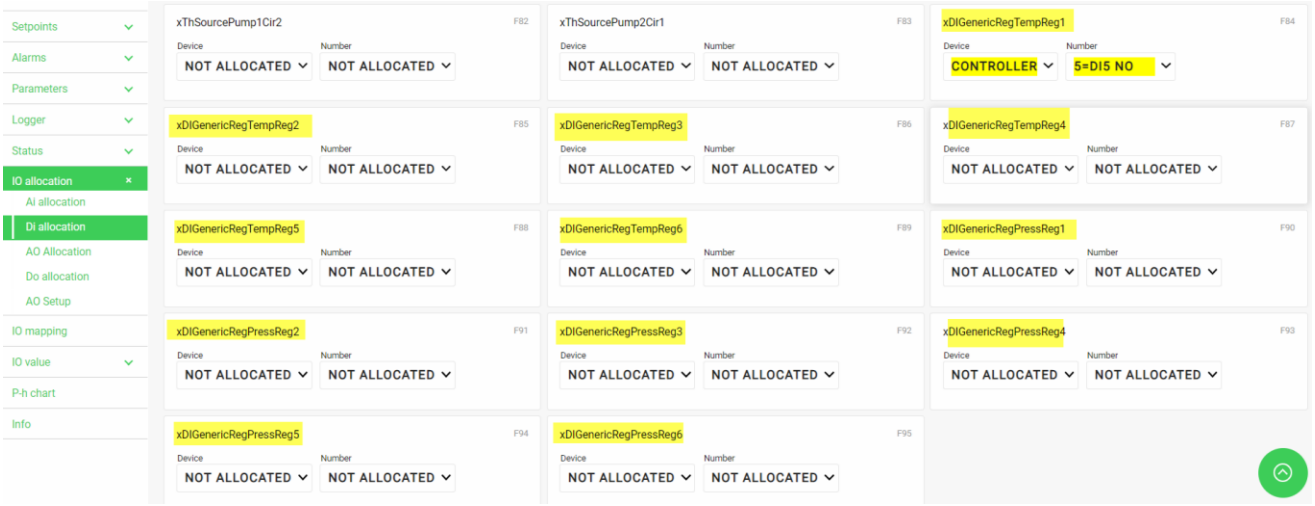

The parameter 2.117 will enable the compensation.

The parameter 2.118 will define the compensation strategy, positive gap, negative gap or both (positive and negative). The delta cap is calculated Requested-Actual. The capacity Gap will be added or subtract to the inverter power.

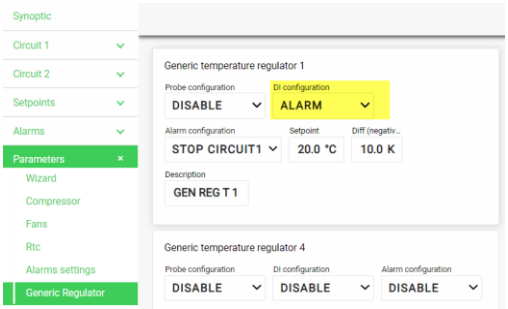
9. Added new option to highlight the configured IOs in the IO Allocation pages.



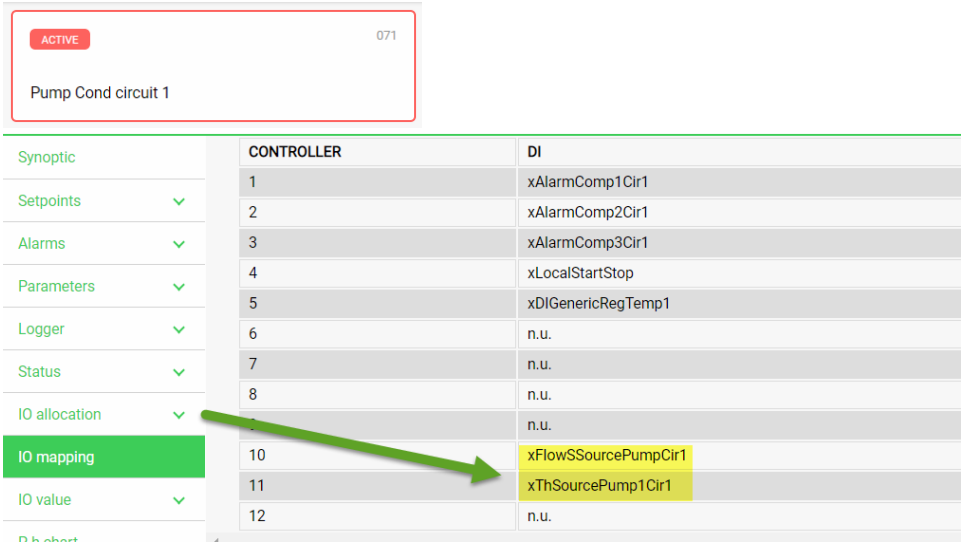

10. Added configurable Generic Digital Input.



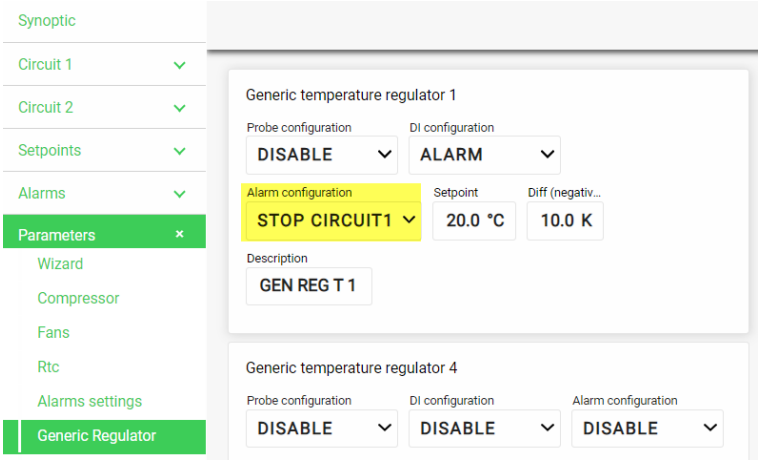

11. Added Generic regulator Digital Input configuration option to configure it as Alarm, Generic Regulator On Off or to activate the Digital Output.



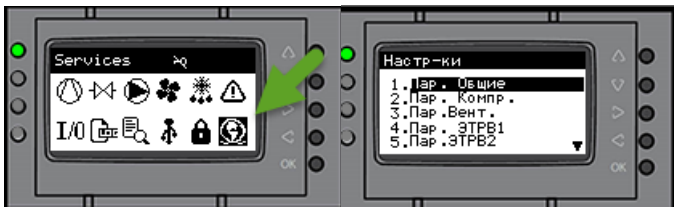
12. Added Condenser Source pump alarm to manage alarm from thermal protection ad from flow switch.




13. Added Generic regulator Alarm configuration option to select the alarm action: Warning , stop circuit 1, Stop Circuit 2 or stop the unit.



14. Added Multilanguage option and Russian language on local HMI.



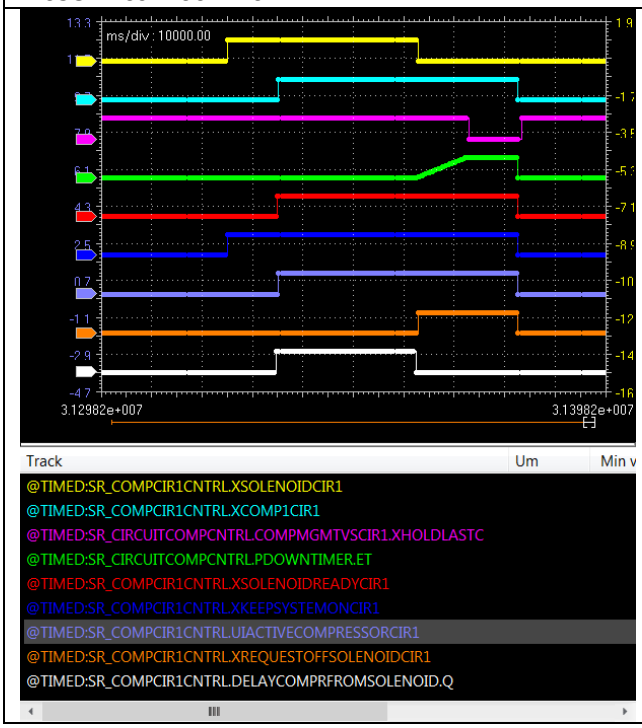
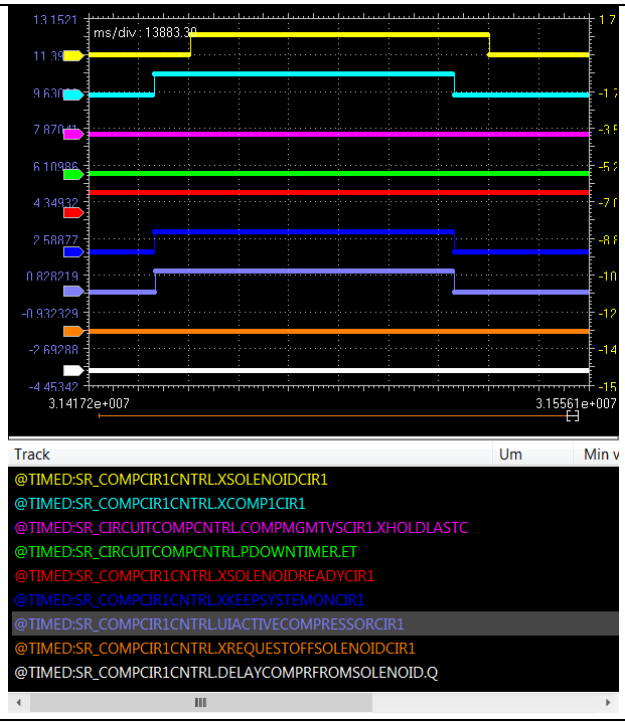

15. Fixed translation error the Russian languages on the web server.
16. Fixed translation error in Portuguese languages on the web server
17. Added Hindi languages on the web server.

## Release 2.07.915 11-02-2021

**PLC:**

Fixed Time Out alarm of Compressor 1 at Unit ON. E2_uiDelayGenericAlarm

- Fixed solenoid delay, now the compressor driver (PW + unloader ) is synchronized with the solenoid request.

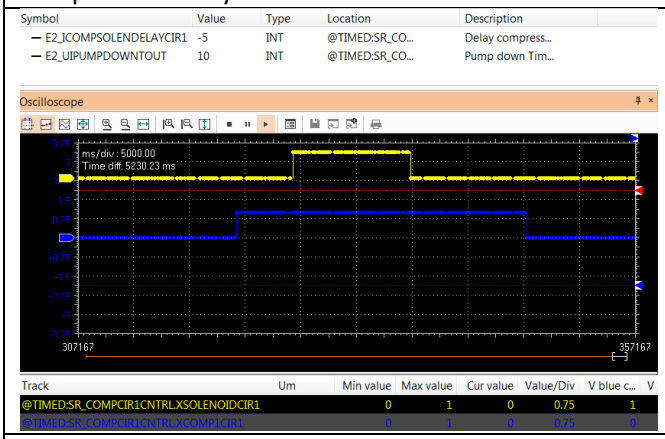
| 2.058 =10s 2.061=10 | 2.058 = -10s 2.061=-10 |
|---|---|
|  |  |

## Release 2.07.815 28-01-2021

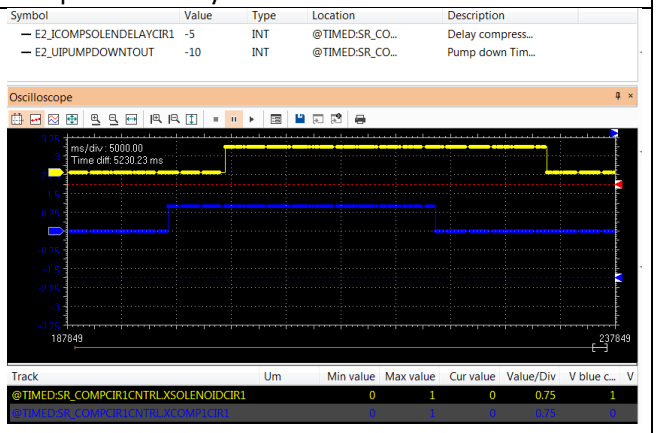
**PLC:**

- Fixed Time Out alarm of Compressor 1 at Unit ON.
- Fixed evaporator pump alarm at Unit ON.
- Certification of the Russian language translation.
- Added Positive and negative delay for solenoid valve in case of Chiller configuration

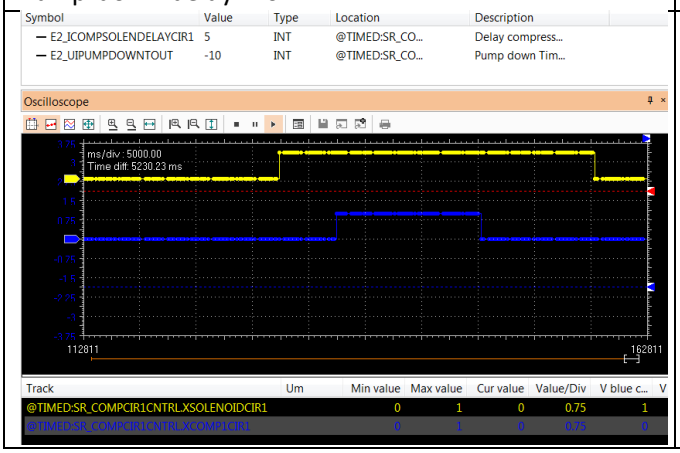
Solenoid Delay -5
Pump down delay 10



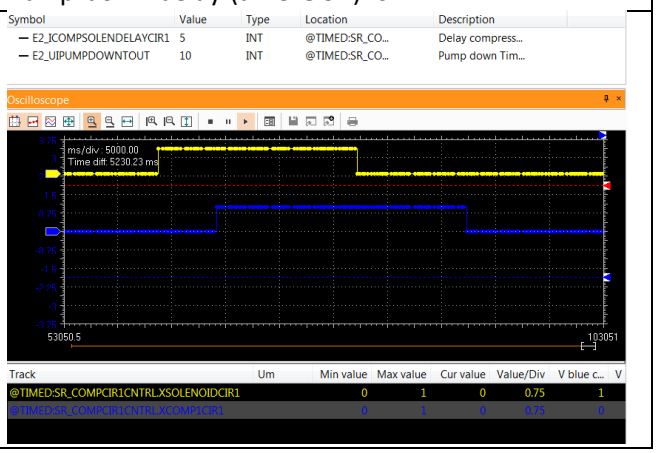

Solenoid Delay -5
Pump down delay -10




Solenoid Delay 5
Pump down delay -10

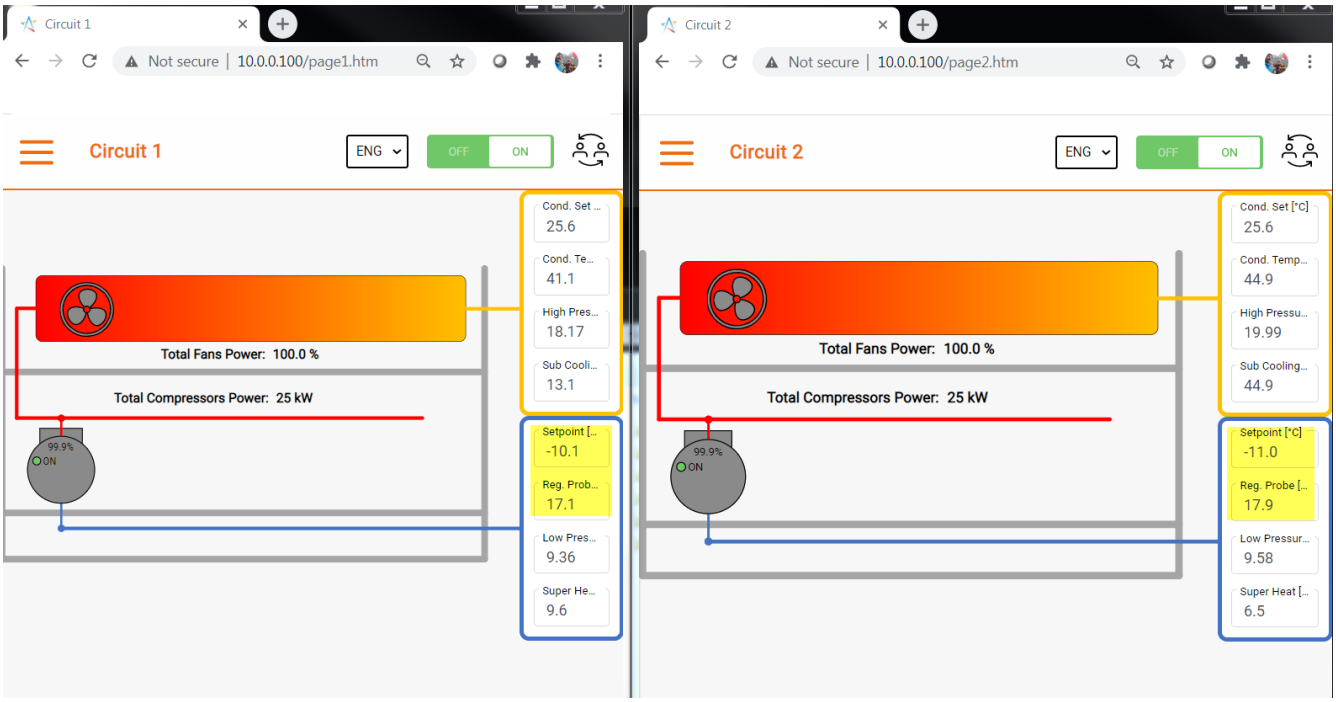



Solenoid Delay 5
Pump down delay (time OUT)10



**WEB:**

- Fixed  Circuit page in case of a Rack with  two suction line.



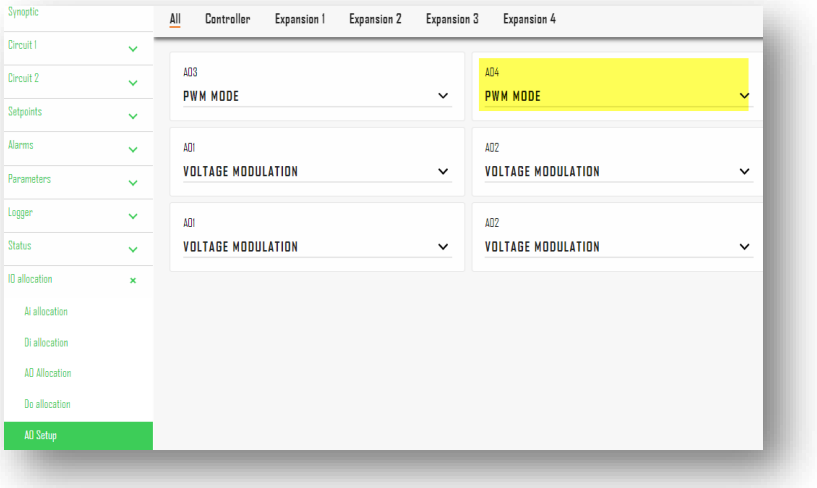

```
Used code size:       F93FCh (  996 KByte)
Free code space:       6C04h (   27 KByte)
Total code space:    100000h ( 1024 KByte)

Used data space:       2815Ah (  160 KByte)
Free data space:       57EA6h (  351 KByte)
Total data space:      80000h (  512 KByte)
```

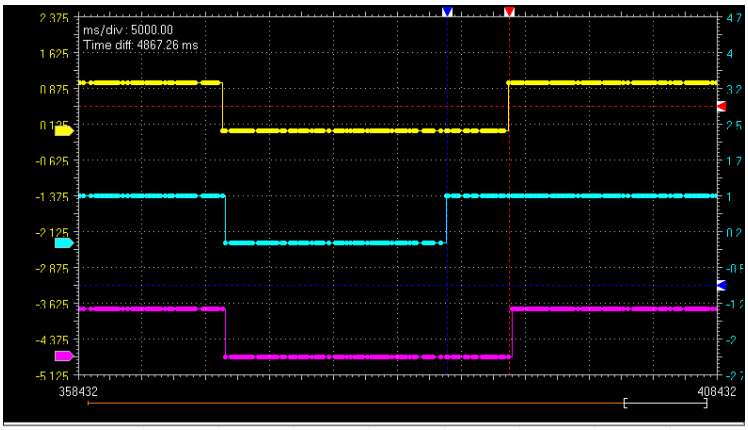
## Release 2.07.615 19-01-2021

**PLC:**

Fixed AO configuration in case od DO configured as AO, in previous version the output was fixed to 1=Current modulation. Now can be selected from the dedicated menu in Commissioning/Web server.



Added configurable delay (2.058) between solenoid valve and compressor start In WEB/Compressor/Timing



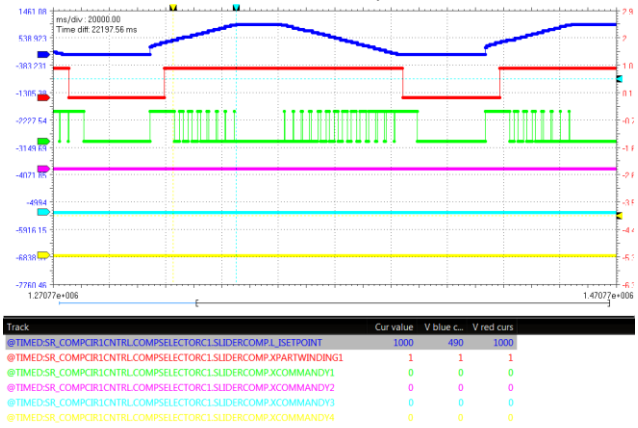

| Track | Um | Min value | Max value | Cur value | Value/Div | V blue c... | V red curs | H red cu... |
|---|---|---|---|---|---|---|---|---|
| @TIMED:SR_COMP... | | 0 | 1 | 1 | 0.75 | 0 | 1 | 0.5 |
| @TIMED:SR_COMP... | | 0 | 1 | 1 | 0.75 | 1 | 1 | ... |
| @TIMED:SR_COMP... | | 0 | 1 | 1 | 0.75 | 0 | 0 | ... |

## Release 2.07.15  08-01-2021

**PLC:**

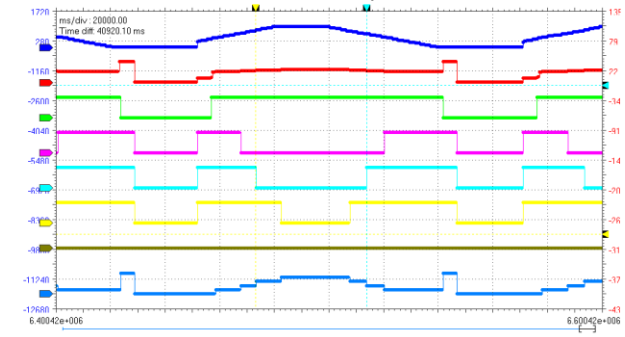
Validation of the Ecoline Step and Steppless compressor with 1, 2, 3 valve

Chart with Ecoline  1 Valves Stepless



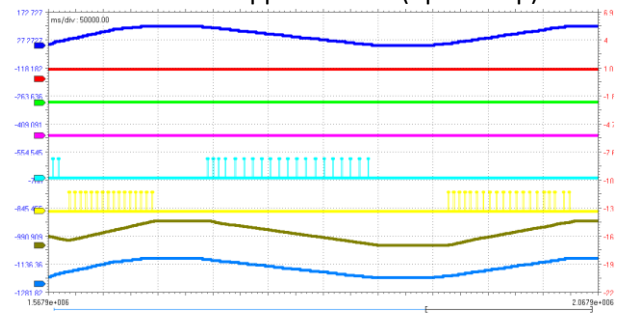

| Track | Cur value | V blue c... | V red curs |
|---|---|---|---|
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.I_ISETPOINT | 1000 | 490 | 1000 |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING1 | 1 | 1 | 1 |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY1 | 0 | 0 | 0 |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY2 | 0 | 0 | 0 |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY3 | 0 | 0 | 0 |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY4 | 0 | 0 | 0 |

Chart with Ecoline 3 Valves Step



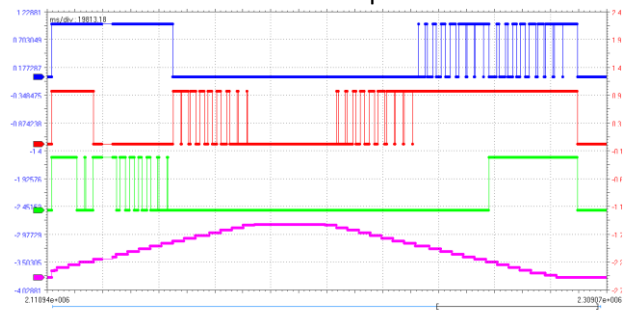

| Track | Max value | Cur value | V blue c... | V red curs | H red c |
|---|---|---|---|---|---|
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.ISETP | 1000 | 992 | 841 | 641 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.USISTATE | 40 | 24 | 24 | 23 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING1 | 1 | 1 | 1 | 1 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY1 | 1 | 0 | 0 | 0 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY2 | 1 | 0 | 0 | 1 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY3 | 1 | 1 | 1 | 1 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY4 | 0 | 0 | 0 | 0 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.I_ISTEP | 5 | 3 | 3 | 2 | |

Chart with Screw Steppless  HS85 (open loop)



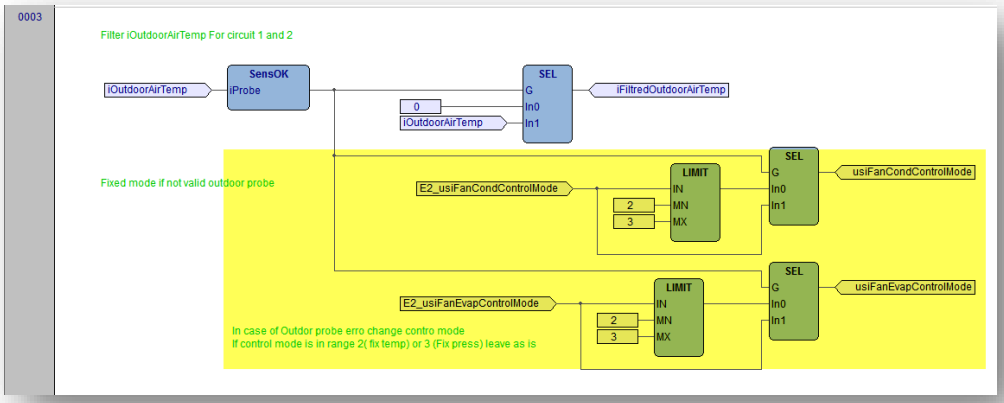

| Track | Min value | Max value | Cur value | Value/Div | Description |
|---|---|---|---|---|---|
| @TIMED:SR_CIRCUITCOMPCNTRL.RSPCIR1 | 0 | 100 | 100 | 145.455 | @TIMED:SR_CI... |
| @TIMED:SR_COMPCIR1CNTRL.XCOMP1CIR1 | 1 | 1 | 1 | 2.90909 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.XY1COMP1CIR1 | 0 | 0 | 0 | 2.90909 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.XY2COMP1CIR1 | 0 | 0 | 0 | 2.90909 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.XY3COMP1CIR1 | 0 | 1 | 0 | 1.45455 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.XY4COMP1CIR1 | 0 | 1 | 0 | 1.45455 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.COMPCAPACITY.ICOMPCAPACITY | 25 | 1000 | 1000 | 1125.82 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.IACTIVECAPACITY | 250 | 1000 | 1000 | 1090.91 | @TIMED:SR_C... |

Chart with Ecoline 3 Valves Stepless

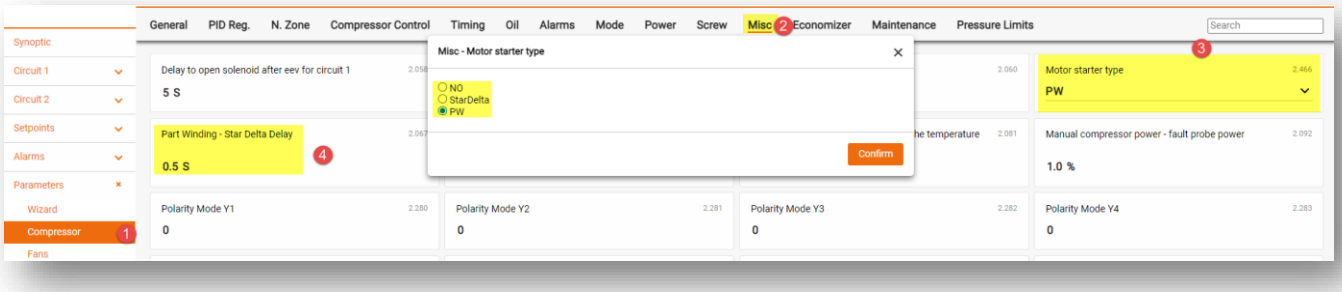



| Track | Um | Min value | Max value | Cur value | Value/Div | Description |
|---|---|---|---|---|---|---|
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY1 | | 0 | 1 | 0 | 0.525762 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY2 | | 0 | 1 | 0 | 0.525762 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XCOMMANDY3 | | 0 | 1 | 0 | 0.525762 | @TIMED:SR_C... |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.I_ISETPOINT | | 1 | 1000 | 1 | 525.237 | @TIMED:SR_C... |

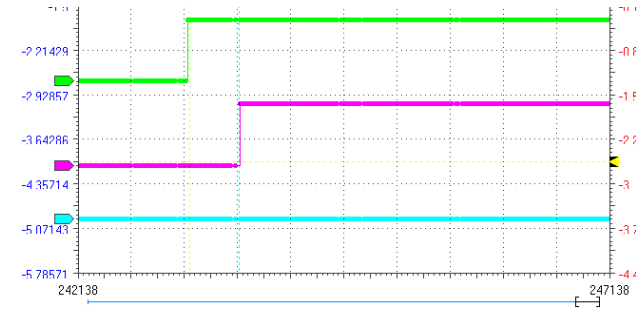
Fixed Auto mode in case of Outdoor Probe failure, now if the mode is Fixed Pressure or Temperature the Mode will be maintained valid, in previous version it was set to fixed in Temperature.




Added Part winding and Delta Star Option for Compressor 1, 2 of circuit 1 and circuit 2

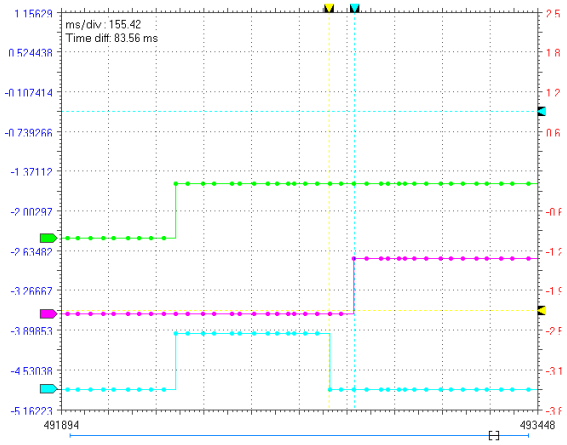



Part winding chart with 500 ms



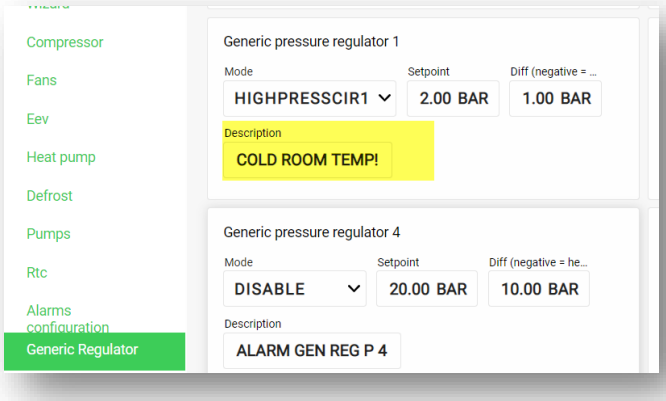

| Track | Um |
|---|---|
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING1 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING2 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XCOMPCOMMAND | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XPW_DELTA | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XSTAR | |

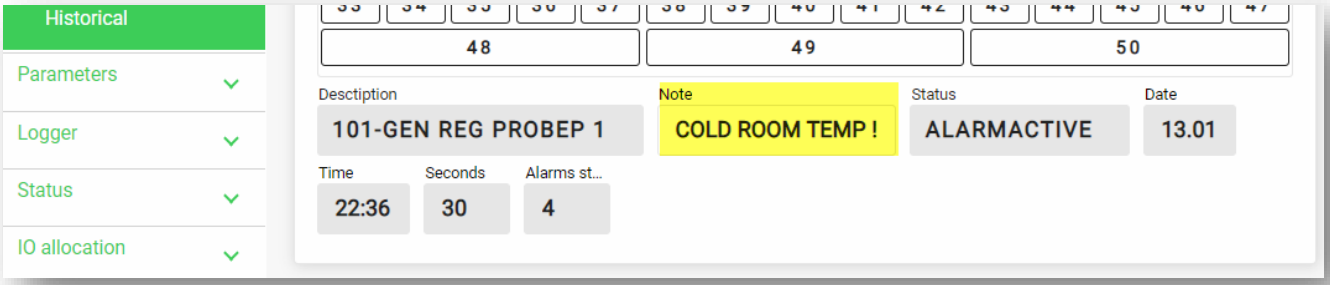
Delta Star chart with 500ms




| Track | Um |
|---|---|
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING1 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.SLIDERCOMP.XPARTWINDING2 | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XCOMPCOMMAND | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XPW_DELTA | |
| @TIMED:SR_COMPCIR1CNTRL.COMPSELECTORC1.XSTAR | |

Added Generic regulator alarm description included also in historical alarm on web server and al local HMI

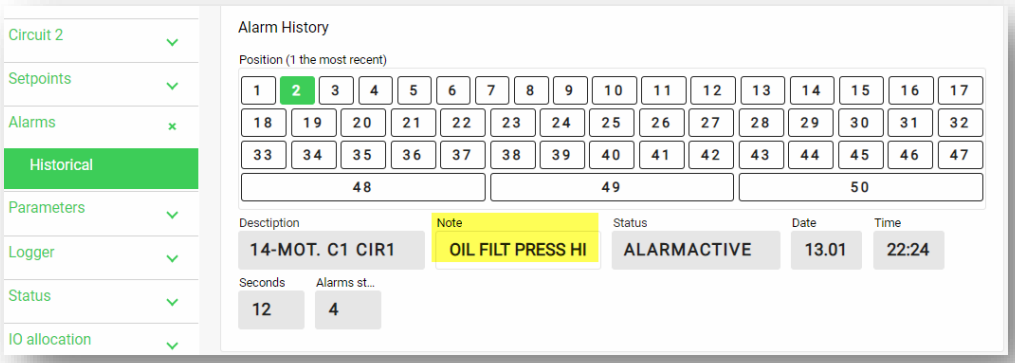


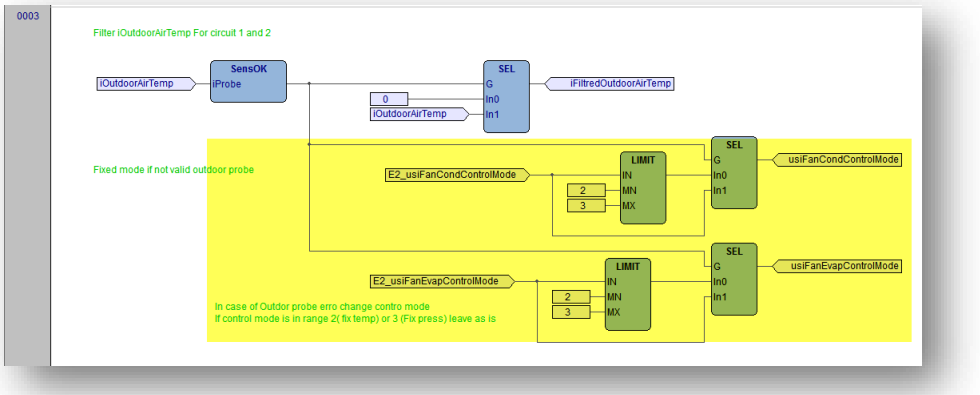

Added missing alarm code regulator alarm description included also in historical alarm on web server and al local HMI

```
0324      136:    AlrSubCode:='Motor Freq Hi';
0325      137:    AlrSubCode:='Oil Stop Valve';
0326      145:    AlrSubCode:='HW: 24V sens 1';
0327      146:    AlrSubCode:='HW: 24V sens 2';
0328      150:    AlrSubCode:='Sign.but no run';
0329      152:    AlrSubCode:='No sig. Comr On';
0330      153:    AlrSubCode:='Motor Curr. High';
0331      159:    AlrSubCode:='Undef. C. State';
0332      164:    AlrSubCode:='Oil Filt.Press Hi';
0333      165:    AlrSubCode:='Oil Level Low';
0334      255:    AlrSubCode:='Com. Time Out';
0335  ELSE
0336      AlrSubCode:='Undef. Sub code';
```

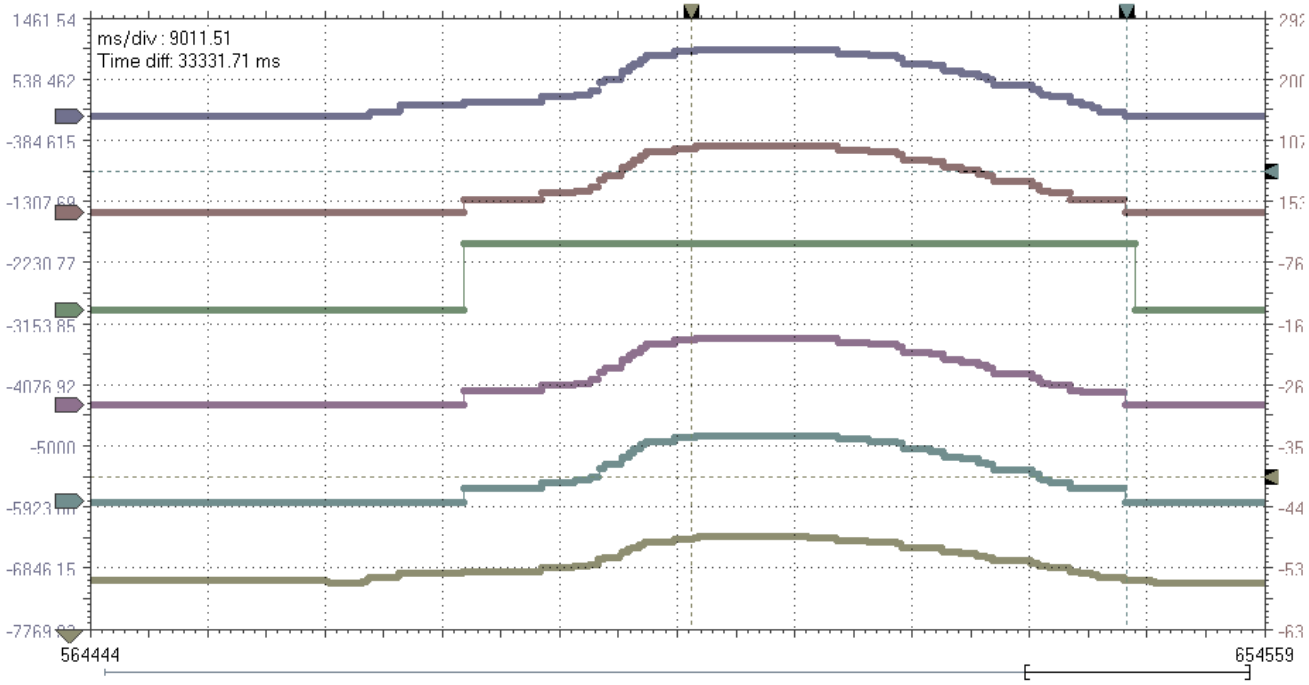
Added Generic regulator alarm description included also in historical alarm on web server and al local HMI




Fixed behavior in case of Outdoor temperature probe out of range , Now if the condenser regulator is fixed in Pressure the regulation mode is not forced in Fixed temperature.



Fixed behavior in case of fan regulation controlled in pressure. Now the Analog output is scaled correctly.

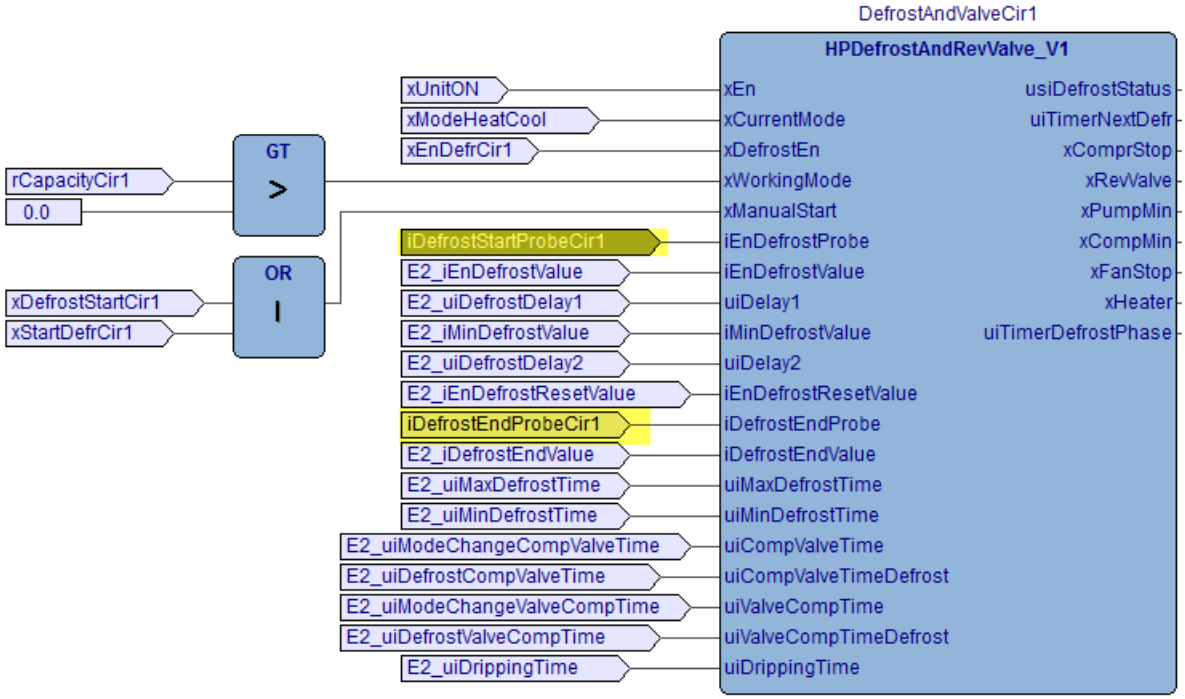



| Track | Um | Min value | Max value | Cur value | Value/Div | V blue c... | V red curs | H r |
|---|---|---|---|---|---|---|---|---|
| @TIMED:SR_FANCIR1CNTRL.UIFANCONTROLSIGN... | | 0 | 1000 | 0 | 923.077 | 976 | 0 | |
| @TIMED:SR_FANCIR1CNTRL.UIFANFREQSP | | 0 | 1000 | 0 | 923.077 | 976 | 0 | 6 |
| **@TIMED:SR_FANCIR1CNTRL.XFAN1CIR1** | | **0** | **1** | **0** | **0.923077** | **1** | **1** | |
| @TIMED:SR_FANCIR1CNTRL.IFANCIR1 | | 0 | 1000 | 0 | 923.077 | 976 | 0 | |
| @TIMED:SR_FANCIR1CNTRL.IFANPOWERCIR1 | | 0 | 1000 | 0 | 923.077 | 976 | 0 | |
| @TIMED:SR_FANCIR1CNTRL.IHIGHPRESSCIR1 | | 1500 | 1898 | 1595 | 367.385 | 1861 | 1610 | |

## Release 2.07.15  09-12-2020

**PLC:**

Added Configurable Defrost End Probe For Chiller/HeatPump configurations.

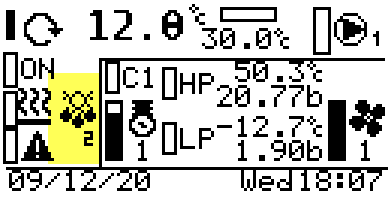



Fixed Defrost Manual start; now in case of synchronous defrost the two circuit will be activated in parallel.

Updated All Pid library with PIIntAdvance Library.

HMI:

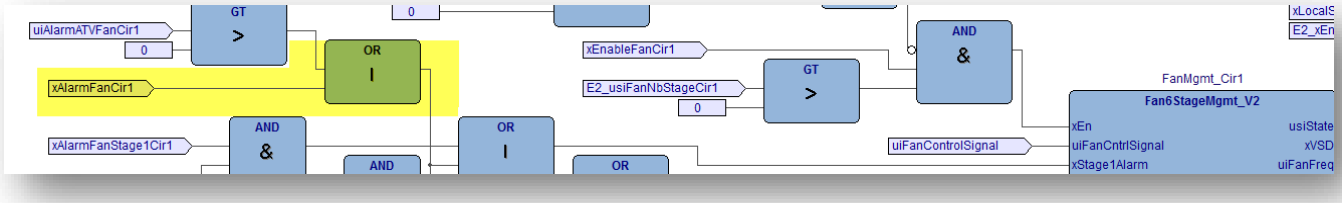
Added defrost icon with the number of the circuit in defrost phase.

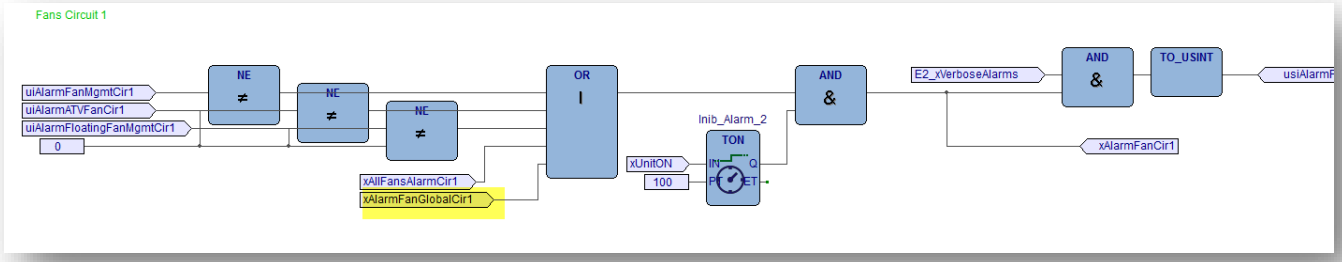


## Release 2.07.15  26-11-2020

**PLC:**

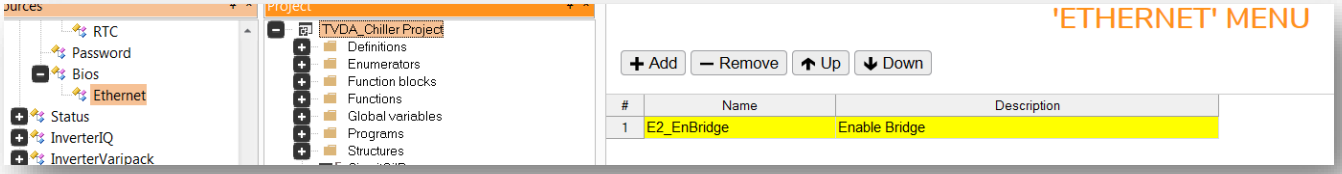
Fixed alarm fan global



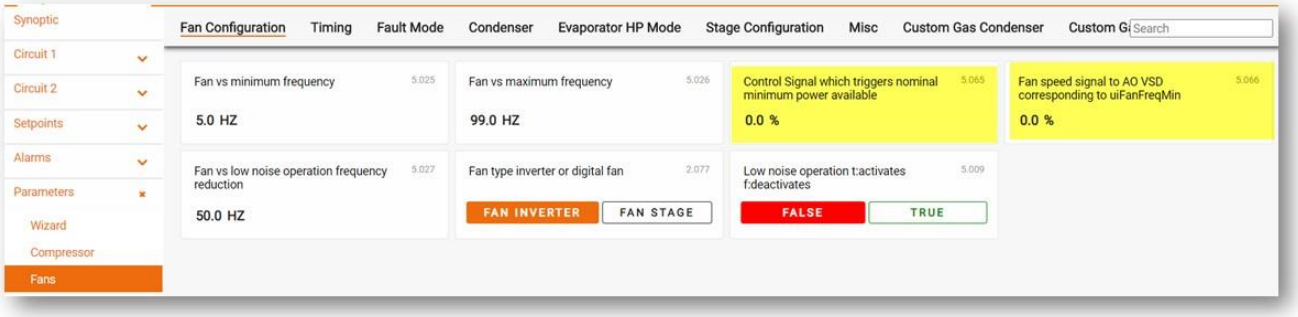

Added Parameter to disable Bridge between Modbus TCP and Modbus RS485

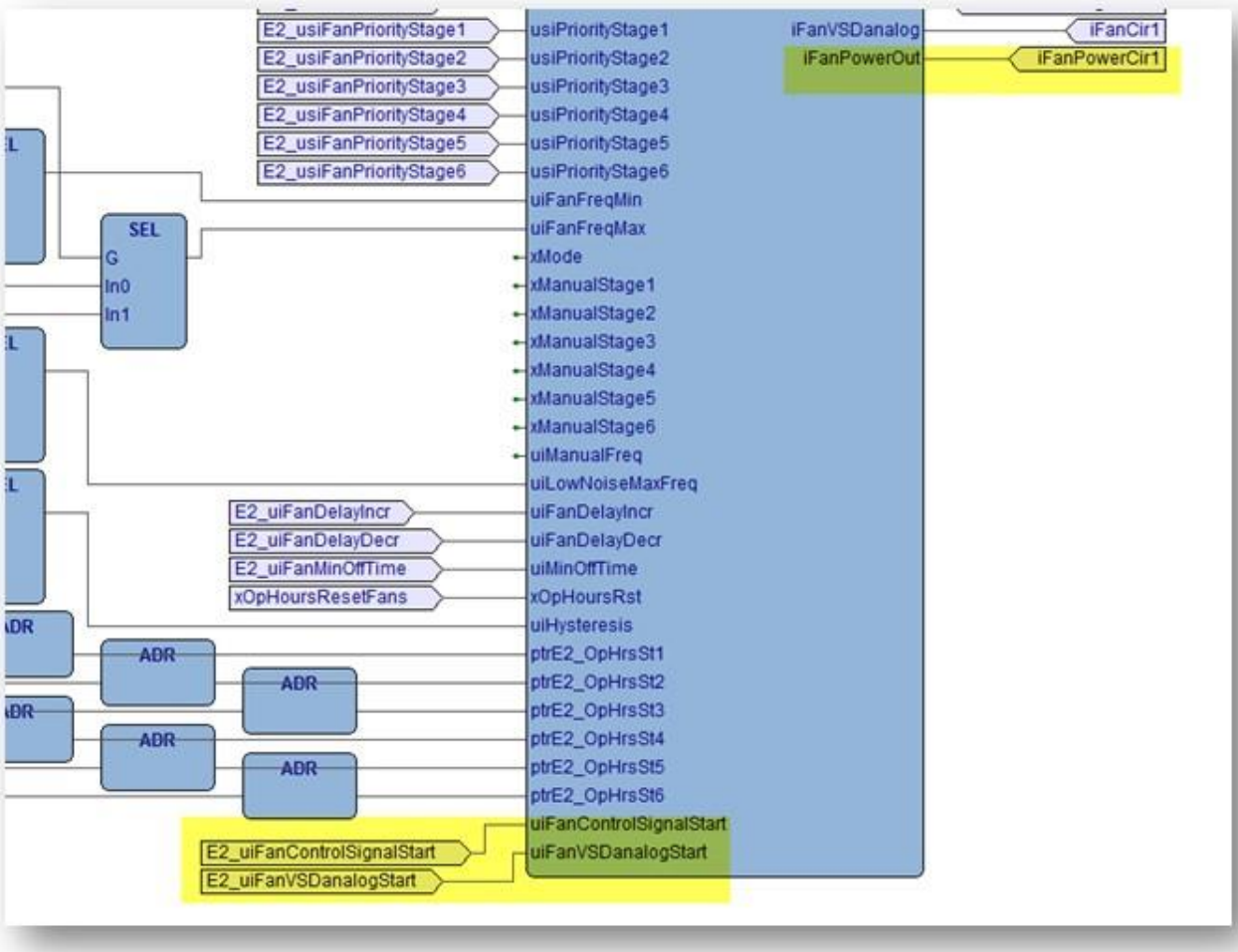
Available in BIOS/ETHERNE



Added New parameter to manage additional Fan feature:

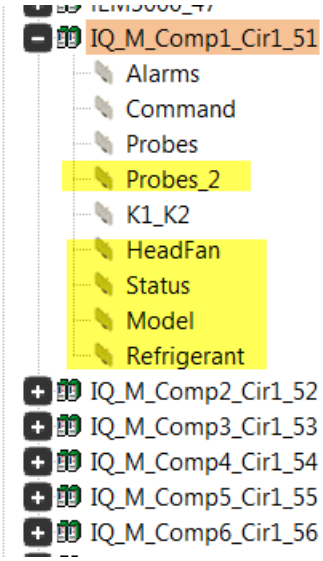
- 5.065 Control signal % to start Fan
- 5.066 Fan speed signal (Analog Out Value) which correspond to the minimum speed uiFanFreqMin



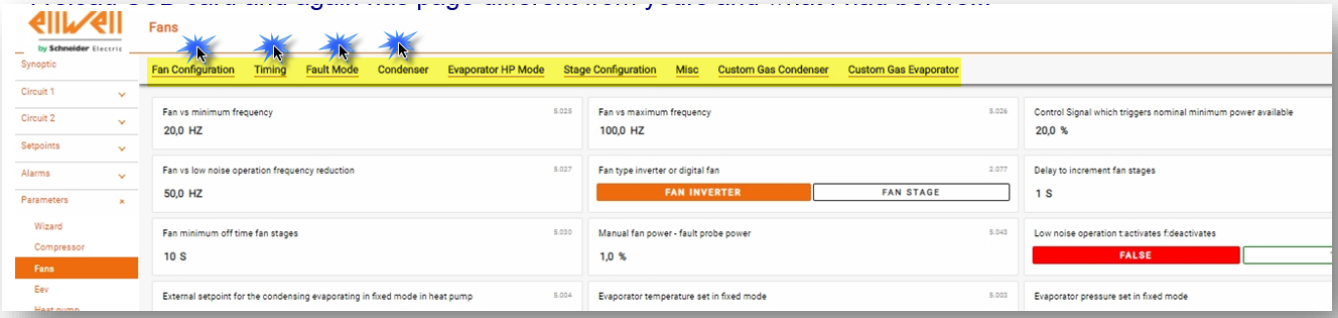

In this version the parameter fan can be updated if the unit is off from Remote button, only the hysteresis can be updated with unit ON.

Added register for Bitzer Digital solution

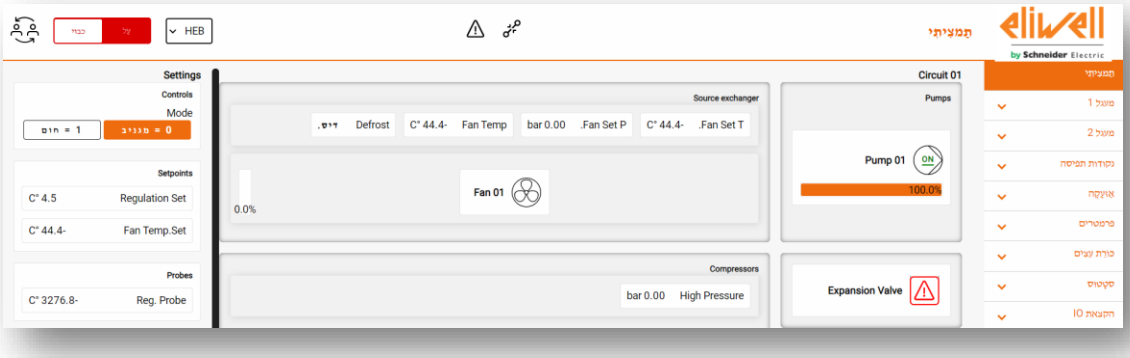



**WEB:**

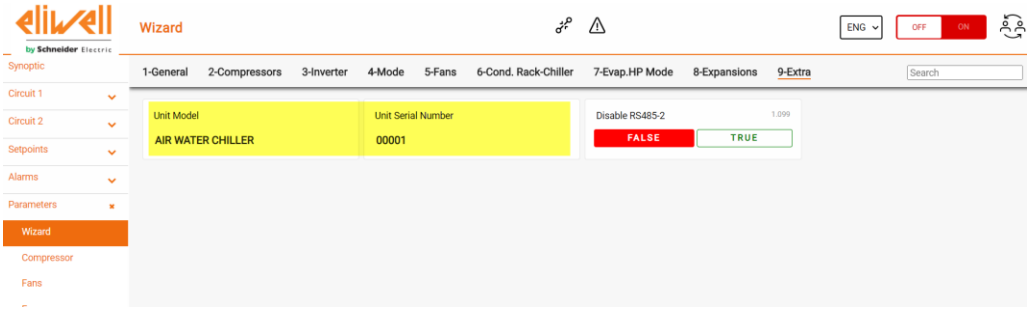
Added new option for section, each section can be activated/deactivated in toggle mode



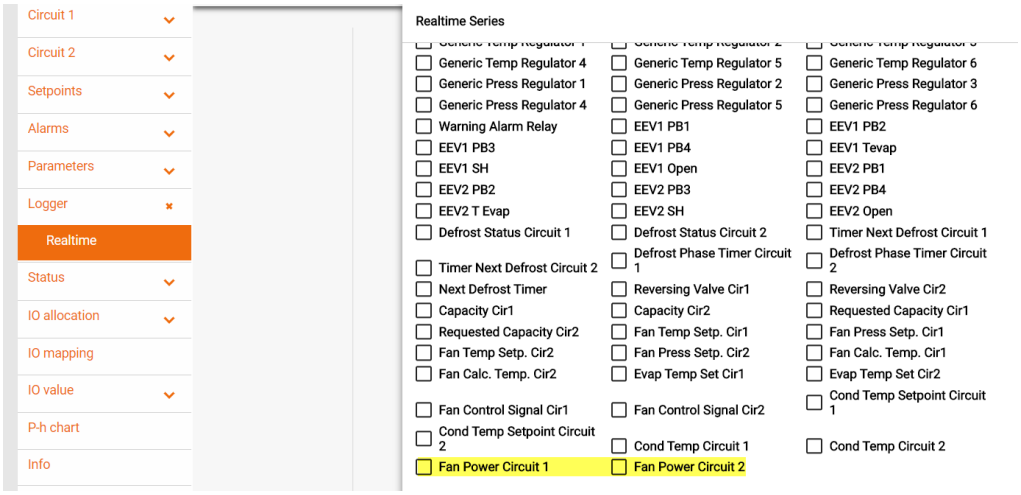

Added Automatic right-aligned languages



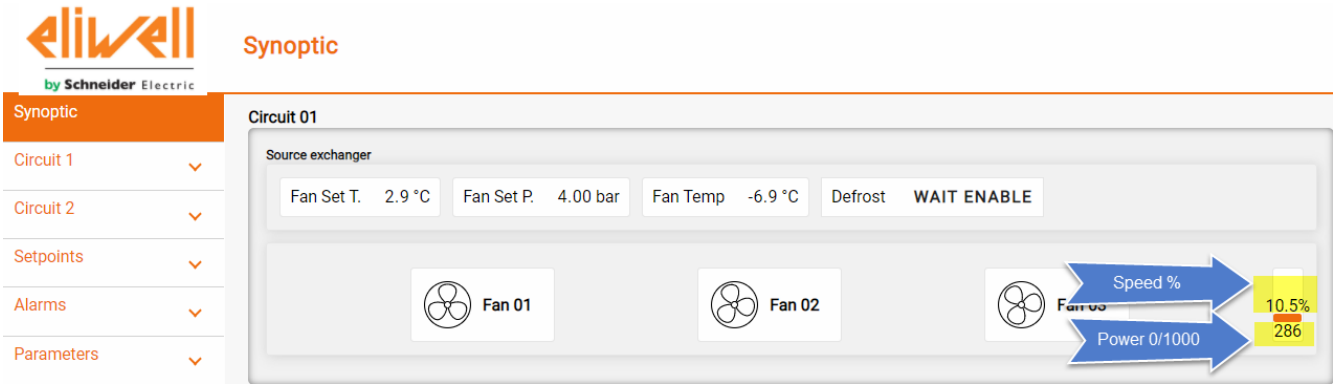
Added Unit model and serial number




Added Fan power in real time logger



Added Fan Power and fan speed (fan speed is also the fan Analog output)



## Release 2.07.15 03-11-2020

**PLC:**

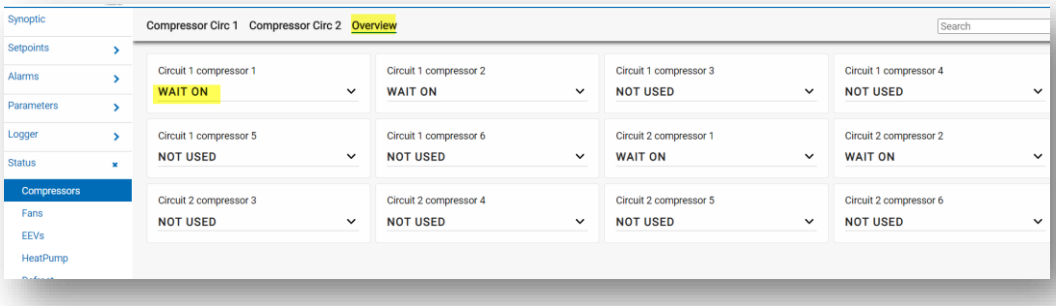
1- #issue4 Added E2_iCondValueForMaxFan E2_iEvapValueForMaxFan
2- #issue4 Added E2_xHPSwitchFanMax E2_xLPSwitchFanMax
3- Added option to open XVD in manual mode with unit off or stand by. To allow user to better perform vacuum operation.
4- Added New library for R454C (refprop10)
5- Added New parameter for XVD GAS R454C (refprop10)
6- Update custom gas coefficients for GAS R454C Refprop 10

EEPROM PARAMETERS

+ Add | – Remove | Recalc

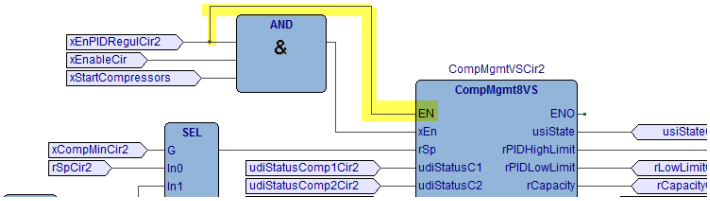
| # | Address | Name | Installer type | IEC type | Size | Default value | Min | Max | Scale |
|---|---|---|---|---|---|---|---|---|---|
| 1726 | 17460 | E2_usiPardL91Cir1 | dl90 | USINT | | RS485 | | | 1 |
| 1727 | 17461 | E2_usiPardL91Cir2 | dl90 | USINT | | RS485 | | | 1 |
| 1728 | 17462 | E2_usiPardL40Cir1 | dl40 | USINT | | NotUsed | | | 1 |
| 1729 | 17463 | E2_usiPardL40Cir2 | dl40 | USINT | | NotUsed | | | 1 |
| 1730 | 17464 | E2_usiPardL41Cir1 | dl40 | USINT | | NotUsed | | | 1 |
| 1731 | 17465 | E2_usiPardL41Cir2 | dl40 | USINT | | NotUsed | | | 1 |
| 1732 | 17466 | E2_rCustomGasCondA1 | Real | REAL | | -46.07114245 | | | 1 |
| 1733 | 17468 | E2_rCustomGasCondB1 | Real | REAL | | 20.80548824 | | | 1 |
| 1734 | 17470 | E2_rCustomGasCondC1 | Real | REAL | | 2.214615383 | | | 1 |
| 1735 | 17472 | E2_rCustomGasCondD1 | Real | REAL | | 0.222533756 | | | 1 |
| 1736 | 17474 | E2_rCustomGasCondE1 | Real | REAL | | 0.216517931 | | | 1 |
| 1737 | 17476 | E2_xEnableCustomGasCond | Boolean | BOOL | | False | | | 1 |
| 1738 | 17477 | E2_iCustomGasCondMin | Signed 16-bit | INT | | -40 | | | 1 |
| 1739 | 17479 | E2_iCustomGasCondMax | Signed 16-bit | INT | | 3000 | | | 1 |
| 1740 | 17481 | E2_rCustomGasEvapA1 | Real | REAL | | -37.95897005 | | | 1 |
| 1741 | 17483 | E2_rCustomGasEvapB1 | Real | REAL | | 21.04528744 | | | 1 |
| 1742 | 17485 | E2_rCustomGasEvapC1 | Real | REAL | | 2.262725317 | | | 1 |
| 1743 | 17487 | E2_rCustomGasEvapD1 | Real | REAL | | 0.274879266 | | | 1 |
| 1744 | 17489 | E2_rCustomGasEvapE1 | Real | REAL | | -0.005888246 | | | 1 |

7- Added Alarm history in local HMI and Web server pages.
8- Added Televis Go driver in release folder TelevisGoDriver\B-CH-HP-CR-2.07.bin .
9- Added Progress bar in Configuration manager feature.
10- Added Daylight saving time configurable in local HMI and Remote Web server.
11- Added “fast start up feature”, feature available with new bios (Msk596_610_200530_Mid7.12.1-dev0.bin.
12- With this option the controller avoids checking connection with not configured IO expansion.
13- Added option to control the defrost with a pressure probe.
14- Added option to bypass protection timing with reversing valve changeover.
15- Added Liquid injection PID differential, and modify Liquid injection algorithm to consider actual capacity instead Requested Capacity.
Liquid injection can now be controller with compressor discharge temperature probe or with actual compressor capacity.
16- Tested new compressor configuration Screw 50-100, fixed unloader activation sequence.
17- Fixed missing Variable iEvapCoilTempCir2 and relative Allocation parameters.
18- Fixed limit on parameter dE26 e dE27 for XVD.
19- Added EEV Opening preset feature parameter only in webpage.
20- Added Compressor Overview in local HMI and Web page:



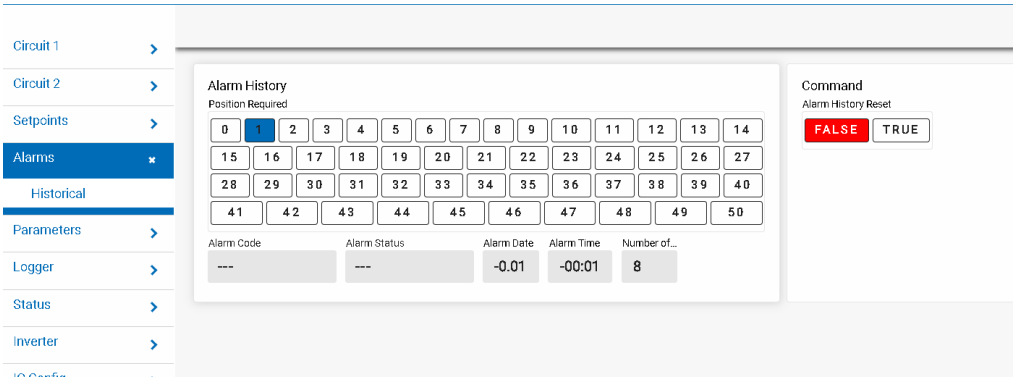



21- Fixed issue compressor start up of the compressor on circuit 2

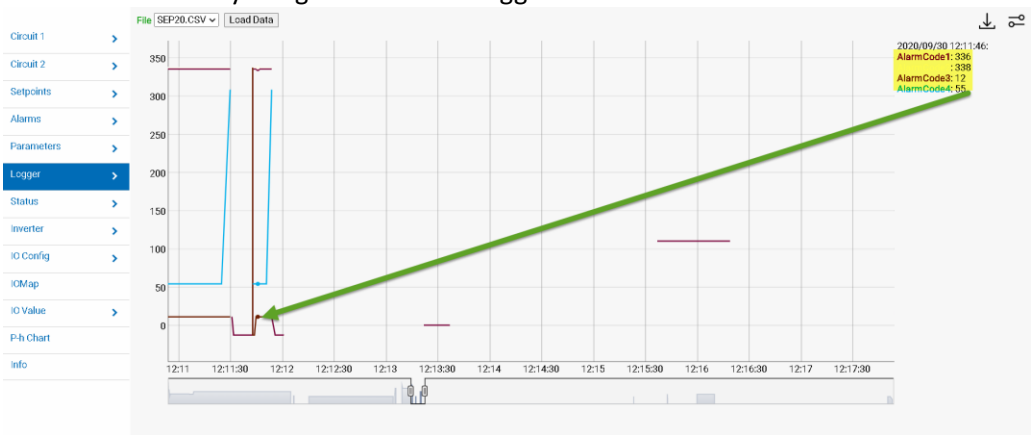


**WEB HMI:**

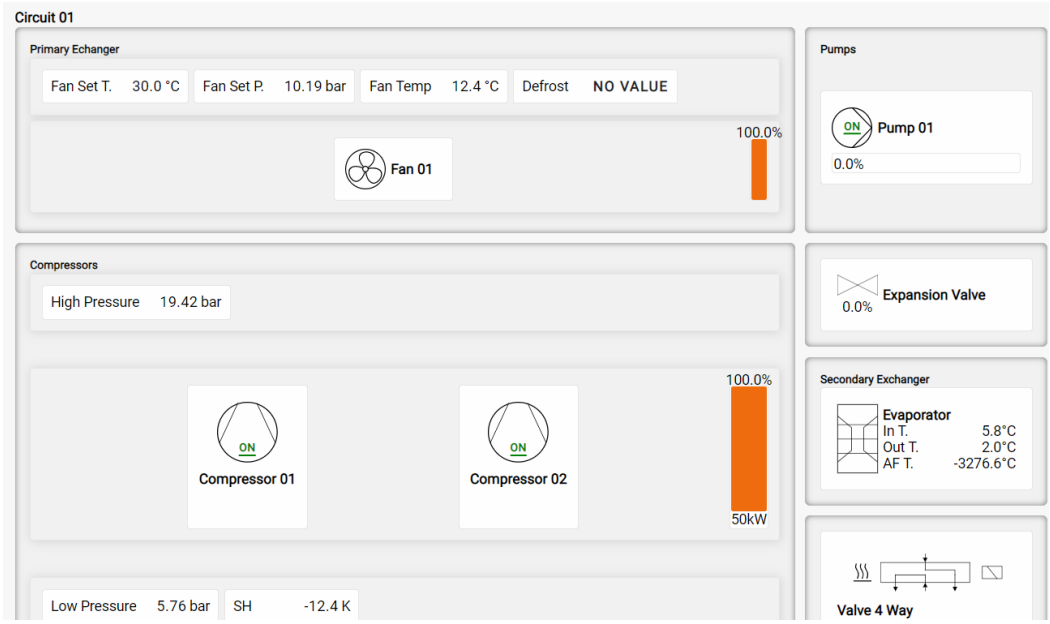
1- Added Alarm history




2- Added alarm history integration in data logger




3- Added New dynamic synoptic for Rack - Chiller – Heat Pump



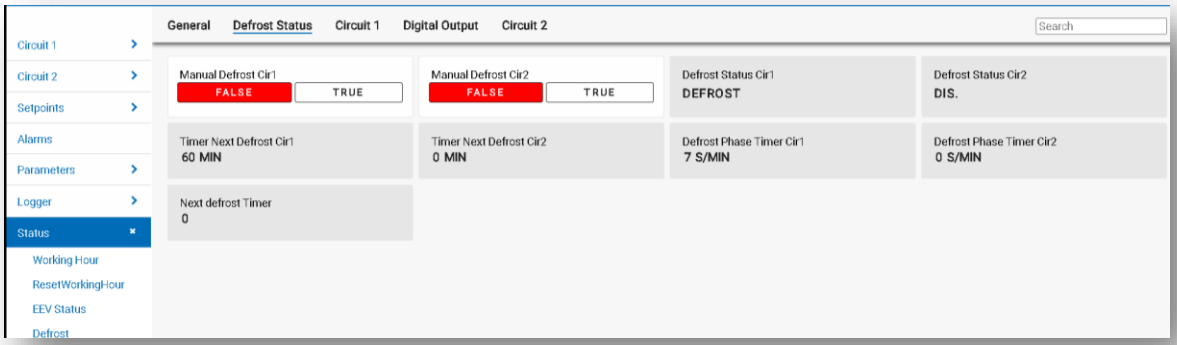
## Release 2.07.14 03-09-2020

**PLC:**

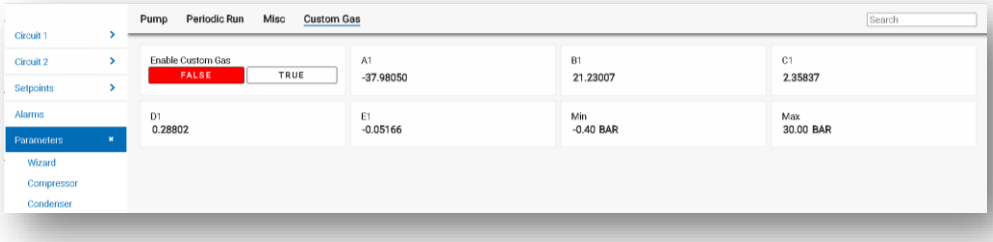
1- Added custom refrigerant option for condenser and for evaporator.
2- Added new option for defrost probe (pressure probe)
3- Update configuration 1 for HP application

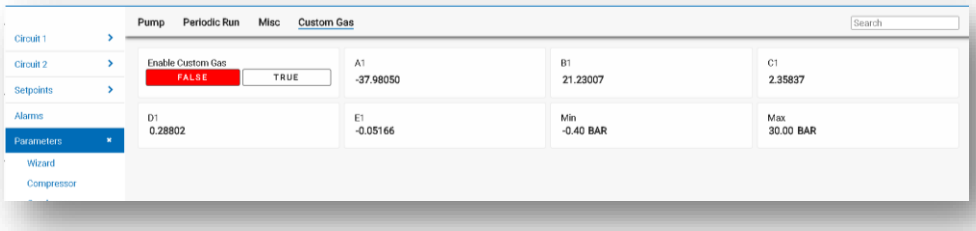
**WEB HMI:**

1- Added Defrost status form




2- Added Custom Gas to convert saturated hi pressure and saturated low.



## Release 2.07.12  10-06-2020

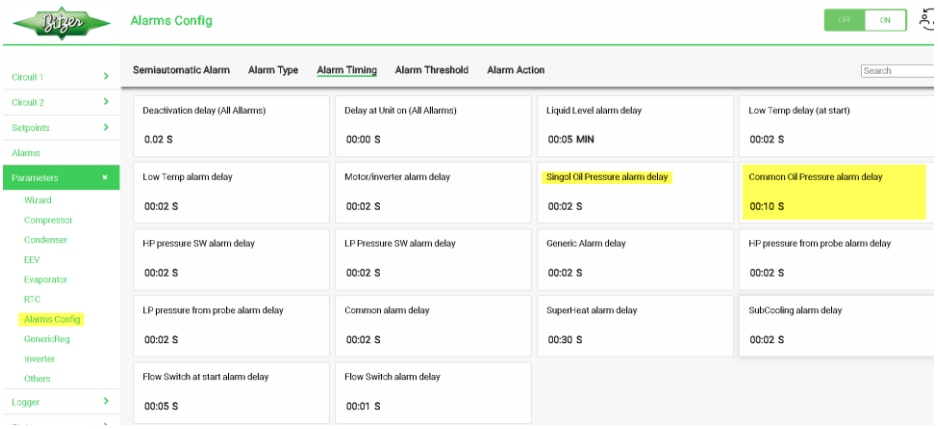
**Validated for HMI Touch Color Version 1.9**

**PLC:**

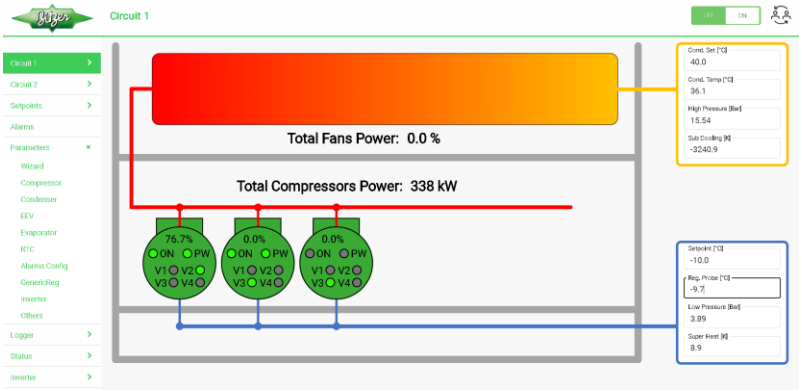
3- Added New parameter to separate the behavior of the common oil alarm delay respect to the compressor oil alarm delay.
4- Changed the feature to Save/Load the IO- Configuration: Now all the configuration (Factory file ) are saved and not only the IO configuration
5- Update the default configuration 9 with the file HP603-M-HSK8561-375-BP  Sn 2198100051.zip
6- Update the default configuration 11 with the file HP503-M-HSK6451-150-BP  Sn 2198100044.zip

**WEB HMI:**

1- Added New parameter to separate the behavior of the common oil alarm delay respect to the compressor oil alarm delay and fixed timing measurement  units.




2- Changed the Compressor LED color according with the electrical panel lights.



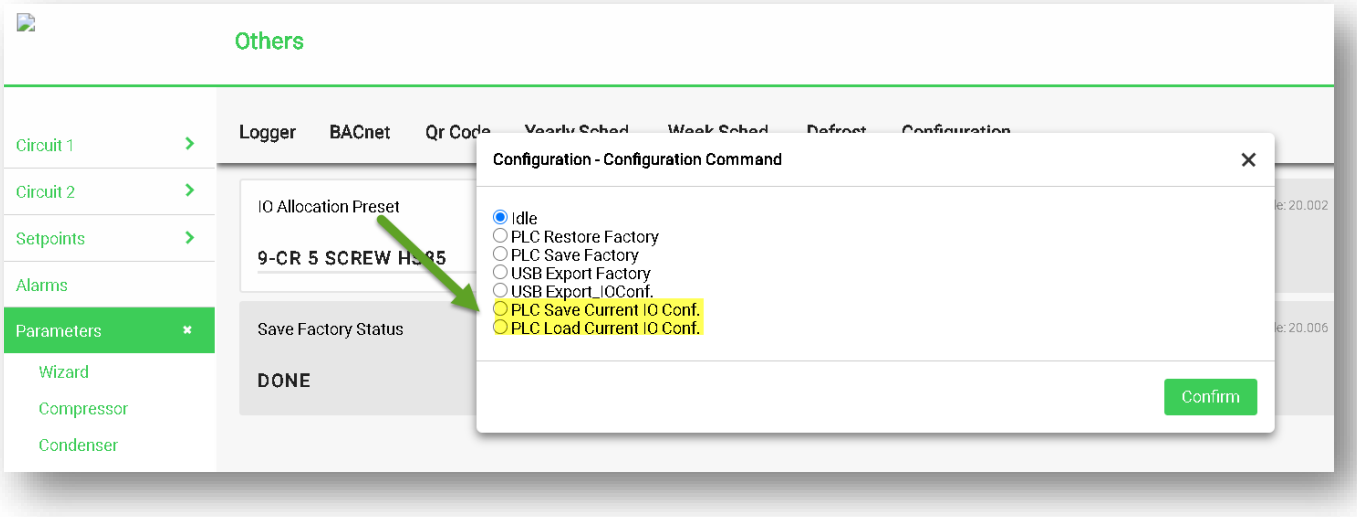
## Release 2.07.11 09-06-2020

**Validated for HMI Touch Color Version 1.8**

**PLC:**

1- Changed behavior of CR3 in case of Screw Compressor in Alarm. It will be set to OFF instead Fixed ON.

2- Added new feature to Save/Load the IO- Configuration Preset in the internal NOR Flash.




The Admin user can modify the IO-Configuration Preset and save the configuration.
The current configuration can be restored.
As soon the user changes the configuration from a preset to another, the new configuration will be automatically uploaded.

## Release 2.07.10  03-06-2020

**Validated for HMI Touch Color Version 1.8**

**PLC:**

1- Fixed export parameter: in case of USB missing with export command is not needed a PLC reboot to recover the error. The file 00PARAM.DAT is always exported in the USB.

## Release 2.07.09  27-05-2020

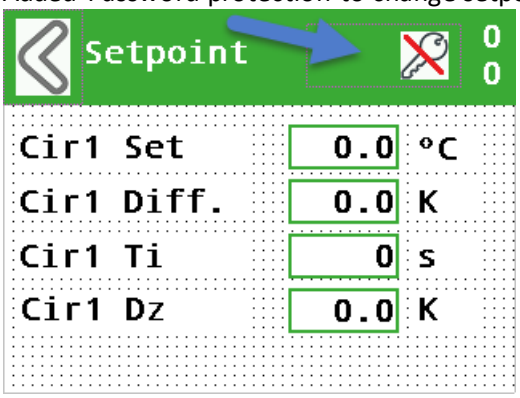
**Validated for HMI Touch Color Version 1.8**

**PLC:**

2- Fixed alarm visualization in HMI remote due to an error in the alarm word calculation.

**Local HMI:**

3- Added Alarm option in Compressor parameter form
4- Added Dead zone for compressor and Condenser in quick set form
5- Added Password protection to change setpoint in




**Web Server**

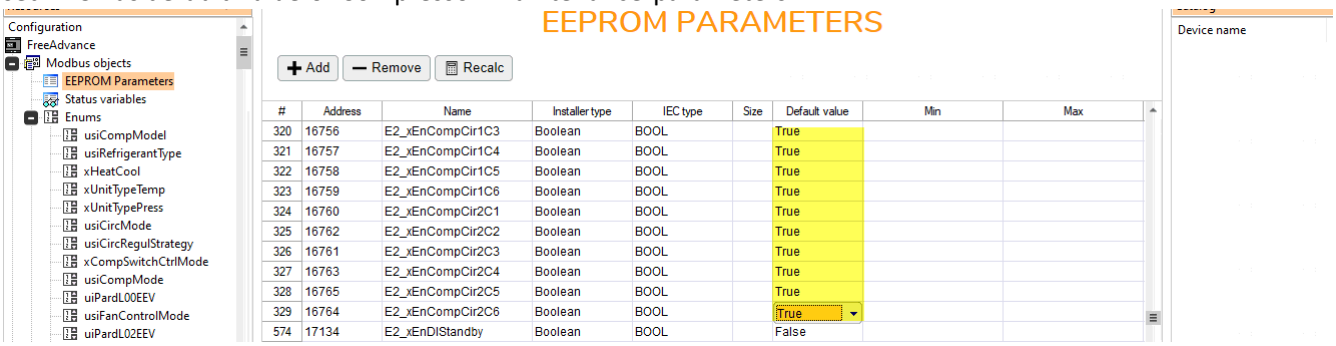
6- Added User Account Password visible only for Admin User.

## Release 2.07.08 27-05-2020

**Validated for HMI Touch Color Version 1.7**

**PLC**

7- set TRUE as default value of Compressor Maintenance parameters.




| # | Address | Name | Installer type | IEC type | Size | Default value | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 320 | 16756 | E2_xEnCompCir1C3 | Boolean | BOOL | | True | | |
| 321 | 16757 | E2_xEnCompCir1C4 | Boolean | BOOL | | True | | |
| 322 | 16758 | E2_xEnCompCir1C5 | Boolean | BOOL | | True | | |
| 323 | 16759 | E2_xEnCompCir1C6 | Boolean | BOOL | | True | | |
| 324 | 16760 | E2_xEnCompCir2C1 | Boolean | BOOL | | True | | |
| 325 | 16762 | E2_xEnCompCir2C2 | Boolean | BOOL | | True | | |
| 326 | 16761 | E2_xEnCompCir2C3 | Boolean | BOOL | | True | | |
| 327 | 16763 | E2_xEnCompCir2C4 | Boolean | BOOL | | True | | |
| 328 | 16765 | E2_xEnCompCir2C5 | Boolean | BOOL | | True | | |
| 329 | 16764 | E2_xEnCompCir2C6 | Boolean | BOOL | | True | | |
| 574 | 17134 | E2_xEnDISstandby | Boolean | BOOL | | False | | |

8- Removed alert in case of parameter change in Fan Condenser.
EvapTempCntrl_V1.xplc
FloatingCondTempCntrl_V1.xplc

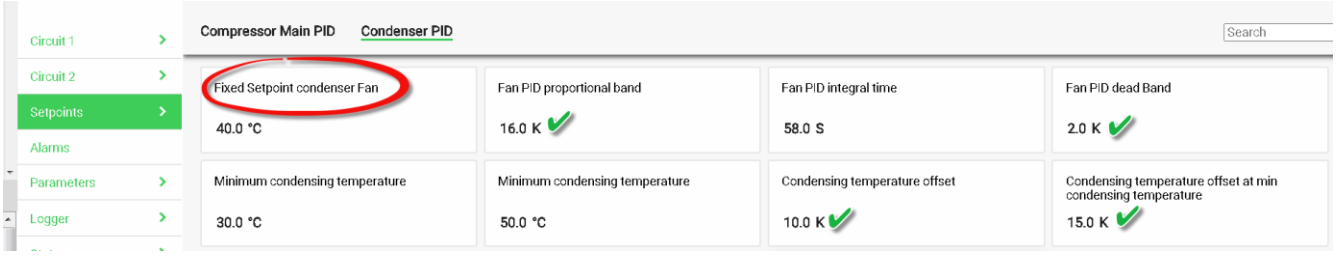
9- Added Low Superheat Limit in commissioning menu

**WebServer**

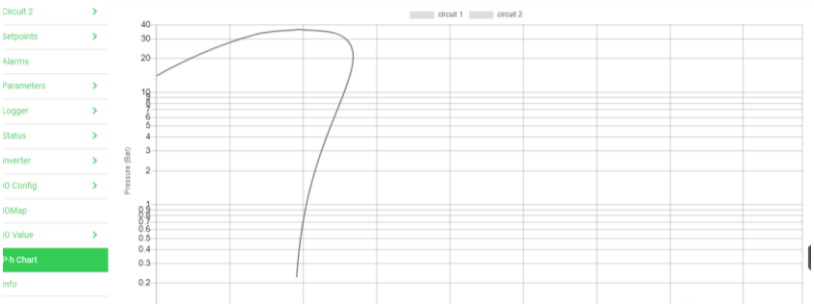
10- Changed description of Fan setpoint to “Fixed Setpoint condenser Fan”

11- Changed Shorted setpoint parameter with a priority order (Set, Prop.Band , Integral, Dead Band)

12- Fixed measurement unit of condensing set parameter from °C to K




13- Fixed P-H chart limit

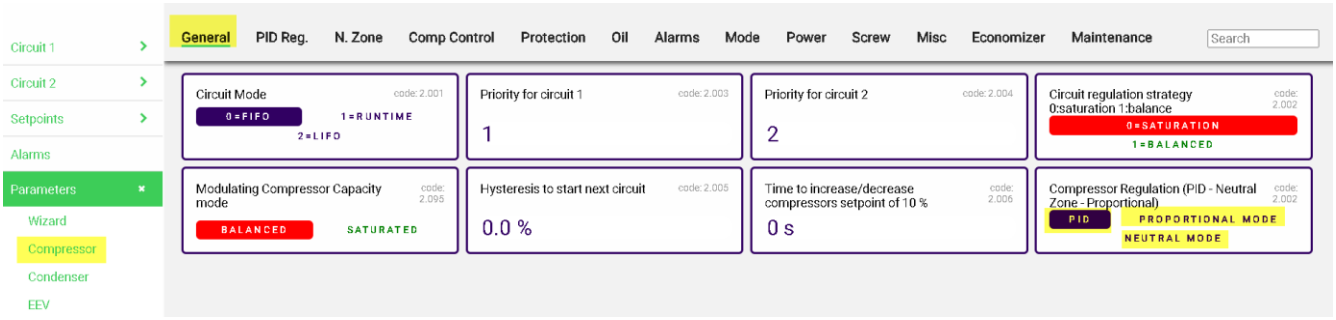


## Release 2.07.07 18-05-2020

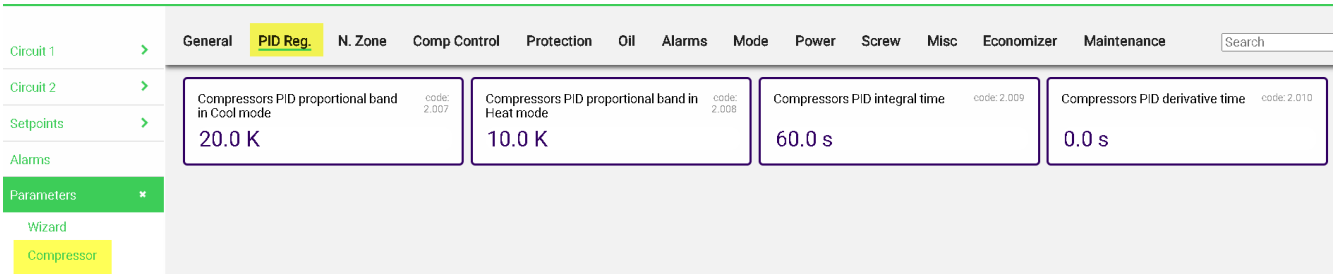
**Validated for HMI Touch Color Version 1.7**

CHANGES:

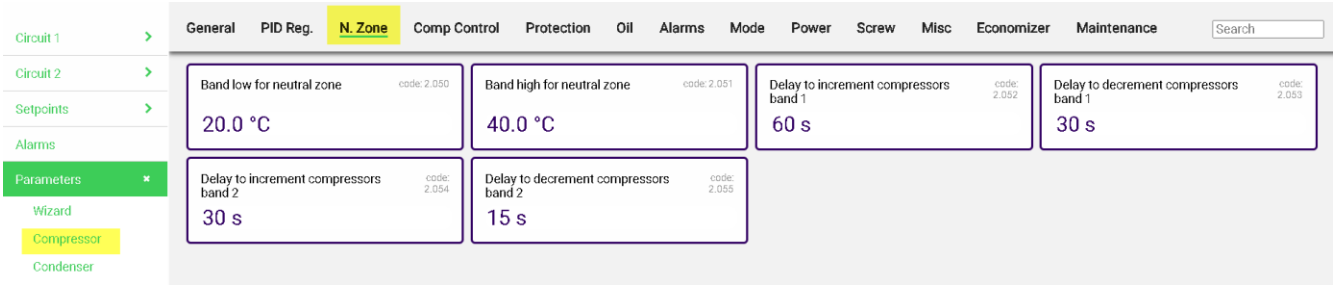
1. Compressor Parameter navigation:
   To simplify the parameter selection, the parameter section has been added



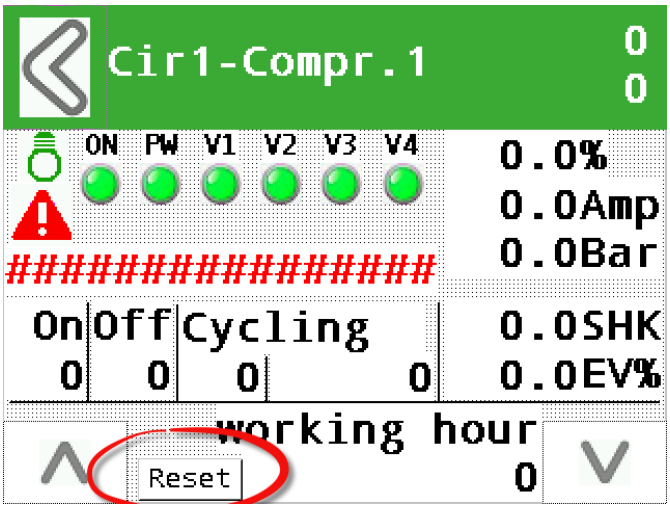

PID:



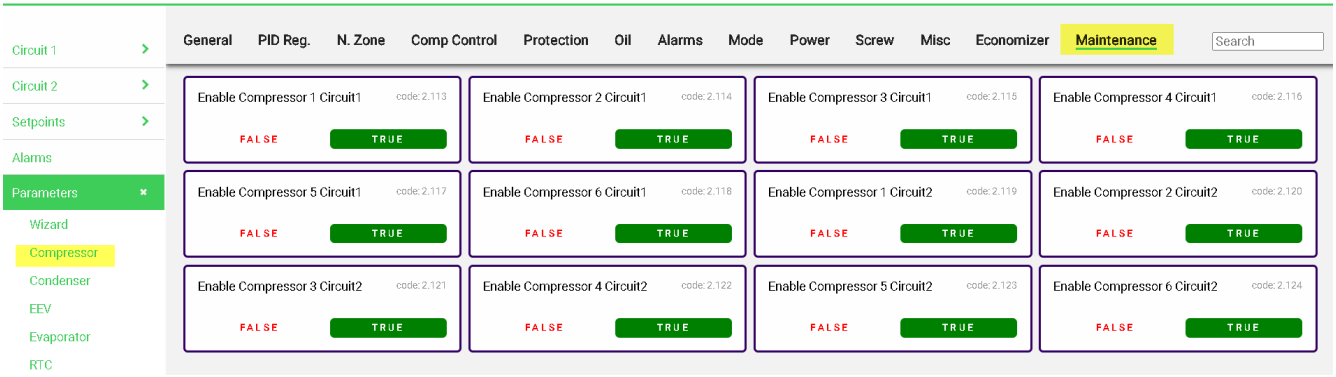

NZone (only for ON/OFF Compressor)



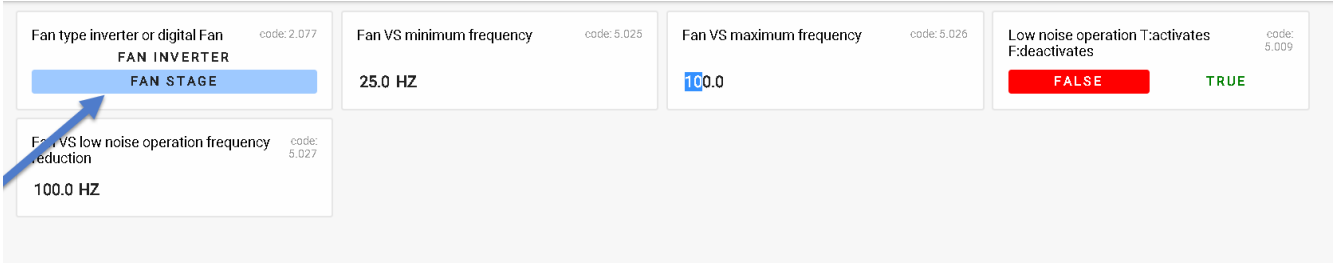

2. In the HMI Touch Project the user level 3 will be able to reset the Compressor Working Hour




3. Added new parameters to disable for maintenance each compressor (alarms of the selected compressor will be disable, the circuit capacity will be distributed to other available compressor).




4. Review Web server style.
5. Added Parameter to select Fan Type. The user can specify if the fan are only digital stage or Fan + Inverter.




FIX:

1. Admin and user account access has been fixed
2. Fan can be resettled by “reset” Button instead of Switch Off Power.

## Release 2.07.06  13-05-2020

**Validated for HMI Touch Color Version 1.6**

CHANGES:
New feature has been implemented:

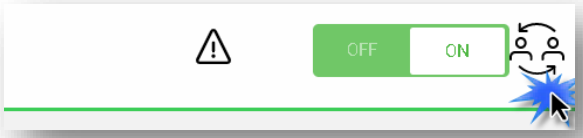
1. Added Web server user manager.
   The follow user is supported:

| User | Password (default) | Resctrictions | | |
|---|---|---|---|---|
| admin | admin | No restriction | | |
| tec | 3 | P-H chart | IO config | |
| oper2 | 2 | P-H chart | IO config | IO Test (read Only) |
| oper1 | 1 | P-H chart | IO config | Parameters (read Only) |

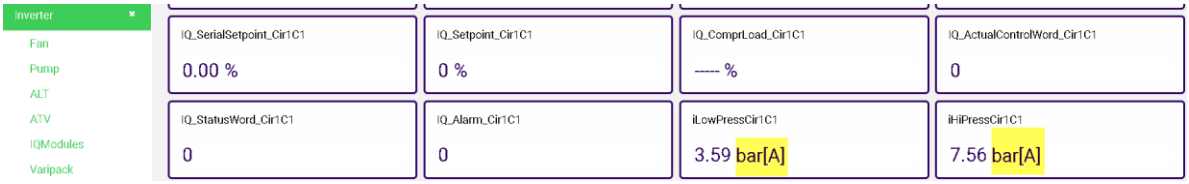
The follow restriction has been applied

| tec | oper2 | oper1 |
|---|---|---|
| read: [<br>'page1.htm', 'page10.htm', 'page11.htm',<br>'page12.htm', 'page13.htm', 'page14.htm',<br>'page15.htm', 'page16.htm', 'page17.htm',<br>'page18.htm', 'page19.htm', 'page2.htm',<br>'page20.htm', 'page21.htm', 'page22.htm',<br>'page23.htm', 'page24.htm', 'page25.htm',<br>'page26.htm', 'page27.htm', 'page28.htm',<br>'page29.htm', 'page3.htm', 'page30.htm',<br>'page31.htm', 'page32.htm', 'page33.htm',<br>'page34.htm', 'page35.htm', 'page36.htm',<br>'page37.htm', 'page38.htm', 'page39.htm',<br>'page4.htm', 'page40.htm', 'page41.htm',<br>'page42.htm', 'page43.htm', 'page44.htm',<br>'page45.htm', 'page5.htm', 'page6.htm',<br>'page7.htm', 'page8.htm', 'page9.htm'<br>],<br>write: [<br>'page1.htm', 'page10.htm', 'page11.htm',<br>'page12.htm', 'page14.htm', 'page15.htm',<br>'page16.htm', 'page17.htm', 'page18.htm',<br>'page19.htm', 'page2.htm', 'page20.htm',<br>'page21.htm', 'page22.htm', 'page23.htm',<br>'page24.htm', 'page25.htm', 'page26.htm',<br>'page27.htm', 'page28.htm', 'page29.htm',<br>'page3.htm', 'page30.htm', 'page31.htm',<br>'page32.htm', 'page33.htm', 'page34.htm',<br>'page35.htm', 'page36.htm', 'page37.htm',<br>'page38.htm', 'page39.htm', 'page4.htm',<br>'page40.htm', 'page41.htm', 'page42.htm',<br>'page43.htm', 'page44.htm', 'page45.htm',<br>'page5.htm', 'page6.htm', 'page7.htm',<br>'page8.htm', 'page9.htm' | read: [<br>'page1.htm', 'page10.htm', 'page11.htm',<br>'page12.htm', 'page13.htm', 'page14.htm',<br>'page15.htm', 'page16.htm', 'page17.htm',<br>'page18.htm', 'page19.htm', 'page2.htm',<br>'page20.htm', 'page21.htm', 'page22.htm',<br>'page23.htm', 'page24.htm', 'page25.htm',<br>'page26.htm', 'page27.htm', 'page28.htm',<br>'page29.htm', 'page3.htm', 'page30.htm',<br>'page31.htm', 'page32.htm', 'page33.htm',<br>'page34.htm', 'page35.htm', 'page36.htm',<br>'page37.htm', 'page38.htm', 'page39.htm',<br>'page4.htm', 'page40.htm', 'page41.htm',<br>'page42.htm', 'page43.htm', 'page44.htm',<br>'page45.htm', 'page6.htm', 'page7.htm',<br>'page8.htm', 'page9.htm'<br>],<br>write: [<br>'page1.htm', 'page12.htm',<br>'page19.htm', 'page2.htm',<br>'page20.htm', 'page24.htm',<br>'page25.htm', 'page3.htm',<br>'page4.htm', 'page6.htm',<br>'page7.htm', 'page8.htm',<br>'page9.htm'<br>] | read: [<br>'page1.htm', 'page10.htm', 'page11.htm',<br>'page12.htm', 'page13.htm', 'page14.htm',<br>'page15.htm', 'page16.htm', 'page17.htm',<br>'page18.htm', 'page19.htm', 'page2.htm',<br>'page20.htm', 'page21.htm', 'page22.htm',<br>'page23.htm', 'page24.htm', 'page25.htm',<br>'page26.htm', 'page27.htm', 'page28.htm',<br>'page29.htm', 'page3.htm', 'page30.htm',<br>'page31.htm', 'page32.htm', 'page33.htm',<br>'page34.htm', 'page4.htm', 'page40.htm',<br>'page41.htm', 'page42.htm', 'page43.htm',<br>'page44.htm', 'page45.htm', 'page6.htm',<br>'page7.htm', 'page8.htm', 'page9.htm'<br>],<br>write: [<br>'page1.htm',<br>'page12.htm',<br>'page2.htm',<br>'page24.htm',<br>'page25.htm',<br>'page4.htm'<br>] |

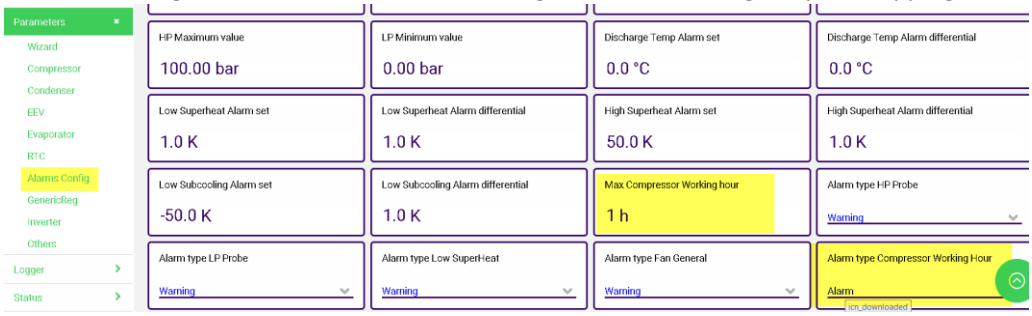
The User can be changed with the switch button on the top right



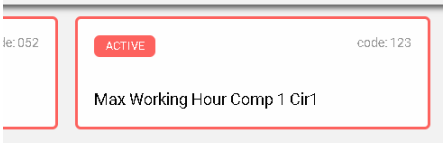
2. Measurement unit on compressor probe in Absolute BAR.



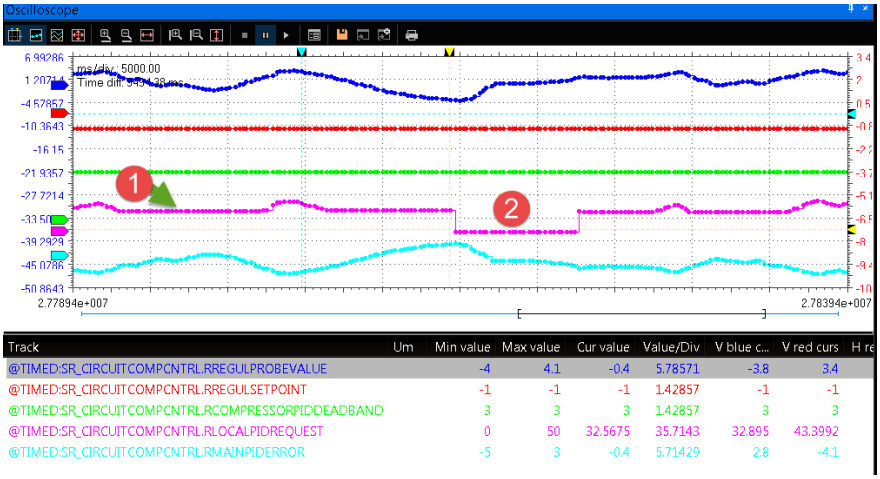

3. Added Working Hours alarm threshold (configurable as warning only or stopping related compressor)




In case of a compressor excee the working Hour an alarm will be generated




4. Added new parameter to manage the Dead Band in the compressor main PID, it is in Kelvin as offset +/- respect to the set.




Here is the test result using 3.0 K

1- Effect of the Dead band

2- Stop compressor below (set – dead band)

Bug FIX:

1. Compressor icons not updated in unit off.
2. Added CREDEN.DAT file in USB folder.
5. Fixed Menus on the webserver Cir1C1, Cir1C2, Cir1C3, Cir1C4, Cir1C5
6. Fixed Description of Maximum Range of Condenser Set Point on the Webserver (Please check)

## Release 2.07.05  30-04-2020

**Validated for HMI Touch Color Version 1.4**

CHANGES:

New feature has been implemented:

1. Added configurable differential for Low SH Alarm
2. Added SH action (off compressor Or warning only)
3. Added SH High temperature alarm
4. Added Sub Cooling Low temperature alarm
5. Added 6+6 Condenser fan alarm one for each stage
6. Added new option to disable the unnecessary alarm

Bug FIX:

In this version has been fixed the follow issue

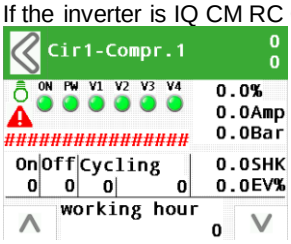
3. Measurement unit on local display ( Bug added in version 2.7.4)
4. SH measurement unit in Kelvin
5. Working hour in (Touch HMI)

# Release 2.07.04  30-04-2020

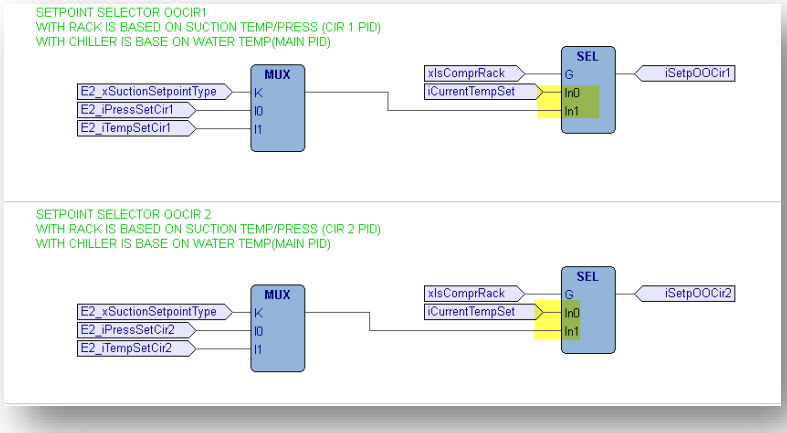
**Validated for HMI Touch Color Version 1.4**

CHANGES:

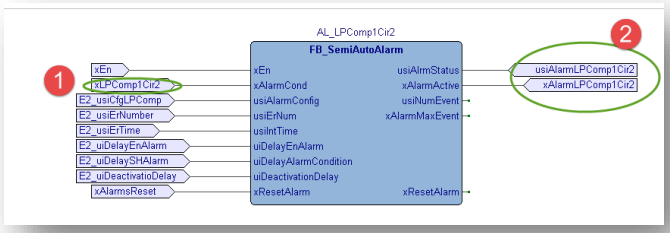
2. Added New Modbus Option to read the Part winding and Compressor On status from IQ modules If the inverter is IQ CM RC 01 or IQ CM SW 01.



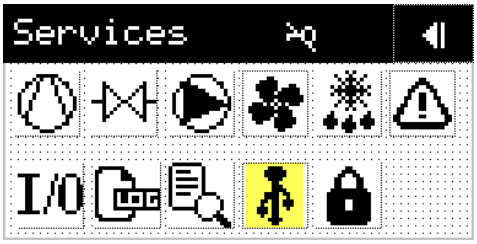

3. Fixed setpoint selection in case of Dead Zone regulation

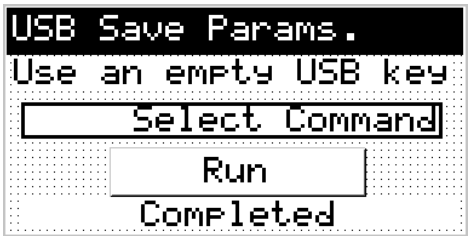



4. Fixed circuit 2 compressor 1 low pressure alarm.



5. Fixed Factory Save option:
   Now is possible save in NOR and export a in an empty USB the EEPROM parameter to “clone” a PLC configuration. The configuration saved in the internal NOR can also be restored.



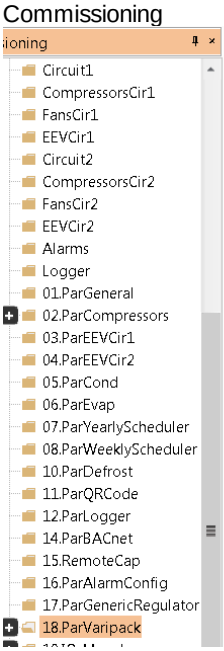




6. Compiled with multifile option.

7. Update Varipack Parameter Management
   With Varipack firmware 1.23 is possible to write parameters as configuration preset.
   Reset alarm and Remote control still not available due to a Varipack firmware limitation.

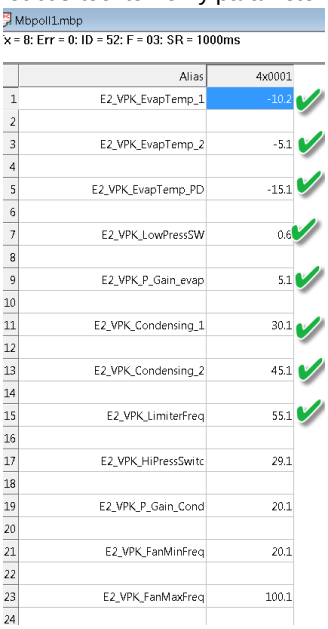
   Here is the test result, from commissioning menu is possible to set the preset value that will be send at every OFF to ON operation.

Commissioning




| Address | Name | Value | |
|---|---|---|---|
| 17393 | E2_VPK_EvapTemp_1 | -10.2 | °C |
| 17408 | E2_VPK_Condensing_1 | -5.1 | °C |
| 17391 | E2_VPK_EvapTemp_PD | -15.1 | °C |
| 17410 | E2_VPK_Condensing_2 | 0.6 | °C |
| 17412 | E2_VPK_LimiterFreq | 5.1 | °C |
| 17414 | E2_VPK_HiPressSwitc | 30.1 | °C |
| 17416 | E2_VPK_P_Gain_Cond | 45.1 | °C |
| 17418 | E2_VPK_switchOnDelay | 436:54 | s |
| 17419 | E2_VPK_switchOffDelay | 283:08 | s |
| 17420 | E2_VPK_HoldTimeFMin | 873:49 | s |
| 17400 | E2_uiCompressorProbe | | |
| 17401 | E2_xInvCapMode | Saturated | |
| 17422 | E2_VPK_TimeResetInterval | 873:49 | s |
| 17421 | E2_VPK_HoldTimeF50 | 281:12 | s |
| 17430 | E2_VPK_InvMaxFreq | 5.1 | Hz |
| 17432 | E2_VPK_InvFreqStart_1 | 10.1 | Hz |
| 17434 | E2_VPK_InvFreqStop_1 | 21.1 | Hz |
| 17436 | E2_VPK_InvFreqStart_2 | 62.1 | Hz |
| 17438 | E2_VPK_InvFreqStop_2 | 0.1 | Hz |
| 17402 | E2_VPK_EvapTemp_2 | 100.1 | °C |
| 17423 | E2_VPK_Do1Logic | | s |
| 17424 | E2_VPK_RumpUpTime | 0.0 | Hz/s |
| 17426 | E2_VPK_RumpDownTime | 0.0 | Hz/s |

Modbus tool to verify parameter



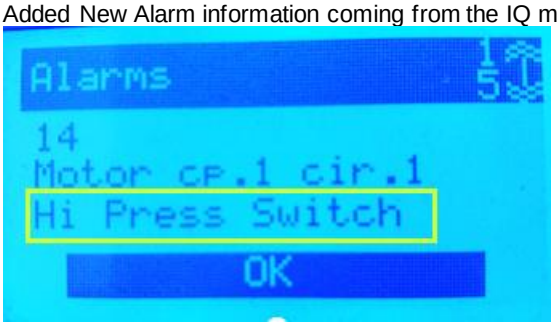
## Release 2.07.03 15-04-2020

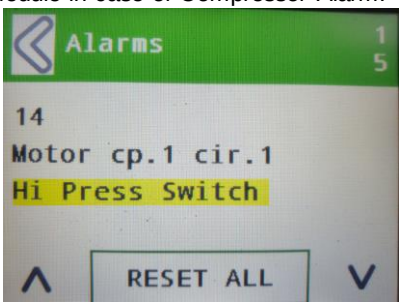
**Validated for HMI Touch Color Version 1.3**

CHANGES:

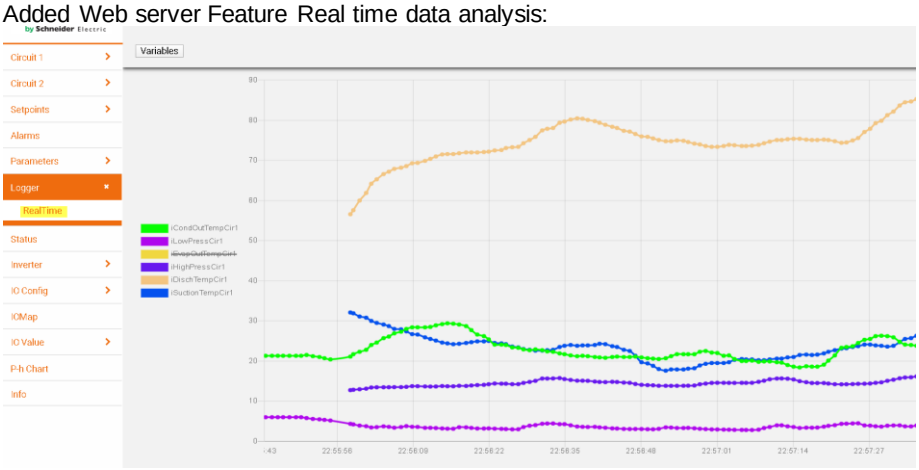
8. Added new alarms for inverter communication Time Out.

9. Added New Alarm information coming from the IQ module in case of Compressor Alarm.

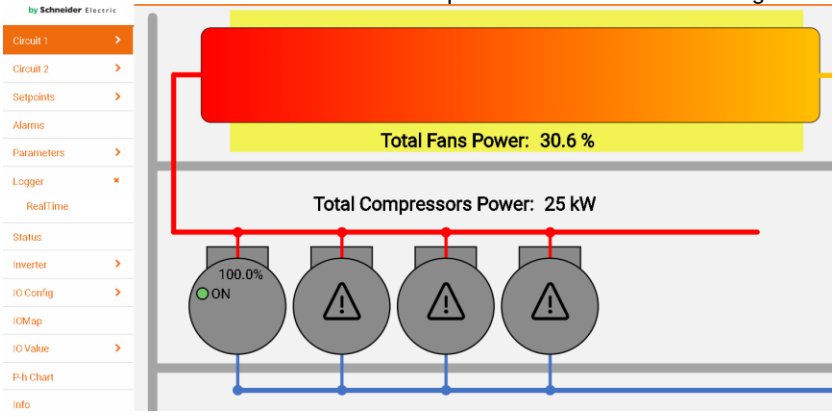


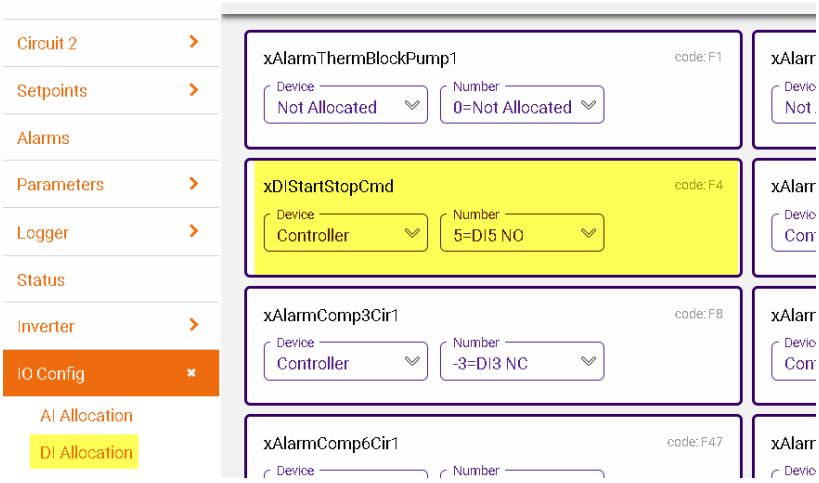

10. Added Web server Feature Real time data analysis:




11. allow “No Fans in condenser section” Set parameter Number of fan stages circuit 1 (code: 5.010) to 0




12. New Option for Digital input **StartStopCmd** (F4), now can be used as start stop Button (with same priority of the Web or Local HMI button)




13. New Option for developer available only in commissioning to simulate the behavior of the Probe


14. Fixed Web cache issue for IO MAP and data logger chart

Known issue (Varipack):

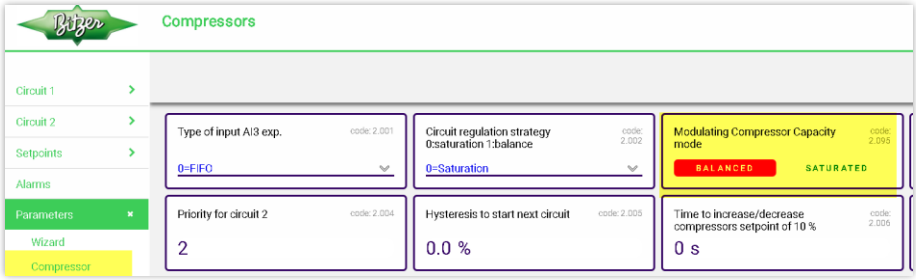
- How to reset inverter?
- How to change parameter via Modbus?
- How to contro inverter via Modbus?

# Release 2.07.02 3-04-2020

**Version compiled for Free Studio Plus 1.2**

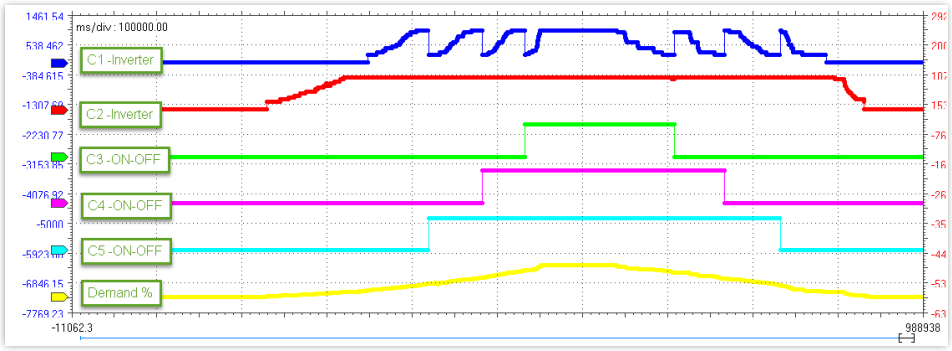
CHANGES:

15. Added new regulation mode to manage the modulating compressor in saturated or Balancing Mode:
    a. Added dedicated parameter to switch the power calculation strategy.

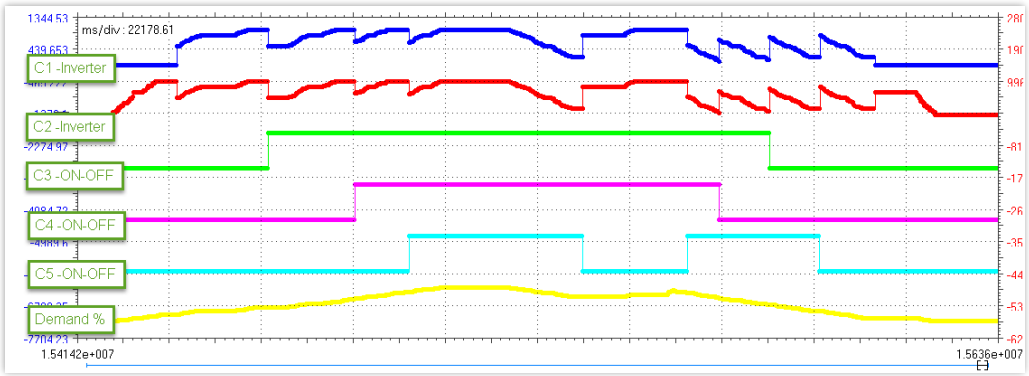



    b. Test with 2 modulating compressor and 3 on off compressor

Behavior of a system configured as **Saturated Mode**

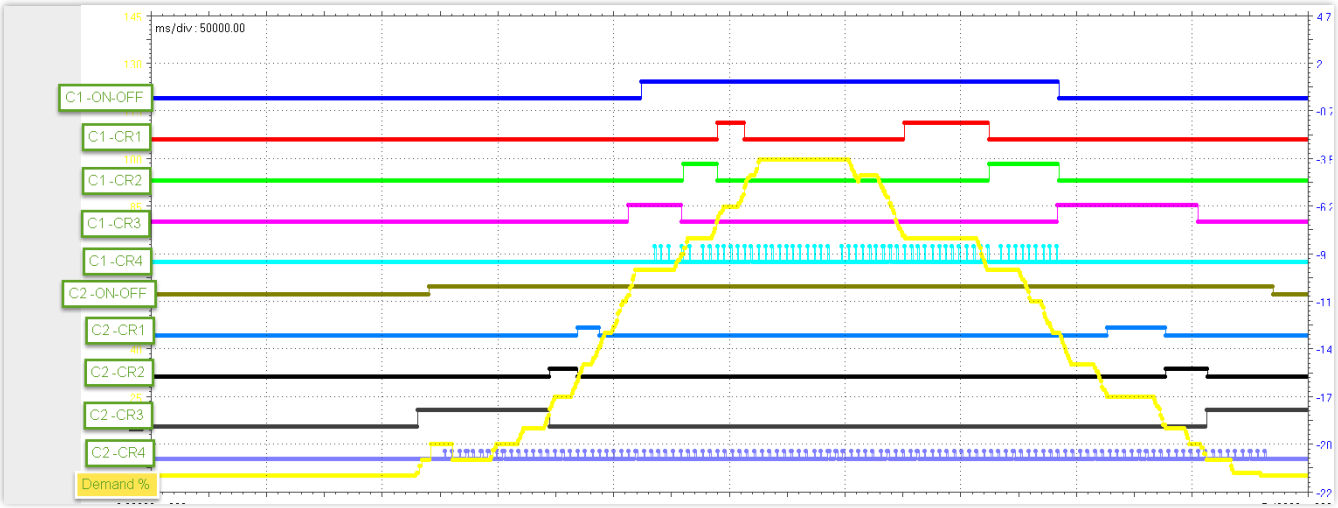



Behavior of a system configured as **Balanced Mode**

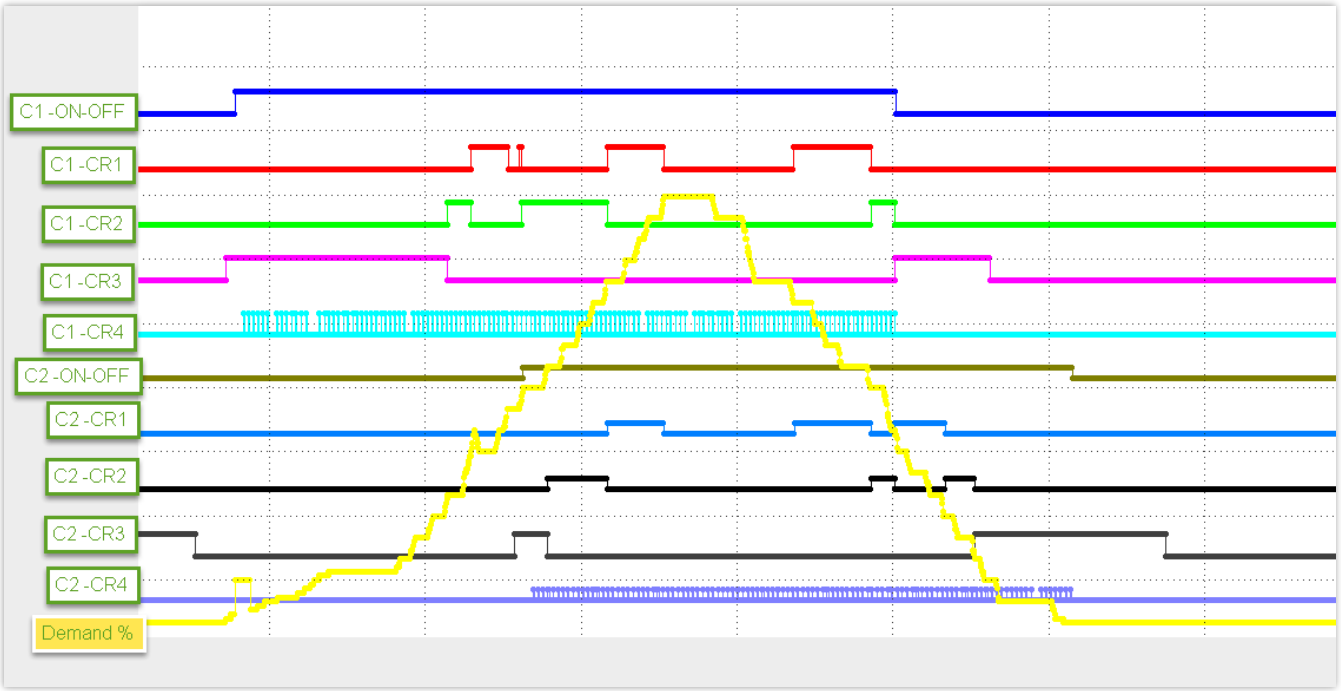


c. Test with 2 Compressor HS85 compressor and 3 on off compressor

Behavior of a system configured as **Saturated Mode**

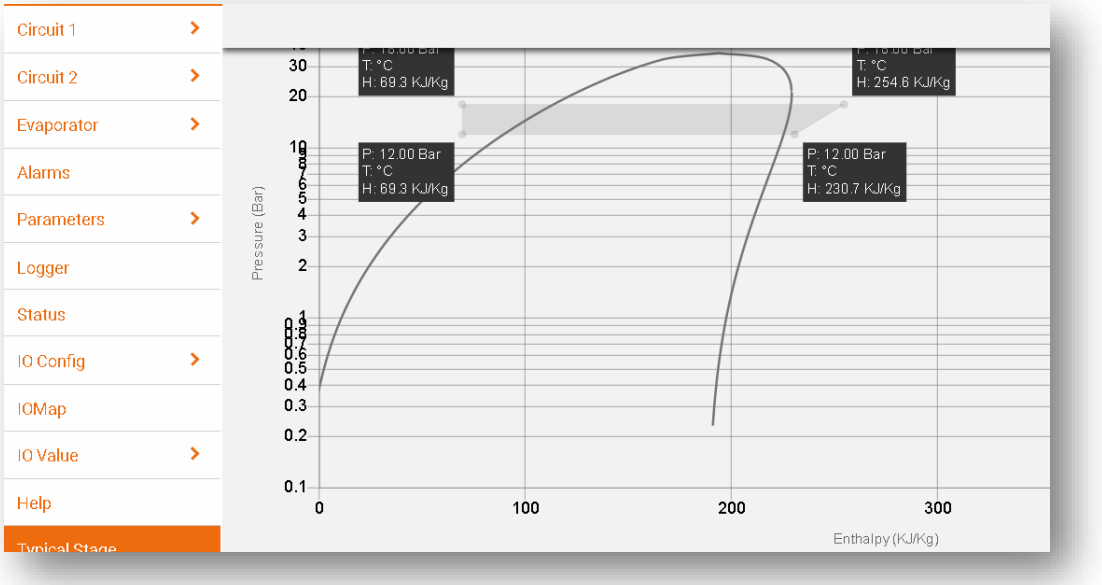



Behavior of a system as **Balanced Mode**

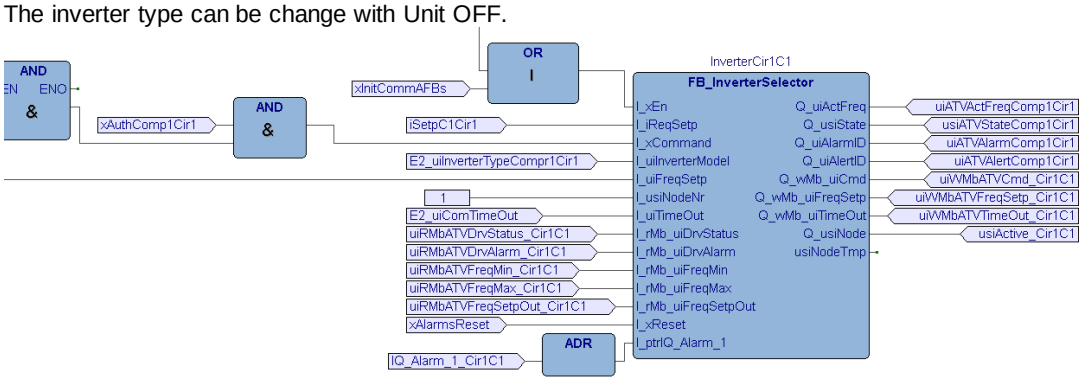


16. Added Pressure-Enthalpy diagram for circuit 1 and circuit 2.
To enable the P-H chart the follow variable shall be assigned to the IO configuration.

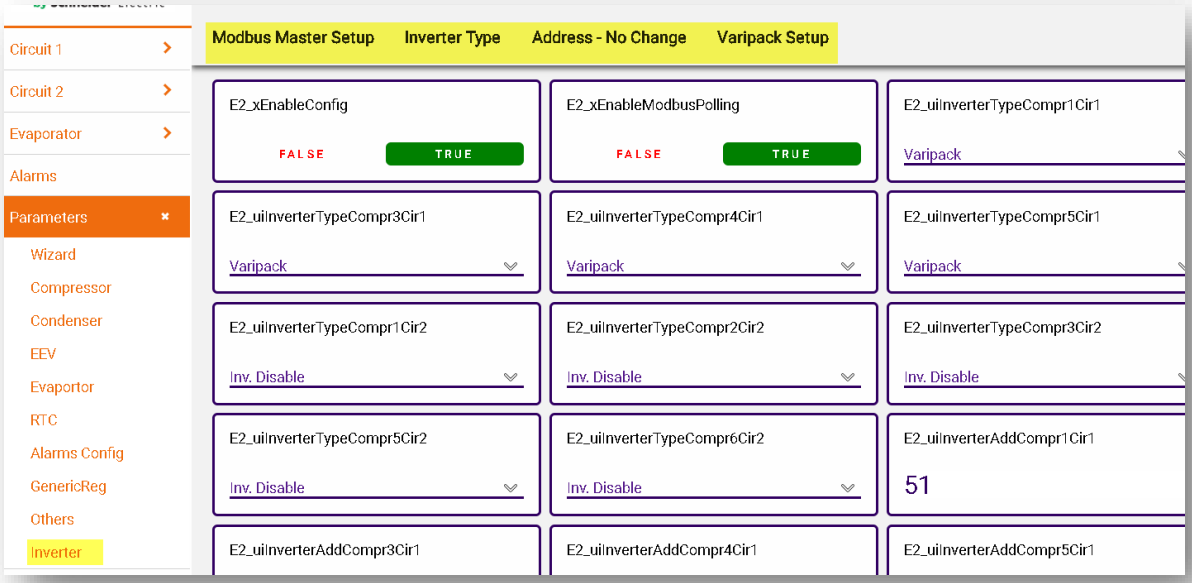
| | | | |
|---|---|---|---|
| iLowPressCir1 | Low Pressure | Text | Circuit 01 |
| iHighPressCir1 | High Pressure | Text | Circuit 01 |
| iEvapOutTempCir1 | Evaporator Out Temperature | Text | Circuit 01 |
| iCondOutTempCir1 | Condensing Out Temperature | Text | Circuit 01 |
| iDischTempCir1 | Discharge Temperature | Text | Circuit 01 |



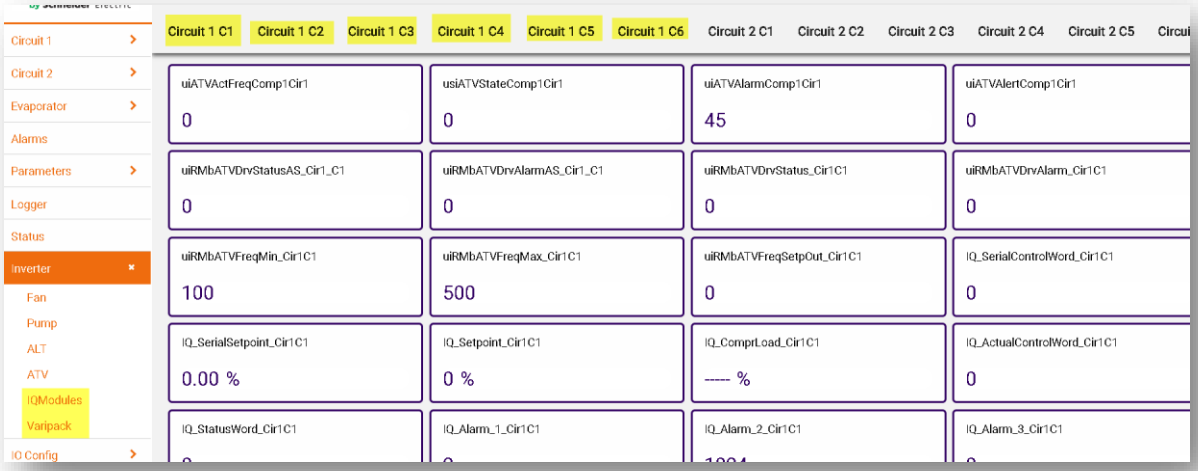

17. Added Varipack Integration:
New program will manage read and wrtite a to Varipack in IEC code in task Background.
Up to 12 Varipack (6 in circuit 1 and 6 for circuit 2) can be configured.
The register are configurable in the init program
The inverter type can be change with Unit OFF.



18. Added new webserver page to browse the inverter parameter
    Note: Varipack setting are send but inverter is not updating (probably a password has to be send in the init process)




19. Added new webserver page to browse the inverter status
    The inverter status is divide in page and, Compressor Inverter can be grouped with a subcategory (Circuit 1 C1 )



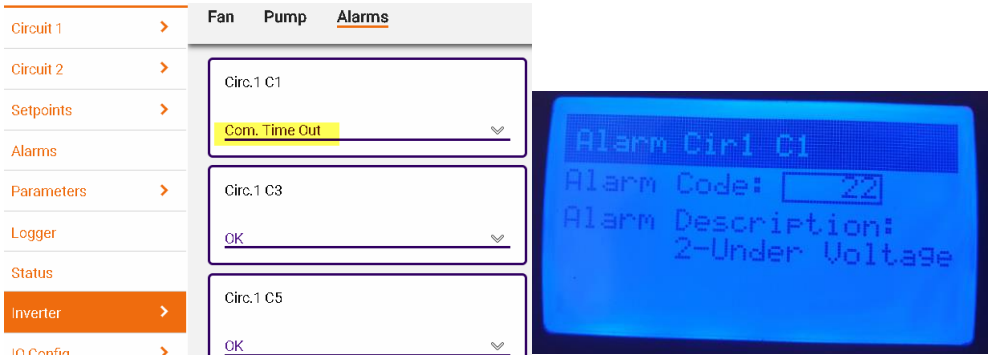
## 20. Alarm code normalization between **IQCMRC1** - **SE-i1** - **Varipack (VPK)**

```
CASE uiAlarm1 OF
  1:    AlrDescription:='Serial TimeOut'
  3:    AlrDescription:='Env.SSTL SDT L'
  4:    AlrDescription:='Env.SST L'
  5:    AlrDescription:='Env.SST L SDT H'
  6:    AlrDescription:='Env.SDT H'
  7:    AlrDescription:='Env.SST H SDT H'
  8:    AlrDescription:='Env.SST H'
  9:    AlrDescription:='Env.SST H SDT L'
  10:   AlrDescription:='Env.SDT L'
  11:   AlrDescription:='Env. Env T Out'
  12:   AlrDescription:='Env. Config'
  15:   AlrDescription:='Oil Lev Low'
  17:   AlrDescription:='32-Power Loss Stope'        // VPK31
  18:   AlrDescription:='21-Motor Phase Loss'       // VPK21
  19:   AlrDescription:='Motor Phase seq.'
  20:   AlrDescription:='Motor Temp. High'
  21:   AlrDescription:='1-Over Voltage'   // VPK1
  22:   AlrDescription:='2-Under Voltage'  // VPK2
  23:   AlrDescription:='3-Over Current'   // VPK3
  24:   AlrDescription:='4-Stack Fault Current'      // VPK4
  25:   AlrDescription:='5-StackOver Current'       // VPK5
  26:   AlrDescription:='6-Current Limit'   // VPK6
  27:   AlrDescription:='7-CMotor Stall'            // VPK7
  28:   AlrDescription:='8-Inverse Time'            // VPK8
  29:   AlrDescription:='9-Motor I2T'               // VPK9
  30:   AlrDescription:='10-Low Speed'             // VPK10
  31:   AlrDescription:='11-Heatsink Hi Temp'      // VPK11
  32:   AlrDescription:='12-Internal Hi Temp'      // VPK12
  33:   AlrDescription:='13-Motor Hi Temp'         // VPK13
  34:   AlrDescription:='14-Start Fail'            // VPK14
  35:   AlrDescription:='15-Brake Short'           // VPK15
  36:   AlrDescription:='16-Brake Resistor'        // VPK16
  37:   AlrDescription:='17-Brake Switch'  // VPK17
  38:   AlrDescription:='18-Local Control'  // VPK18
  39:   AlrDescription:='19-Coms Breack' // VPK19
  40:   AlrDescription:='20-Line Contactor'// VPK20
  41:   AlrDescription:='22-VDC Ripple'           // VPK22
  42:   AlrDescription:='23-Base MB Breack'       // VPK23
  43:   AlrDescription:='25-PMCK Speed' // VPK25
  44:   AlrDescription:='26-OverSpeed'            // VPK26
  45:   AlrDescription:='27-STO Active'            // VPK27
  46:   AlrDescription:='28-FBK Missing'  // VPK28
  47:   AlrDescription:='29-Int. Fan Fail'        // VPK29
  48:   AlrDescription:='30-Current Sensor'       // VPK30
  49:   AlrDescription:='Config. No File'
  50:   AlrDescription:='Config. CRC Er.'
  52:   AlrDescription:='Config. Red Only'
  54:   AlrDescription:='HW: 3.3V'
  55:   AlrDescription:='HW: 5V'
  62:   AlrDescription:='Sensor Motor Temp'
  68:   AlrDescription:='Suct Press Low'
  69:   AlrDescription:='Disch Press Hi'
  70:   AlrDescription:='24-HW: 24V'              // VPK24
  78:   AlrDescription:='Disch. Temp. HI'
  84:   AlrDescription:='Motor Temp. coolDw'
  85:   AlrDescription:='Sensor Disch Temp'
  86:   AlrDescription:='Sensor AUX Temp'
  90:   AlrDescription:='Hi Press Switch'
  94:   AlrDescription:='Sensor Suct P Low'
  95:   AlrDescription:='Sensor Suct P Hi'
  96:   AlrDescription:='Sensor Disch P Low'
  97:   AlrDescription:='Sensor Disch P Hi'
  102:  AlrDescription:='Oil Inj no effect'
  119:  AlrDescription:='Excide Fault/24 h'
  120:  AlrDescription:='Excide Reset/24 h'
  133:  AlrDescription:='Oil Flow Low'
  134:  AlrDescription:='Oil Pres Low'
  135:  AlrDescription:='Motor Freq Low'
  136:  AlrDescription:='Motor Freq Hi'
  137:  AlrDescription:='Oil Stop Valve'
  145:  AlrDescription:='HW: 24V sens 1'
  146:  AlrDescription:='HW: 24V sens 2'
  150:  AlrDescription:='Sign.but no run'
  152:  AlrDescription:='No sig. Comr On'
  153:  AlrDescription:='Motor Curr. High'
  159:  AlrDescription:='Undef. C. State.'
ELSE
        AlrDescription:='Undefined Alarm code';
```

```
END_CASE;
```

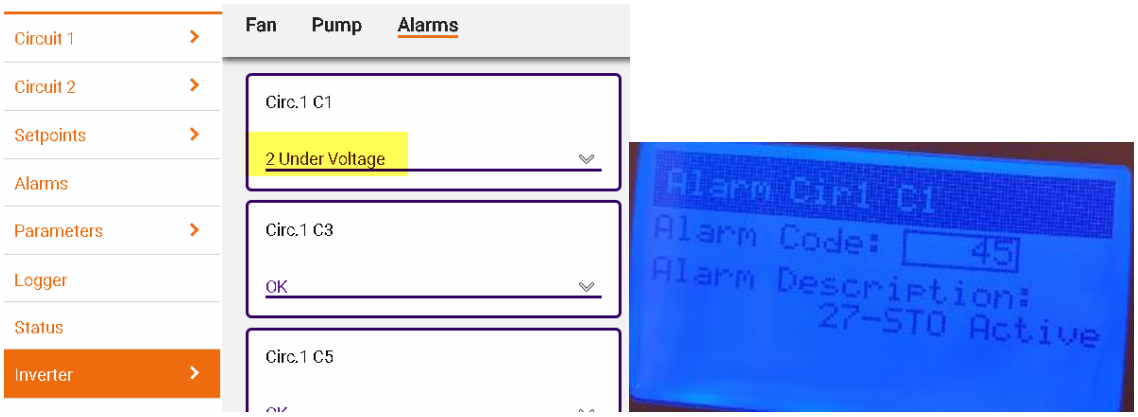
a. Varipack Alarm Test Under Voltage Alarm:


Loclal/remote HMI or webserver



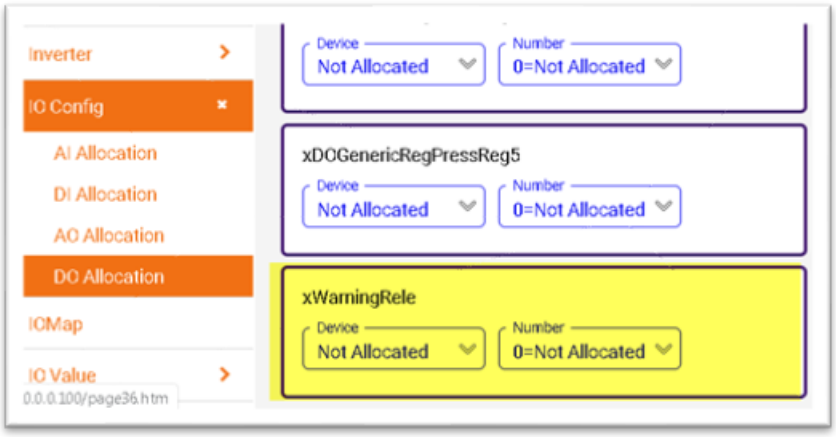

b. Varipack Alarm Test Under Voltage Alarm:


Loclal/remote HMI or webserver



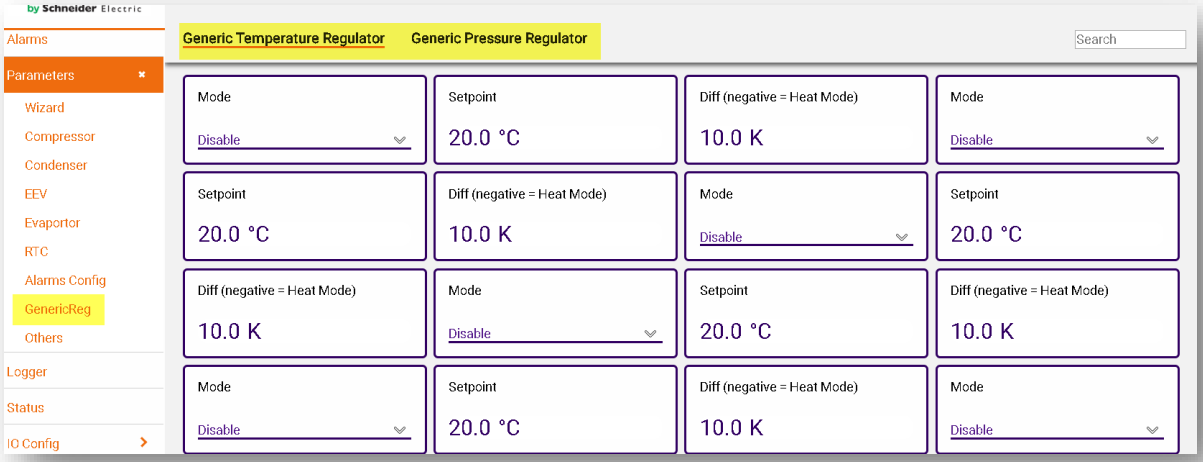
21. Added **keep alive** and **Node manger** for all the inverter to manage difference priority in read/ write message.

22. Added Warning relay DO active if any alarm out is active.

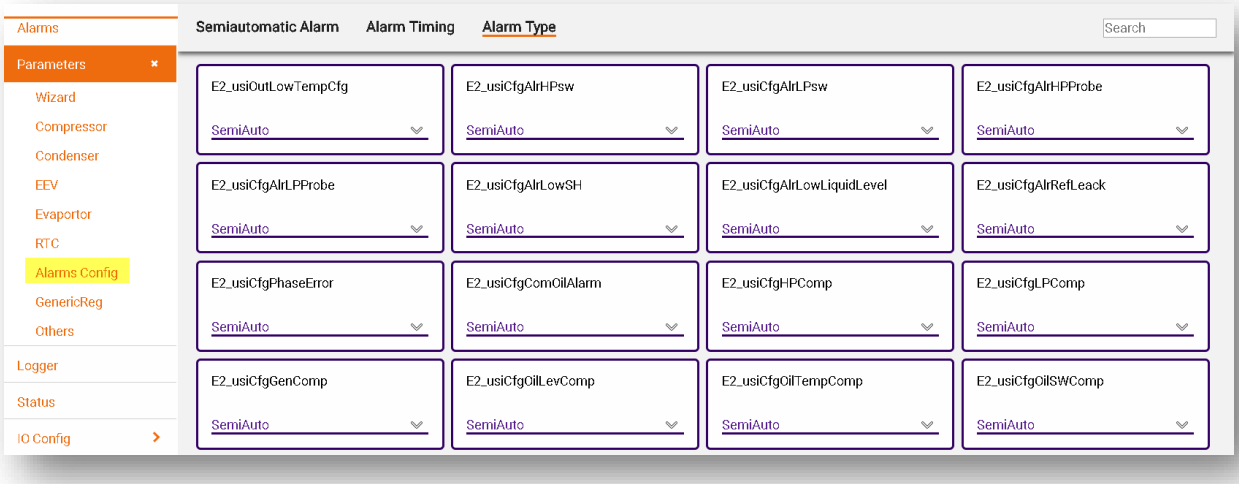



23. Added New option for alarm management
Active alarm and Resettable alarm has now different color

24. Added Generic Regulator 6+6 configurable for temperature and pressure probe
    Each Generic Regulator can be configure with a dedicated probe or can be connected to an existing probe.



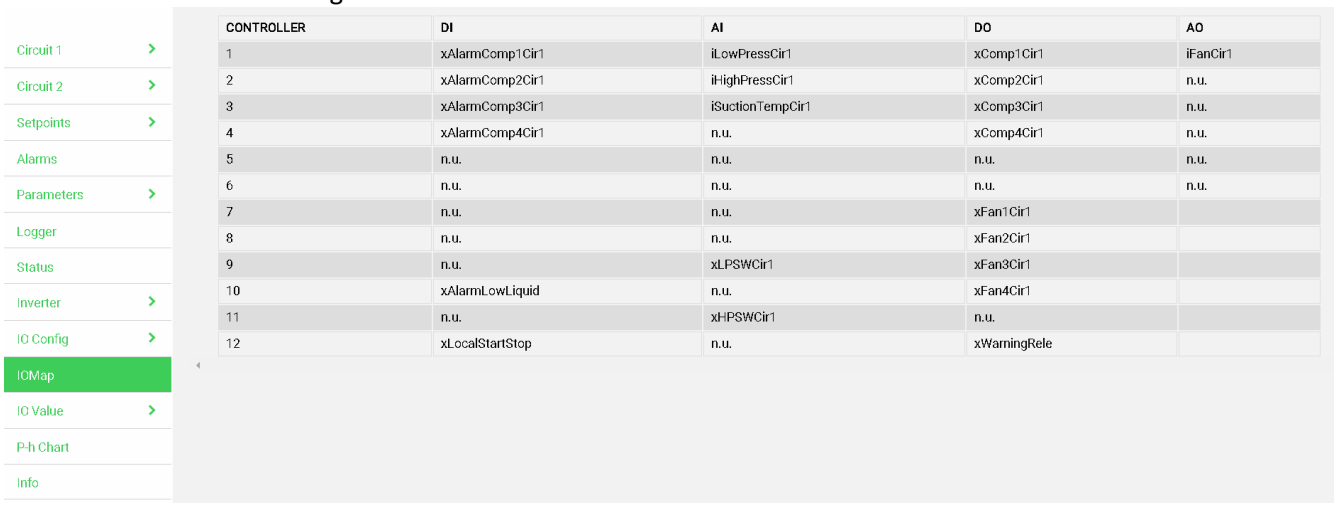

25. Added Alarm Configuration Menu to setup alarm type and alarm delay.




26. Added new parameter to use the compressor probe:
    Low and HI Pressure, Condenser and evaporator temperature are read from the IQ modules


NOTE: If not disable also the Condenser temperature and evaporator temperature are read from the Compressor Module

27. New default value for Configuration 10 as below screen shot




| CONTROLLER | DI | AI | DO | AO |
|---|---|---|---|---|
| 1 | xAlarmComp1Cir1 | iLowPressCir1 | xComp1Cir1 | iFanCir1 |
| 2 | xAlarmComp2Cir1 | iHighPressCir1 | xComp2Cir1 | n.u. |
| 3 | xAlarmComp3Cir1 | iSuctionTempCir1 | xComp3Cir1 | n.u. |
| 4 | xAlarmComp4Cir1 | n.u. | xComp4Cir1 | n.u. |
| 5 | n.u. | n.u. | n.u. | n.u. |
| 6 | n.u. | n.u. | n.u. | n.u. |
| 7 | n.u. | n.u. | xFan1Cir1 | |
| 8 | n.u. | n.u. | xFan2Cir1 | |
| 9 | n.u. | xLPSWCir1 | xFan3Cir1 | |
| 10 | xAlarmLowLiquid | n.u. | xFan4Cir1 | |
| 11 | n.u. | xHPSWCir1 | n.u. | |
| 12 | xLocalStartStop | n.u. | xWarningRele | |

Known issue (Varipack):

- How to reset inverter?
- How to change parameter via Modbus?
- How to contro inverter via Modbus?

## Release 2.07.01 26-03-2020

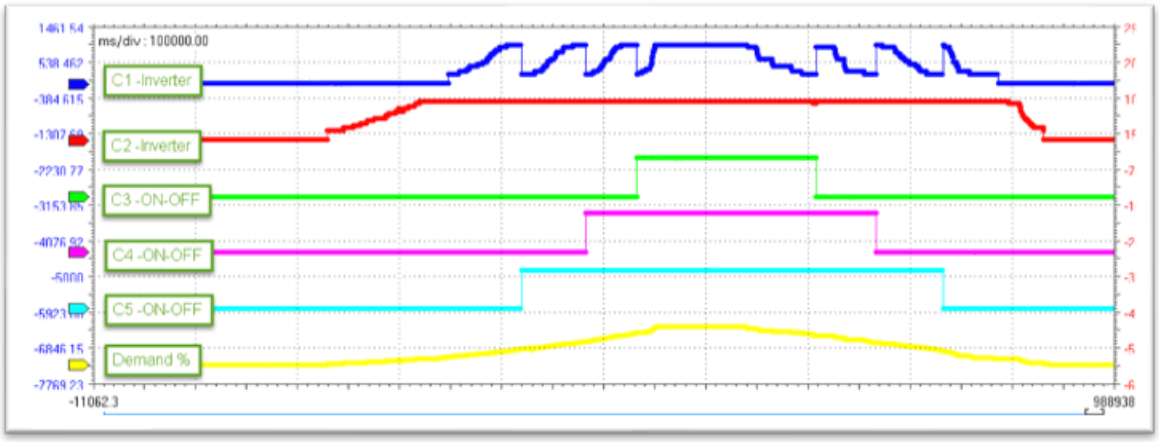
Compiled for FSP 1.2

CHANGES:

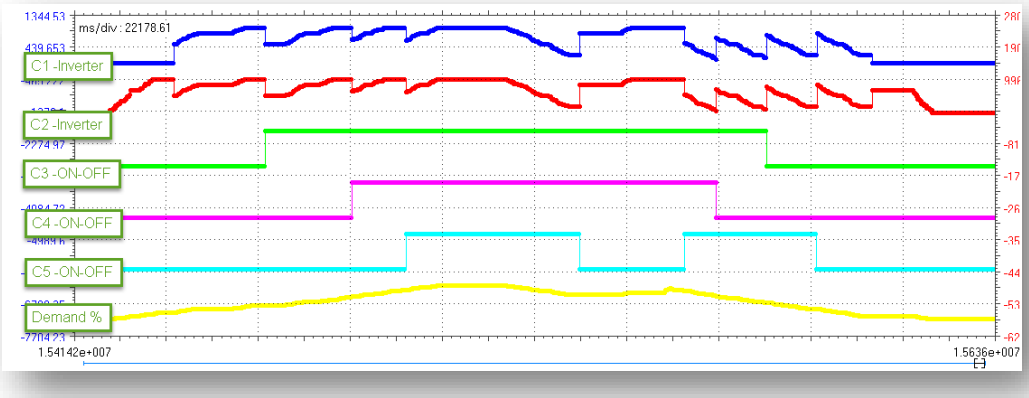
28. Added new regulation mode to manage the modulating compressor:


a. Test with 2 modulating compressor and 3 on off compressor

Behavior of a system configured as **Saturated Mode**

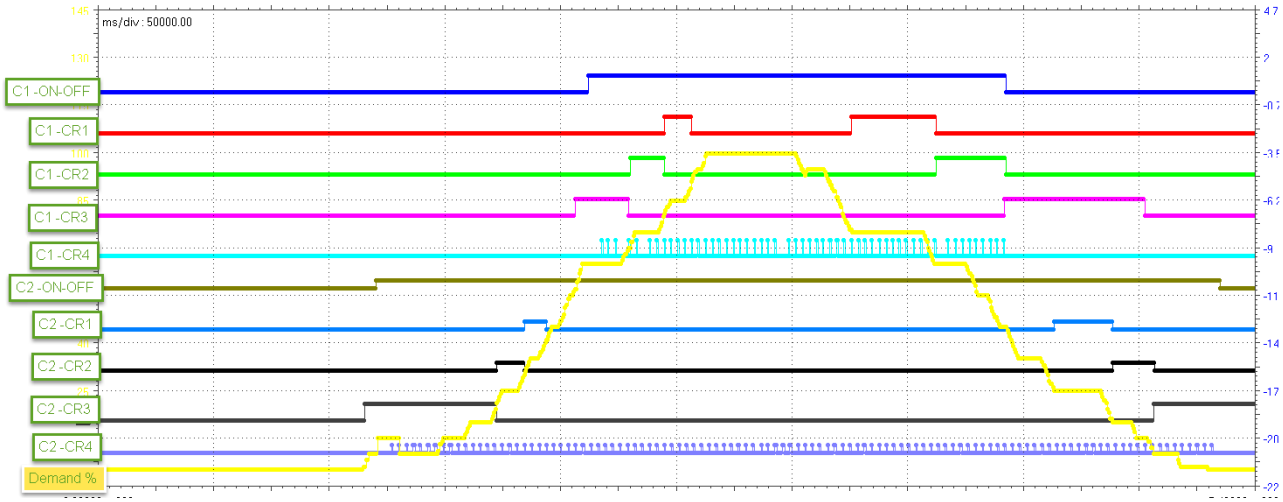



Behavior of a system configured as **Balanced Mode**

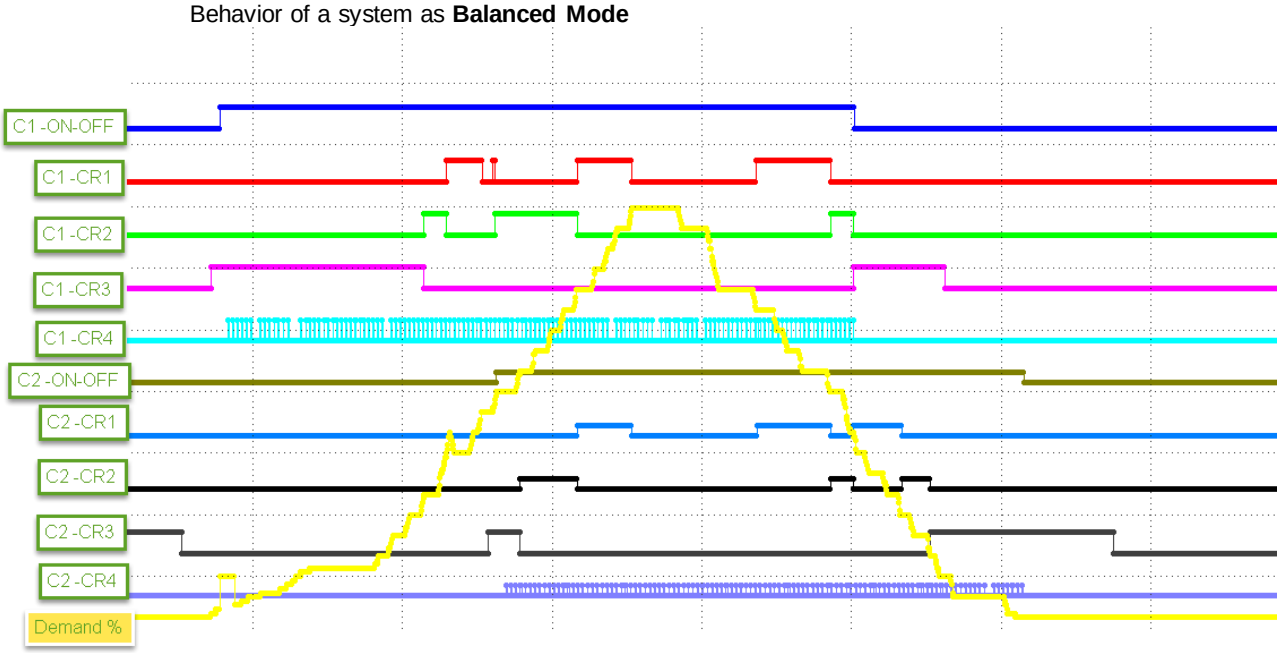


b. Test with 2 Compressor HS85 compressor and 3 on off compressor

Behavior of a system configured as **Saturated Mode**

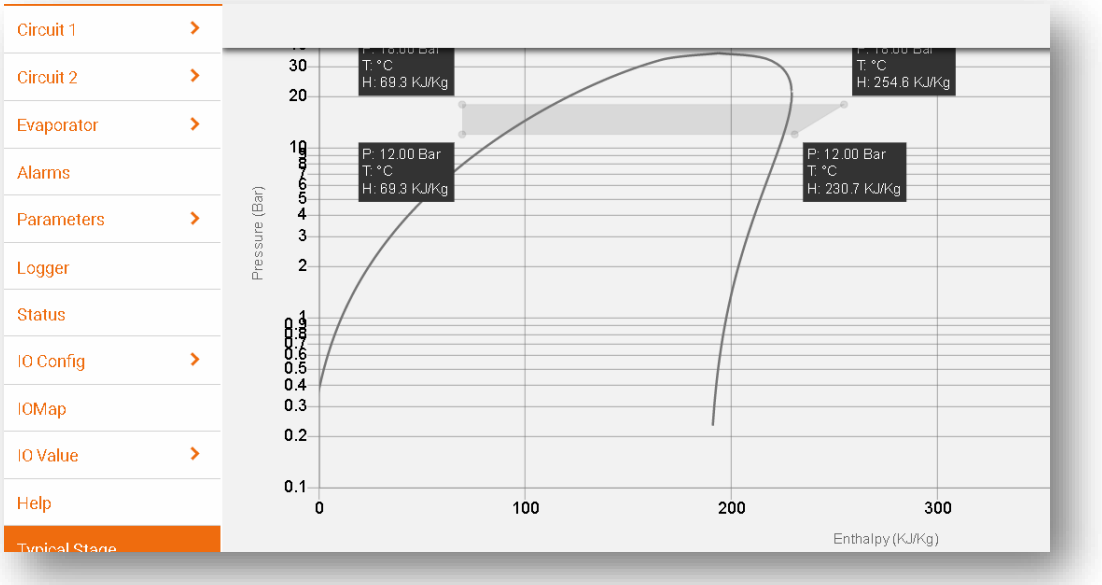



Behavior of a system as **Balanced Mode**

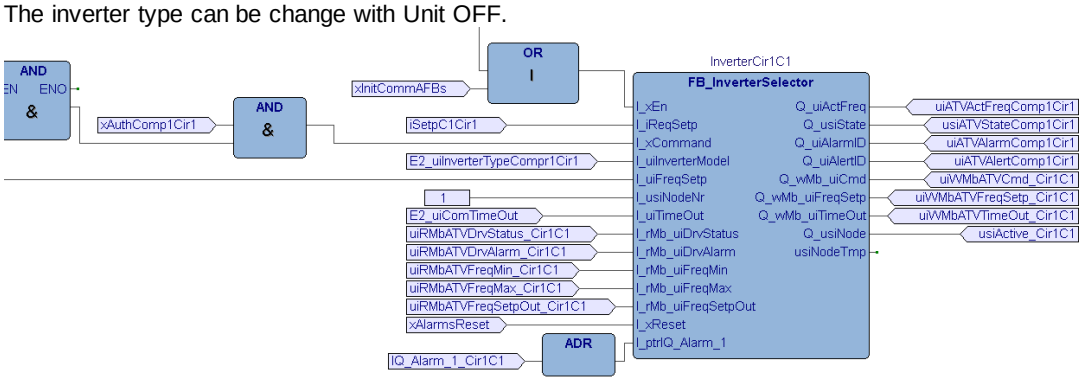


29. Added Pressure-Enthalpy diagram for circuit 1 and circuit 2.
To enable the P-H chart the follow variable shall be assigned to the IO configuration.

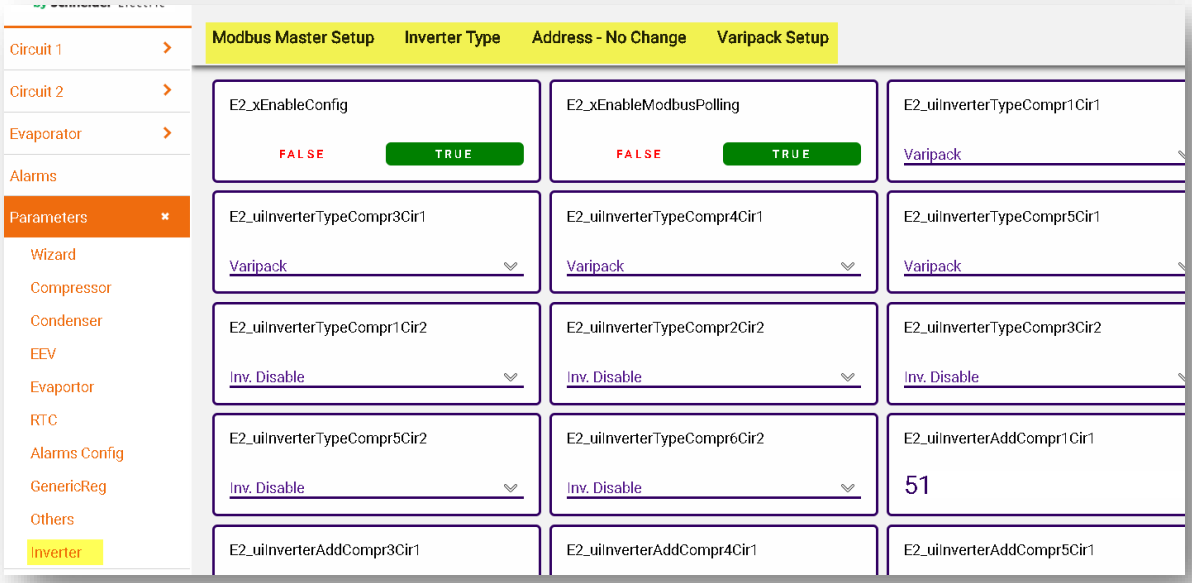
| | | | |
|---|---|---|---|
| iLowPressCir1 | Low Pressure | Text | Circuit 01 |
| iHighPressCir1 | High Pressure | Text | Circuit 01 |
| iEvapOutTempCir1 | Evaporator Out Temperature | Text | Circuit 01 |
| iCondOutTempCir1 | Condensing Out Temperature | Text | Circuit 01 |
| iDischTempCir1 | Discharge Temperature | Text | Circuit 01 |



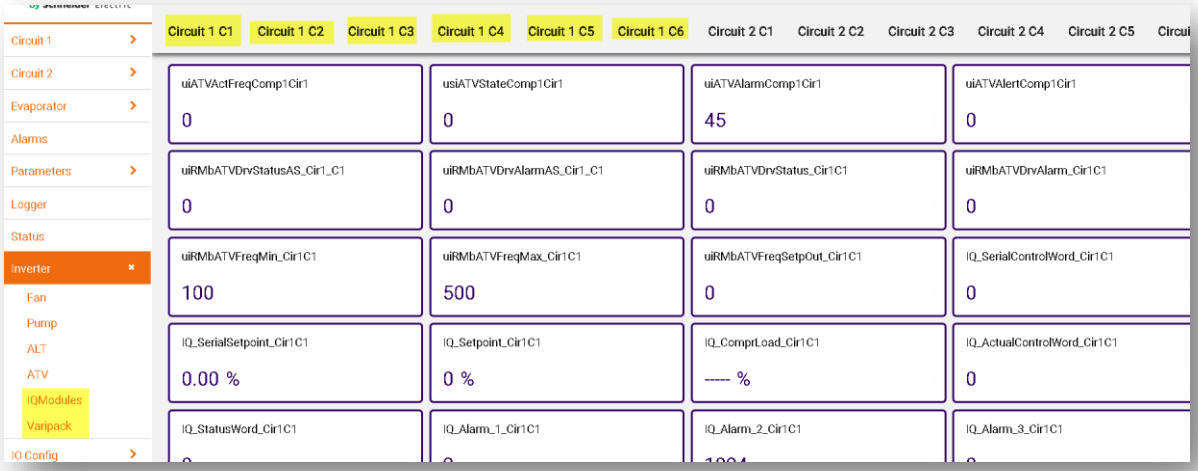

30. Added Varipack Integration:
New program will manage read and wrtite a to Varipack in IEC code in task Background.
Up to 12 Varipack (6 in circuit 1 and 6 for circuit 2) can be configured.
The register are configurable in the init program
The inverter type can be change with Unit OFF.



31. Added new webserver page to browse the inverter parameter
    Note: Varipack setting are send but inverter is not updating (probably a password has to be send in the init process)




32. Added new webserver page to browse the inverter status
    The inverter status is divide in page and, Compressor Inverter can be grouped with a subcategory (Circuit 1 C1 )



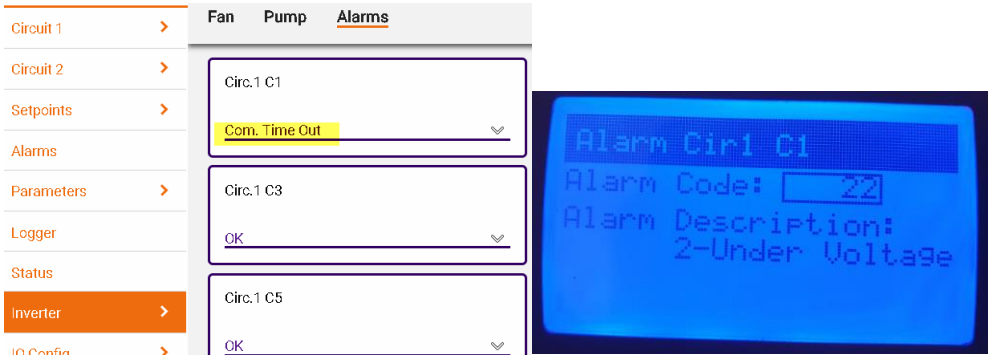
## 33. Alarm code normalization between **IQCMRC1** - **SE-i1** - **Varipack (VPK)**

```
CASE uiAlarm1 OF
  1:    AlrDescription:='Serial TimeOut'
  3:    AlrDescription:='Env.SSTL SDT L'
  4:    AlrDescription:='Env.SST L'
  5:    AlrDescription:='Env.SST L SDT H'
  6:    AlrDescription:='Env.SDT H'
  7:    AlrDescription:='Env.SST H SDT H'
  8:    AlrDescription:='Env.SST H'
  9:    AlrDescription:='Env.SST H SDT L'
 10:    AlrDescription:='Env.SDT L'
 11:    AlrDescription:='Env. Env T Out'
 12:    AlrDescription:='Env. Config'
 15:    AlrDescription:='Oil Lev Low'
 17:    AlrDescription:='32-Power Loss Stope'        // VPK31
 18:    AlrDescription:='21-Motor Phase Loss'        // VPK21
 19:    AlrDescription:='Motor Phase seq.'
 20:    AlrDescription:='Motor Temp. High'
 21:    AlrDescription:='1-Over Voltage'   // VPK1
 22:    AlrDescription:='2-Under Voltage'  // VPK2
 23:    AlrDescription:='3-Over Current'   // VPK3
 24:    AlrDescription:='4-Stack Fault Current'      // VPK4
 25:    AlrDescription:='5-StackOver Current'        // VPK5
 26:    AlrDescription:='6-Current Limit'   // VPK6
 27:    AlrDescription:='7-CMotor Stall'             // VPK7
 28:    AlrDescription:='8-Inverse Time'             // VPK8
 29:    AlrDescription:='9-Motor I2T'                // VPK9
 30:    AlrDescription:='10-Low Speed'               // VPK10
 31:    AlrDescription:='11-Heatsink Hi Temp'        // VPK11
 32:    AlrDescription:='12-Internal Hi Temp'        // VPK12
 33:    AlrDescription:='13-Motor Hi Temp'           // VPK13
 34:    AlrDescription:='14-Start Fail'              // VPK14
 35:    AlrDescription:='15-Brake Short'             // VPK15
 36:    AlrDescription:='16-Brake Resistor'          // VPK16
 37:    AlrDescription:='17-Brake Switch'  // VPK17
 38:    AlrDescription:='18-Local Control'  // VPK18
 39:    AlrDescription:='19-Coms Breack' // VPK19
 40:    AlrDescription:='20-Line Contactor'// VPK20
 41:    AlrDescription:='22-VDC Ripple'              // VPK22
 42:    AlrDescription:='23-Base MB Breack'          // VPK23
 43:    AlrDescription:='25-PMCK Speed' // VPK25
 44:    AlrDescription:='26-OverSpeed'               // VPK26
 45:    AlrDescription:='27-STO Active'               // VPK27
 46:    AlrDescription:='28-FBK Missing'   // VPK28
 47:    AlrDescription:='29-Int. Fan Fail'           // VPK29
 48:    AlrDescription:='30-Current Sensor'          // VPK30
 49:    AlrDescription:='Config. No File'
 50:    AlrDescription:='Config. CRC Er.'
 52:    AlrDescription:='Config. Red Only'
 54:    AlrDescription:='HW: 3.3V'
 55:    AlrDescription:='HW: 5V'
 62:    AlrDescription:='Sensor Motor Temp'
 68:    AlrDescription:='Suct Press Low'
 69:    AlrDescription:='Disch Press Hi'
 70:    AlrDescription:='24-HW: 24V'                 // VPK24
 78:    AlrDescription:='Disch. Temp. HI'
 84:    AlrDescription:='Motor Temp. coolDw'
 85:    AlrDescription:='Sensor Disch Temp'
 86:    AlrDescription:='Sensor AUX Temp'
 90:    AlrDescription:='Hi Press Switch'
 94:    AlrDescription:='Sensor Suct P Low'
 95:    AlrDescription:='Sensor Suct P Hi'
 96:    AlrDescription:='Sensor Disch P Low'
 97:    AlrDescription:='Sensor Disch P Hi'
102:    AlrDescription:='Oil Inj no effect'
119:    AlrDescription:='Excide Fault/24 h'
120:    AlrDescription:='Excide Reset/24 h'
133:    AlrDescription:='Oil Flow Low'
134:    AlrDescription:='Oil Pres Low'
135:    AlrDescription:='Motor Freq Low'
136:    AlrDescription:='Motor Freq Hi'
137:    AlrDescription:='Oil Stop Valve'
145:    AlrDescription:='HW: 24V sens 1'
146:    AlrDescription:='HW: 24V sens 2'
150:    AlrDescription:='Sign.but no run'
152:    AlrDescription:='No sig. Comr On'
153:    AlrDescription:='Motor Curr. High'
159:    AlrDescription:='Undef. C. State.'
ELSE
        AlrDescription:='Undefined Alarm code';
```

```
END_CASE;
```

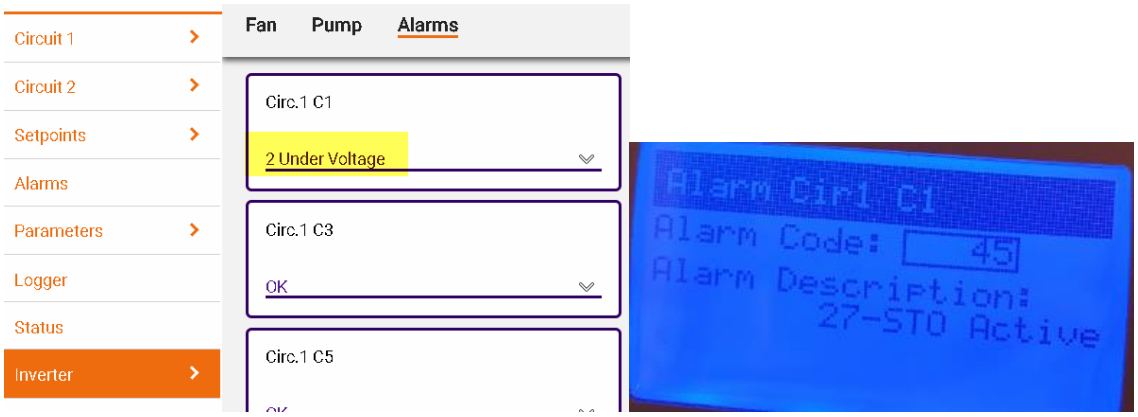
a. Varipack Alarm Test Under Voltage Alarm:


Loclal/remote HMI or webserver



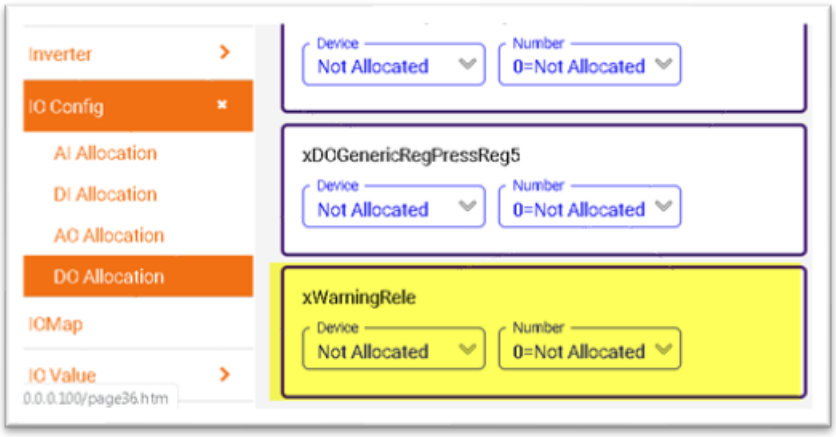

b. Varipack Alarm Test Under Voltage Alarm:


Loclal/remote HMI or webserver



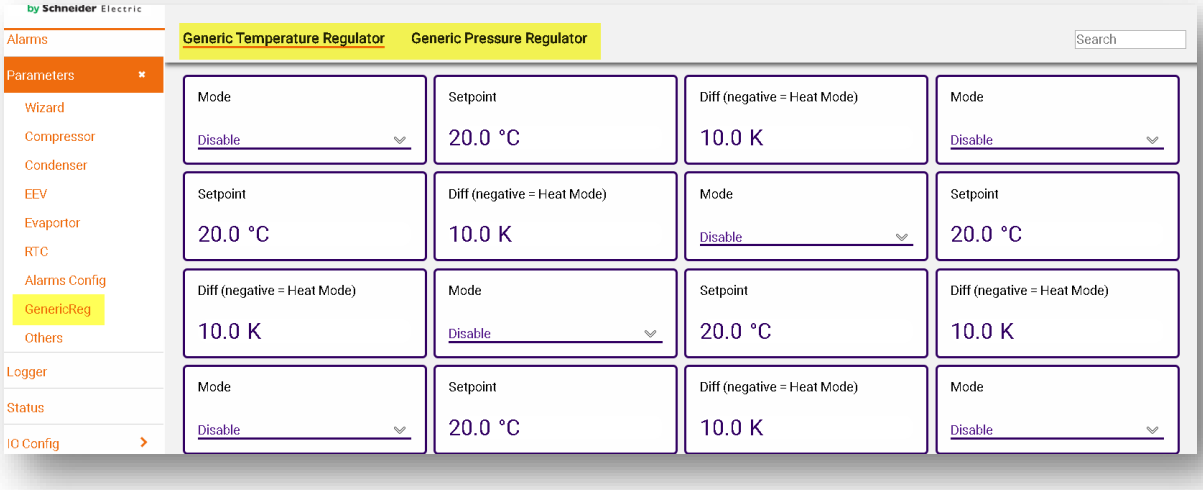
34. Added **keep alive** and **Node manger** for all the inverter to manage difference priority in read/ write message.

35. Added Warning relay DO active if any alarm out is active.

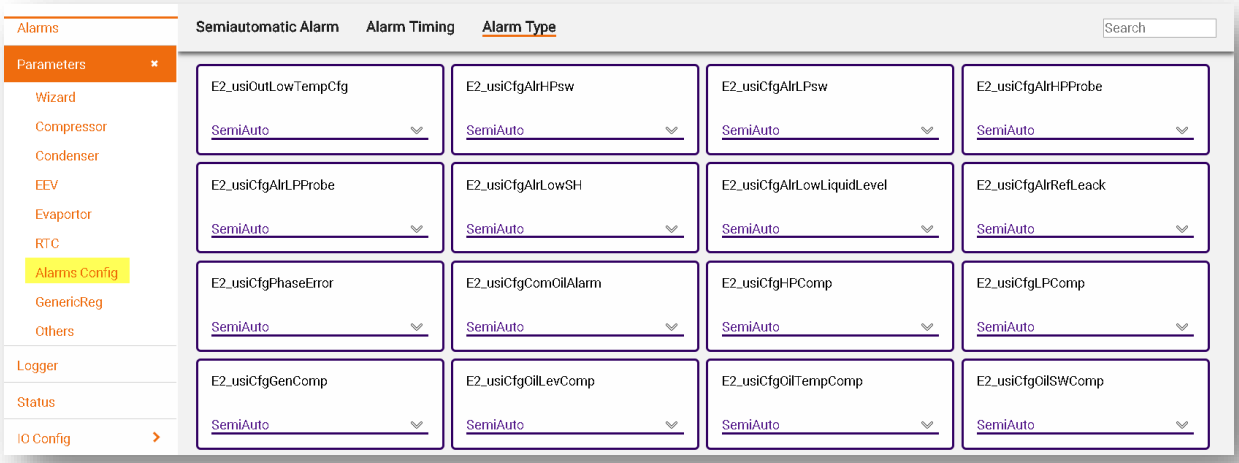



36. Added New option for alarm management
Active alarm and Resettable alarm has now different color

37. Added Generic Regulator 6+6 configurable for temperature and pressure probe
    Each Generic Regulator can be configure with a dedicated probe or can be connected to an existing probe.




38. Added Alarm Configuration Menù to setup alarm type and alarm delay.




Known Varipack issue:

- How to reset inverter ?
- How to change parameter via Modbus ?
- How to contro inverter via Modbus ?

## Release 2.07.00 12-02-2020

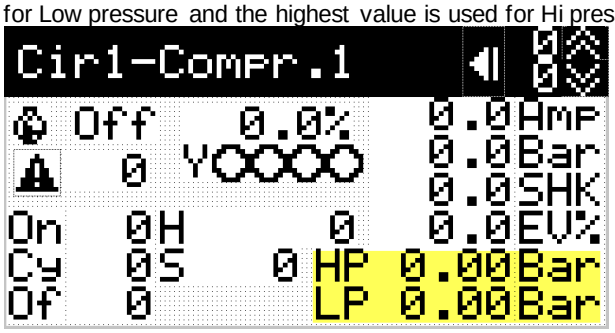
CHANGES:

- Added new configuration to manage the Model ASK 64xx

### 1.1 Configuration 11 ( 3 Screw HSK 64xx) – Compressor Rack / Inverter SE-I1

| Digital Input | Analog Input | Digital Output | Analog Output |
|---|---|---|---|
| Controller – | | | |
| DI1 ALARM THER. COMP1 | AI1 HIGH PRESSURE CIR 1 | DO1 COMP1 | AO1 INV COND FAN CIR1 |
| DI2 ALARM THER. COMP2 | AI2 LOW PRESSURE CIR 1 | DO2 COMP2 | AO2 |
| DI3 ALARM THER. COMP3 | AI3 | DO3 COMP3 | AO3 |
| DI4 | AI4 | DO4 | AO4 |
| DI5 ALARM HP. COMP1 | AI5 | DO5 COMP1 CR2 | AO5 |
| DI6 ALARM HP. COMP2 | AI6 | DO6 COMP1 CR1 | AO6 |
| DI7 ALARM HP. COMP3 | AI7 | DO7 COMP2 CR2 | |
| DI8 | AI8 | DO8 COMP2 CR1 | |
| DI9 | AI9 | DO9 COMP3 CR2 | |
| DI10 LIQUID LEVEL (DI) | AI10 | DO10 COMP3 CR1 | |
| DI11 COMMON OIL ALARM | AI11 HP SWITCH CIR.1 | DO11 | |
| DI12 ON OFF REMOTE | AI12 LP SWITCH CIR.1 | DO12 GENERAL ALARM | |

- Added new register for Alarm management optimization
- This versions has been tested test with new application HMI Touch rev 1.0
- Added New option to read HP LP value from IQ CM RC1 or SE-i1
  If local Probe Low Pressure and Hi pressure are not defined the lowest compressor value is used for Low pressure and the highest value is used for Hi pressure of the circuit.

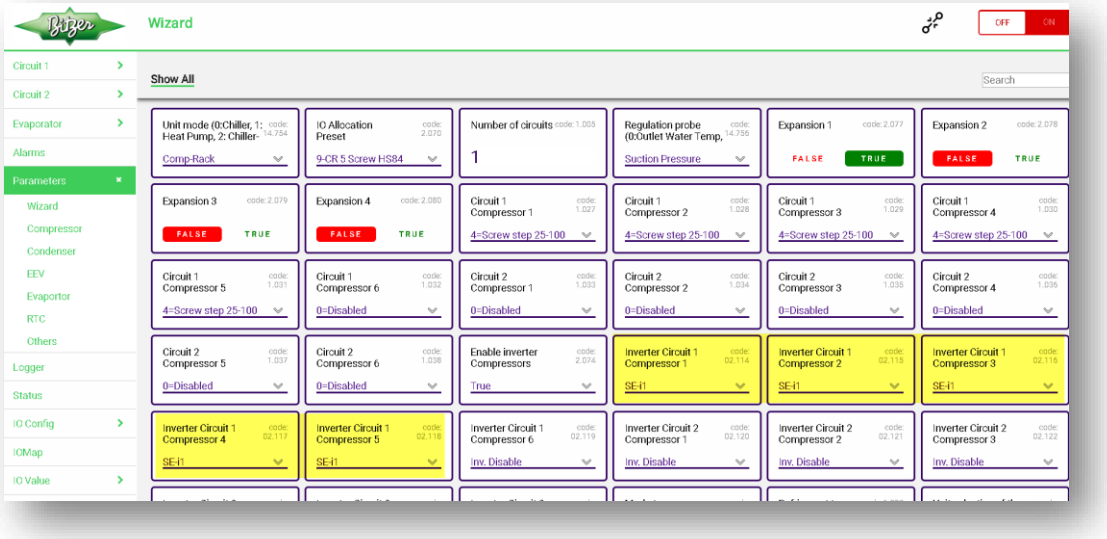


## Release 2.06.02  30-01-2020

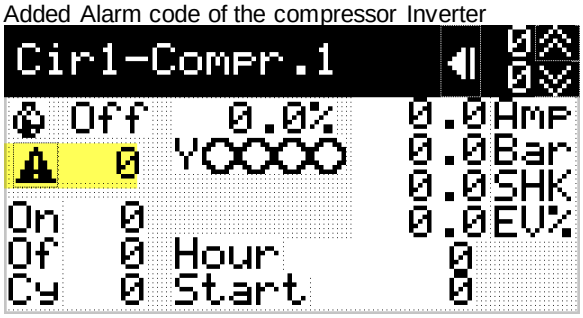
CHANGES:

- Added SE-i1 integration for the compressor C1 to C6
  the Modbus address of the devices SE-i1 Or CM RC 01 or CM SW 01 shall be set in as in the follow list:
  - C1: Modbuss Address 51
  - C2: Modbuss Address 52
  - C3: Modbuss Address 53
  - C4: Modbuss Address 54
  - C5: Modbuss Address 55
  - C6: Modbuss Address 56

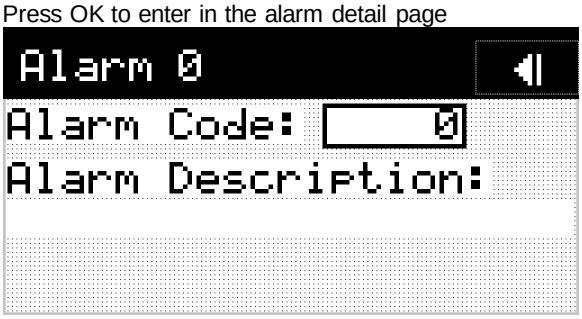
- Added Inverter selector in the wizard configuration page




Added Alarm code of the compressor Inverter



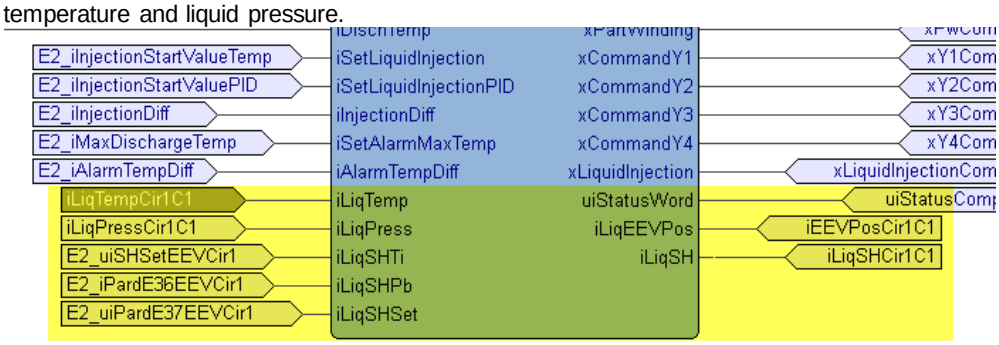

Press OK to enter in the alarm detail page



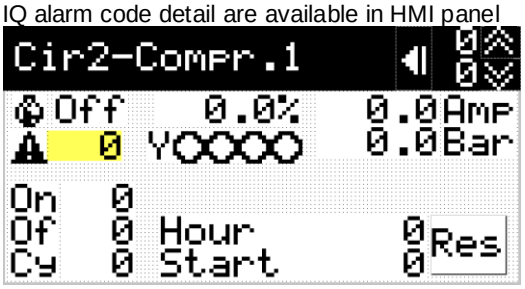
## Release 2.06.01 15-01-2020

CHANGES:

1. Added compressor liquid injection valve with SH control.
   The activation of the EEV is based on the compressor temperature;
   If the compressor temperature is over the setpoint the EEV will follow the SH calculated base on the liq temperature and liquid pressure.




2. Added IQ inverter communication to manage the follow feature:
   Each compressor can be managed as a IQ module
   IQ alarm detection, any IQ **fault** will stop the compressor.
   Send Control Word and setpoint
   IQ alarm code detail are available in HMI panel



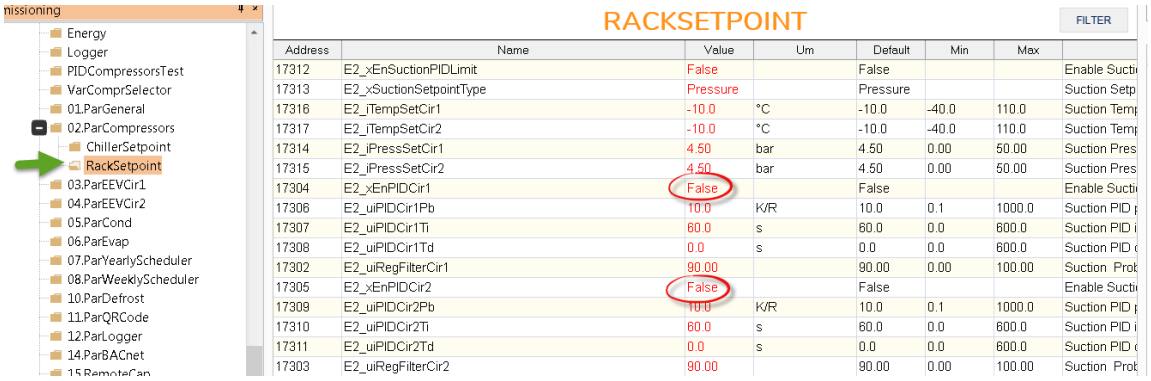

   Send reset command to the inverter
3. Minor Fix on the webserver
4. Added Configuration 10 Configuration 10 ( 5 Screw Compressors HS85 ) – Compressor Rack / IQ CM SW01

## Release 2.06 18-12-2019

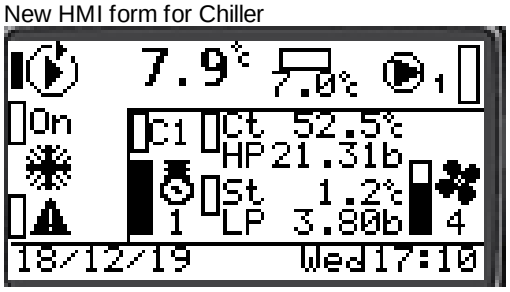
CHANGES: Added XVD custom gas refrigerant parameter

13=R448A
14=R427A
15=R450(N13)
16=R513A
17=R449A
18=R1234yf
19=R454B
20=R454C
21=R455A
22=R434A Missing Coefficient for XVD valve
23=R442A Missing Coefficient for XVD valve
24=R32

Added EEV for liquid injection and discharge temperature control.
Added configuration 7-8-9 (see user manual 1.9)
Validation of Compressor HS64 and HS 85
Added limitation option for suction temperature disable as default




New HMI form for Chiller




Added second circuit in case of Rack application

## Release 2.05 09-10-2019

CHANGES:

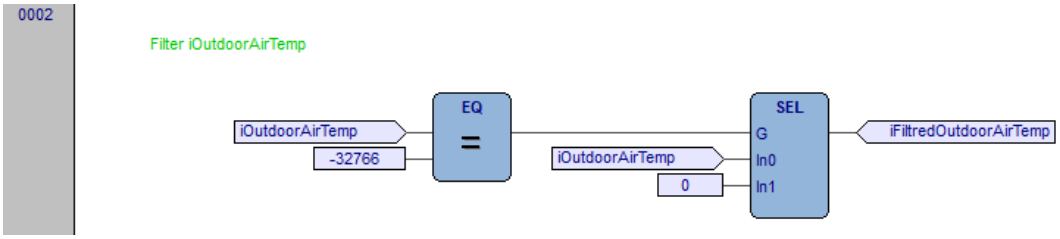
- Added Parameter Fan alarm type 05.042 to configure the Alarm Fan action
- New default for RS485 -1

BIOS PARAMETERS

+ Add — Remove

| # | Name | Default value | Description |
|---|---|---|---|
| 1 | Addr_RS485_OB1 | 1 | RS485-1 On Board address |
| 2 | Proto_RS485_OB1 | 3=Modbus/RTU | Select RS485-1 On Board protocol |
| 3 | DataBit_RS485_OB1 | 8 | RS485-1 On Board Data bit number |
| 4 | StopBit_RS485_OB1 | 1 | RS485-1 On Board stop bit number |
| 5 | Baud_RS485_OB1 | 0=9600 | RS485-1 On Board baud rate protocol |

- Added Parameter 02.088 configure Alarm Config for Compressor (Auto Manual SemiAuto)
- Removed default configuration
- Removed from wizard menu E2_usiProbeHP + E2_usiProbeLP now are specified in the IO configuration.
- Minor changed the menu General
- Add a new net in SR_FanCir1Cntrl + replace in SR_FanCirXCntrl iOutdoorTemp by iFiltredOutdoorTemp
  This to allow the fixed configuration without external air temperature.




- Manage up to 6 compressors per circuits with PID regulator.
- Remove Bacnet element: BAI_FullScallMinLP, BAI_FullScallMaxLP ,BAI_FullScallMinHP, BAI_FullScallMaxHP
- Delete menu ParExpert not used and replace from the wizard menù
- Add new inputs iAntifreezeWaterTemp, xAlarmLowLiquid, xAlarmRefrigerantLeak, (DO) xSHAlarm
- SH alarm will stop all the active compressors and after 3 times in a hour become manual.
- Added new refrigerants from13=R448A to 24=R32
- New HMI page for Compressor Rack


- New HMI page IO Cconfiguration

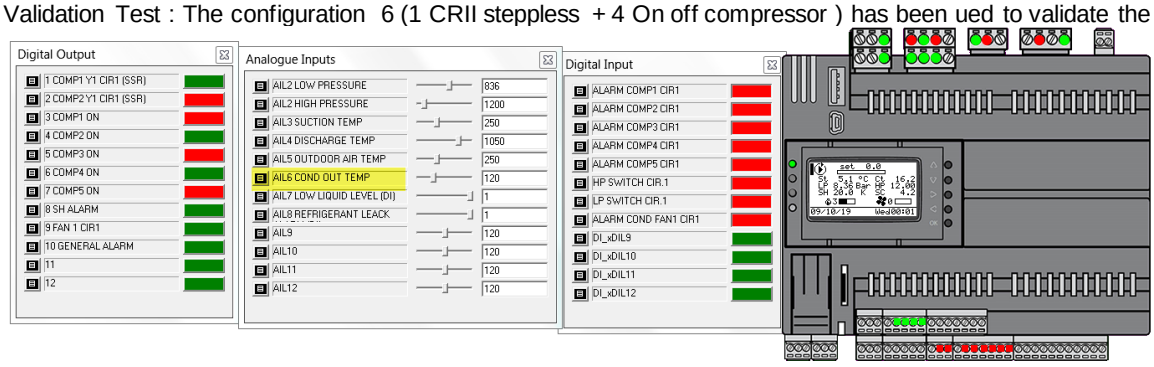


FIXED:

- Code review of CRII compressor, fixed valve rotation
- Add Alarm deactivated = -32766 + Function SensorStatus

- Correct FB_AppendLog for data loggin
- Change the default value of xLocalStartStop; if it is not allocated by the configurable IO is set to TRUE.
- Fixed IO Polarity of the Analog Input used as Digital input.

Validation Test : The configuration 6 (1 CRII steppless + 4 On off compressor ) has been ued to validate the version.




KNOWN ISSUES: Web server for Compressor Rack will be update in the next released;

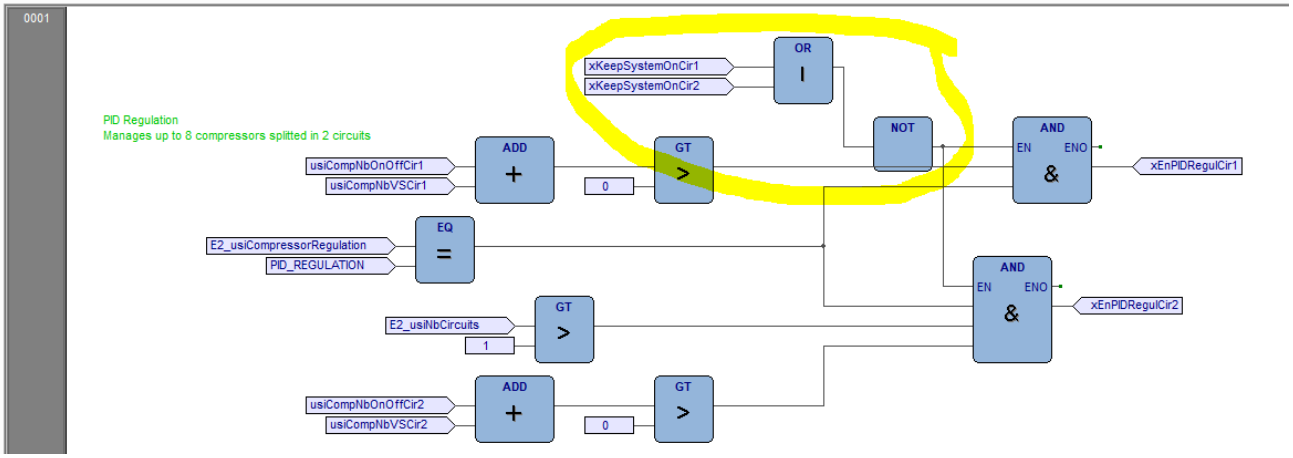
Missing new refr. In EEV.

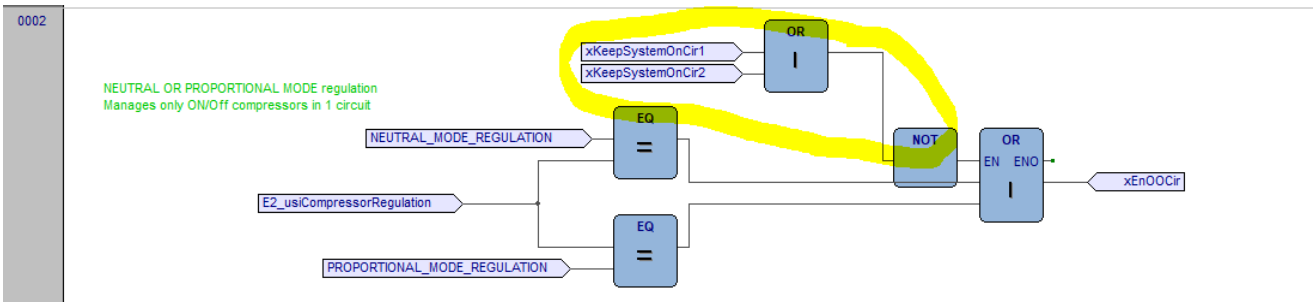
## Release 2.04 04-07-2019

CHANGES:

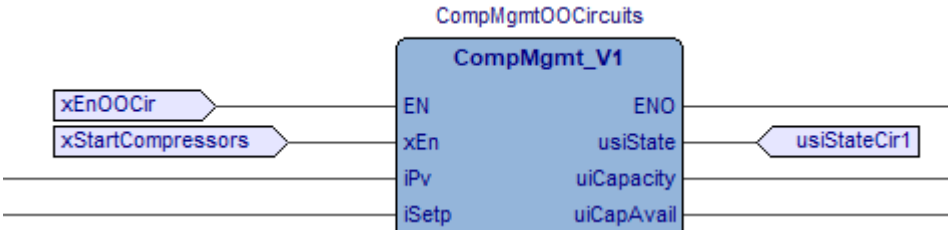
- Add Saving of IOMap in a CSV file in the program IO_Mng_Setup


- Remove GV xKeepOnSystem, replace by xKeepOnSystemCir1 and xKeepOnSystemCir2
- Remove the reboot in the wizard
- The regulation mode can be changed only when the unit (compressor included) are off. Cf program SR_CircuitCompCntrl

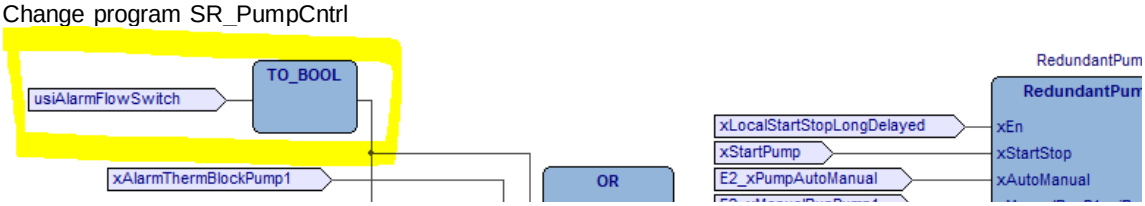




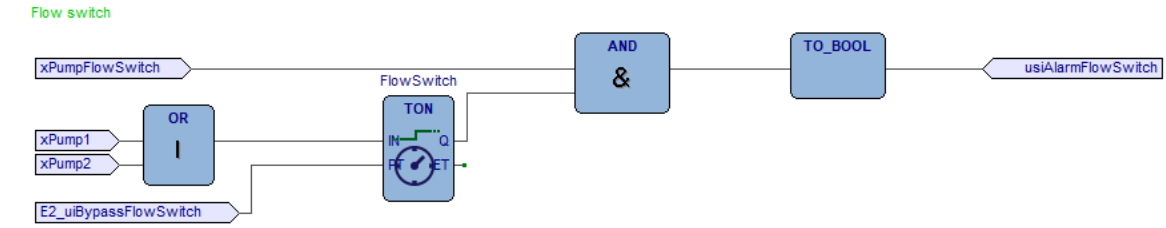

- In SR_CircuitCntrl,
  - change the input iPv (iOutletTemp) with iRegulProbe
  - change fb




- Add 2 new alarms: xAlarmPump1+ xAlarmPump2
- Replace xEnableModbusPump by E2_xEnablePumpMB
- Replace xEnableModbusFansCir1 and xEnableModbusFansCir2 by E2_xEnableModbusFanX
- Change program SR_PumpCntrl




- Add E2_uiBypassFlowSwitch to set the bypass of xFlowSwitch + Change the net




- Transfer the project on FSPlus
- Change the target (AVD6200)
- Add Configurable IO
  - IO_Mgmg_Init
  - IO_Mng_Runtime (Timed)
  - IO_Local_Update (Timed)
  - IO_Mng_Setup (Bkg): set default configuration register address
  - IO_Mng_E2Config (Bkg): load data from EEPROM to configuration structure
  - IO_ConfigurationManager (Bkg): allocate the IOs according to the chosen configuration
  - Add new menus linked to the configurable IO
  - IO_config
  - IO_Allocation
  - IO_Function
  - Add Saving of IOMap in a CSV file in the program IO_Mng_Setup
  - Remove programs: SR_Phy2Log, SR_Log2Phy
  - Add a new digital input **xAlarmFanGlobalCir1** which activate a global fan alarm
  - Add programs SR_ResetTrigger + SR_SetTrigger (to set/reset the triggers)
  - GV **xEnableExpansion** not used in the program
  - Modify SR_EEVCir1Cntrl and SR_EEVCir2Cntrl (add in these programs the driver data reading)

*How does the Configurable IO work?*

When **LoadIOConfigRemote** is set at TRUE from the menu IO_Status or at the BOOT (not the first BOOT)

| STEP | TRIGGER | DESCRIPTION | PROGRAMM |
|---|---|---|---|
| 1 | IO_Status.xLoadCfg | Init pointers with variables EEProm address | IO_Mng_E2Config |
| 2 | IO_Status.xAllocationUpdate | Allocate in a virtual IO Map matrix<br>Phy --> Log<br>Log --> Phy<br>According to the configuration set by the user IN COMMISSIONING (Menu IO_Allocation) | IO_Mng_Runtime |
| 3 | IO_Status.xConfigUpdate | Update the BIOS parameters of the Device according to the virtual matrix configuration | IO_Mng_Setup (FB_IOMng_Setup) |
| 4 | LoadIOConfigRemote | Save the IO Map in a CSV file | IO_Mng_Setup (FB_IOSaveMap) |

When the configuration is changed from the Wizard menu usiConfigIO_Old <> E2_usiConfigIO

| STEP | TRIGGER | DESCRIPTION | PROGRAMM |
|---|---|---|---|
| 1 | IO_Status.xInitPointer | Init pointers with variables EEProm address | IO_Mng_E2Config |
| 2 | usiConfigIO_Old <> E2_usiConfigIO AND NOT (IO_Status.xInitPointer) | Set automatically a configuration MAP | IO_ConfigurationManager |
| 3 | IO_Status.xAllocationUpdated | Allocate in a virtual IO Map matrix<br>Phy --> Log<br>Log --> Phy<br>According to the IO Map selected | IO_Mng_Runtime |
| 4 | IO_Status.xConfigUpdate | Update the BIOS parameters of the Device according to the virtual matrix configuration | IO_Mng_Setup (FB_IOMng_Setup) |
| 5 | LoadIOConfigRemote | Save the IO Map in a CSV file | IO_Mng_Setup (FB_IOSaveMap) |

- Add FB_ReadEEVDriverCir1 + FB_ReadEEVDriverCir2

KNOWN ISSUES:

- FB CompMgmt should manage 8 compressors in the same circuit
- ~~Check the default value of each variables (Set default configuration)~~
- No starting time available for Bitzer stepless
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- Thermal power calculation: add subset of parameter to manage different compressor
- Disable page Energy Menu Description if COP is not enabled
- **Dynamic configuration of the frequency for the CRII compressor**
- ~~Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)~~
- Add keep alive function block
- Icon optimum start active
- When the scheduler is set, add on the Homepage the scheduler status
- Add a web page to set the dynamic IO allocation
- To evaluate if we add an alert for a wrong allocation setting
- **Remove the program SR_Init**
- **Alarms**

FIXED:

- In SR_CircuitCompCntrl, exchange inputs EN/xEN in FB CompMgmt

- Digital Scroll compressor: modify the pulsing valve exit (xY1comp1Cir1 and not xComp1Cir1) + default value for EEPROM parameters
- Change configuration menu: correct the list of compressors ~~On Off **2** step, On Off **3** step, On Off **4**~~ → On Off **1** step, On Off **2** step, On Off **3** step
- Modify the separator in Logger files (";" end not ",")

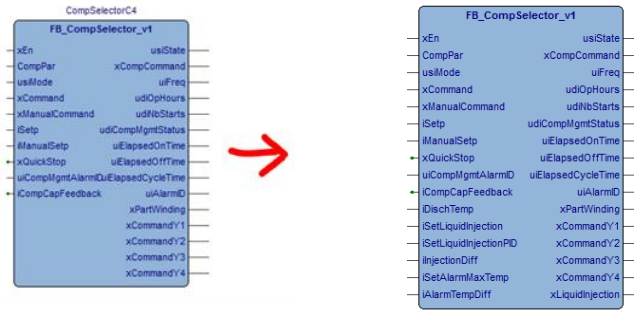
## Release 2.00 19-11-2018

CHANGES:

Nb: Suggested E2_usiModeType: =0;

- Update TM171VEV Firmware
- Add dE14, dE15, dE25, dE26, dE27, dE28, dE29, dE36, dE55, dE50, dE66, dE54, dE37, dE38
- Change EEV for the last release
- Remove FB_CompMgmtStatusDecoder, FB_CompMngtAlertDecoder, FB_CompMngtAlarmDecoder, FB_OnOffAlarmDecode, FB_rSpAutomatisation,FB
- Remove OptiStartScheduler
- Remove FB_ EvapPressCntrl because EvapPressCntrl in the library
- Remove FB_ FloatingWaterTempSet because FloatingWaterTempSet in the library
- Remove FB_ HPDefrostAndRevValve because HPDefrostAndRevValveis in the library
- Remove FB_CircuitMgmt because CircuitMgmt is in the library
- Update library Display.
- Update Regul and Control.plclib with the last release 1.1.1
- Update Application.plclib with the last release 1.2
- Change FB_CompSelector
    - 6 new inputs: To manage Temperature alarm (*iAlarmTempDiff* + *iSetAlarmMaxTemp*) and to manage liquid injection (*iSetLiquidInjection* + *iSetLiquidInjectionPID* + *iInjectionDiff* ) depending on the value of iDischTemp
    - 1 outputs: To enable liquid injection (*xLiquidInjection*)
    - If Temperature alarm is enabled → new bit (bit 4) in uiAlarmID linked to this alarm

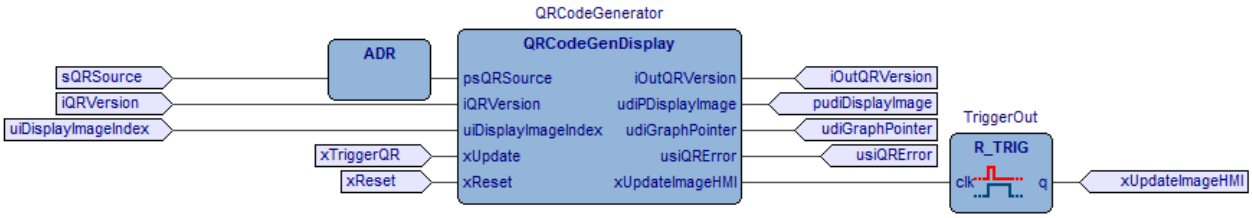
**Previous**



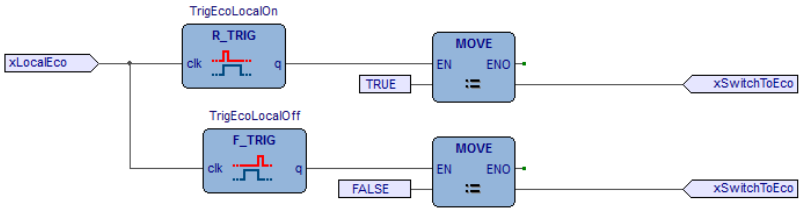

- Add new IOs Configuration (config 5), 1 circuit - 2 Digital Scroll Compressor
- Add input iDigitalScrollPulsePeriod to the FB FB_LoadCompIn **(*Default value of Period_Pulse_DigitalScroll need to be fixed*)**
- Change enumeration compressor CRII (BITZER CRII start at 11, 10= DIGITAL SCROLL)

| Compressor | ID |
|---|---|
| COMP_DISABLED | 0 |
| COMP_ON_OFF | 1 |
| VS_COMP | 2 |
| BITZER_SCREW_STEPLESS_25TO100 | 3 |
| BITZER_SCREW_STEP_25TO100 | 4 |
| BITZER_SCREW_STEPLESS_50TO100 | 5 |
| BITZER_SCREW_STEP_50TO100 | 6 |
| ONOFF_1STEP | 7 |
| ONOFF_2STEP | 8 |
| ONOFF_3STEP | 9 |
| **DIGITAL_SCROLL** | **10 (new)** |
| **BITZER_CRII** | **11 (modified)** |
| **BITZER_ECOLINE4_STEP** | **12 (modified)** |
| **BITZER_ECOLINE4_STEPLESS** | **13 (modified)** |
| **BITZER_ECOLINE6_STEP** | **14 (modified)** |
| **BITZER_ECOLINE6_STEPLESS** | **15 (modified)** |
| **BITZER_ECOLINE8_STEP** | **16 (modified)** |
| **BITZER_ECOLINE8_STEPLESS** | **17 (modified)** |

-
- Add digital scroll compressor in the FB **GenericSliderCompCntrl**
- Change Homepage (on User Interface)
- Add E2_usiUnitOperationMode, it uses everywhere in the code instead of: xSwitchToEco
- Remove network 004 (Manage Eco Without a scheduler from SR_WaterSetAndScheduler)
- Update BACnet library
- xSwitchToEco set as a status variable
- Change BACnet code
- Icon comfort
- Add sysbridge
  - Add library sysbridge extension
- Add a new configuration (2 circuits, 2 compressors on/off per circuit, no expansion)
- Manage the sharing of fans between two circuits
  - Add 2 status variable uiFanControlSignalC1 and uiFanControlSignalC2 instead of uiFanControlSignal
  - Add E2_xSharedFans (add this parameter in Wizard)
  - Add 2 nets (in SR_FanCir2Cntrl to assign uiFanControlSignalC2→ uiFanControlSignal and SR_FanCir1Cntrl to select the max between uiFanControlSignalC2 and uiFanControlSignalC1 if E2_xSharedFans = TRUE)
- Add Low pressure in BACnet Variables
- Restrict access to "Reset" button on pages Fan, Defrost, Pumps
- Add menu Expert on Configuration
- Add in Logger: Heating resistor, Reversing valve status
- Add E2_usiDefrostProbe to select the defrost probe (0: Outdoor Air Temp, 1: Sat Suction Temp, 2: Sat Evap temp)
- Add element of enum
- Manage suction
  - Add regulation probe selection in the Wizard menu
  - Add In SR_CircuitCompCntrl a net which convert the suction pressure in temperature
  - Add Regulation probe selection (inlet water, outlet water, suction probe): E2_usiRegulProbe, usiRegulProbe
- Add pop-up message "Access Denied" when the access to the page PasswordEdit is not allowed
- Add the password before the access to the wizard page. If the level access is <3, access not allowed → return to the Flash page + Pop-up message "Access Denied"
- In HMI side, type of compressor E2_uiCompModelCompXCirX can't no more be changed from the menu par General, they are only visible but not selectable.
- Add new network (position 2) in SR_SytstemStatus to force the value of the change mode
- Change wizard menu in Commissioning
- Add in HMI wizard page.
- Add parameter in SR_Wizard to set the type of machine: usiUnitModel
- Add in in SR_Wizard global variable xEnHeatCoolSwitching to enable the switching only if the unit is a Chiller-HeatPump
- Add **SR_Wizard** in Init Tasks
- Sampling time option add to index.page
- Add E2_xEnDIStandby in parGeneral
- Add xRemoteStandby, xDIStandby and change xLocalStandby in xStandby
- Remove request **switch off?** instead of it put a pop-up page which request if stand-by mode or off is request.
- Change web page: add pages Defrost, Optimum start
- Move xHPLimiterActiveCir1, xLPLimiterActiveCir1, xHPLimiterActiveCir2, xLPLimiterActiveCir2 in alerts.
- Icon HEAT/COOL blink until reversing valve is set at TRUE/FALSE
- Remove from status variables: *udiGraphPointer2, pudiDisplayImage2, xUpdateImageHMI2, uiDisplayImageIndex, iDisplayImageIndex, xUpdateImageHMI, iCountHMIClients, pudiDisplayImage, xUpdateImageHMIREM, uiFree21, uiFree22, uiFree23*
- QRCode not manage in application but in user interface, change display code (add management of QRString)



- Remove icon PID Limiter from the main page → Add Limiter in the wiring alarms list
- In SR_CircuitCompCntrl FB_CircuitMgmt AND PIDAdvanced FB are enable by xEn and xEnPIDRegulCir1 + xEnPIDRegulCir2 (no anymore by the NB of Variables speed compressor usiNbVSCir1 or usiNbVSCir2)
- Add status variable xNbFanActive for hmi
- Add E2_iWaterSetEcoOffsetCool and E2_iWaterSetEcoOffsetHeat
- Add management of Local Eco in SR_WaterSetAndScheduler
- Add as BACnet variables: BAV_WaterSetEcoOffsetCool, BAV_WaterSetEcoOffsetHeat, BAV_WaterSetHeatMode, BAV_WaterSetCoolMode

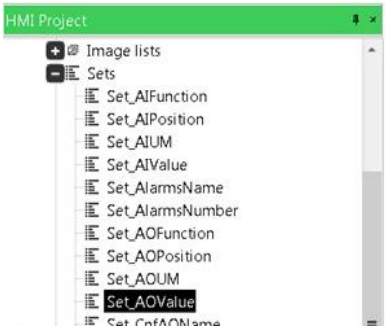


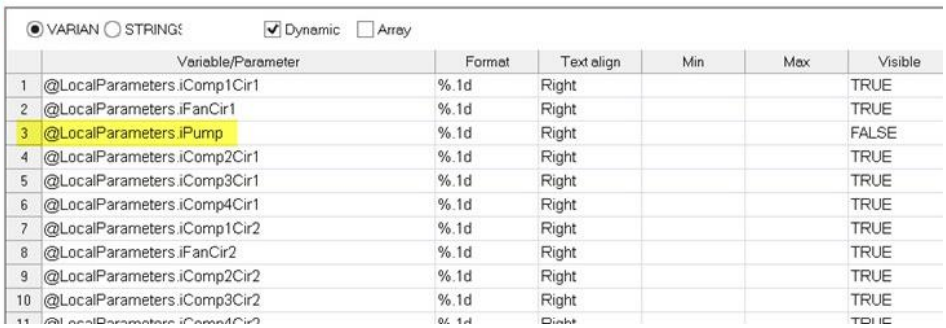

KNOW ISSUES:

- FB CompMgmt should managed 8 compressors in the same circuit
- Check the default value of each variables (Set default configuration)
- No starting time available for Bitzer stepless
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- Thermal power calculation: add subset of parameter to manage different compressor
- Disable page Energy Menu Description if COP is not enabled
- **Dynamic configuration of the frequency for the CRII compressor**
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block
- Icon optimum start active
- When the scheduler is set, add on the Homepage the scheduler status

FIXED:

- Modify in SR_unit value of the constant CONFIG_3
- Change in Defrost page, the address of defrost cmd
- In Homepage change GETPARAM function in OnTimerScript, for a USINT variable usiDefrostStatus, use tyUINT instead of tyUSINT
- Page DefrostCir1 and DefrostCir2 add call on the button defrost
- HMI page compressors fixed **reset hours button** for comp 2 in local procedure OnResetCp2Hours
- SR_FanCir2Cntrl net 0002 replace uiFanControlSignal→ uiFanCondControlSignal





VARIAN STRINGS Dynamic Array

| | Variable/Parameter | Format | Text align | Min | Max | Visible |
|---|---|---|---|---|---|---|
| 1 | @LocalParameters.iComp1Cir1 | %.1d | Right | | | TRUE |
| 2 | @LocalParameters.iFanCir1 | %.1d | Right | | | TRUE |
| 3 | @LocalParameters.iPump | %.1d | Right | | | FALSE |
| 4 | @LocalParameters.iComp2Cir1 | %.1d | Right | | | TRUE |
| 5 | @LocalParameters.iComp3Cir1 | %.1d | Right | | | TRUE |
| 6 | @LocalParameters.iComp4Cir1 | %.1d | Right | | | TRUE |
| 7 | @LocalParameters.iComp1Cir2 | %.1d | Right | | | TRUE |
| 8 | @LocalParameters.iFanCir2 | %.1d | Right | | | TRUE |
| 9 | @LocalParameters.iComp2Cir2 | %.1d | Right | | | TRUE |
| 10 | @LocalParameters.iComp3Cir2 | %.1d | Right | | | TRUE |

## Release 1.07 23-07-2018

CHANGES:

- Alarms reorganized (it starts at the 12 000 for alarms, it starts at the address 12300 for wiring alarms)
- Add the new parameters in the menu
- Add the last updates of FB HPDefrostAndrRevValve, QRCodeGenerator
- Add SR_SystemStatus

HMI Project
- Add new enum (GenModeTypeEnum)
- Update ParGen menus
- Add ParDefrost
- Update Set_ParFan (@Chiller.E2_iEvapTempOffsetAtMax, @Chiller.E2_iEvapTempMin, @Chiller.E2_iEvapTempMax, @Chiller.E2_iEvapTempOffsetAtMin doesn't exist)
- Change address of the constant: ADDR_CP1CIR1_MOT_AL, ADDR_CP1CIR2_MOT_AL, ADDR_CP1CIR1_OIL_AL, ADDR_CP1CIR2_OIL_AL, ADDR_NBONOFFCIR1, ADDR_NBONOFFCIR2, ADDR_NBVSCIR1, ADDR_NBVSCIR2

KNOW ISSUES:

- FB CompMgmt should managed 8 compressors in the same circuit
- Check the default value of each variables (Set default configuration)
- Manage Alarms
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- Manage pump suction pressure probe

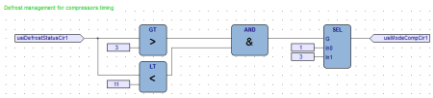
Set iCurrentWaterTempSet as iSetpoint
Set iChilledWaterTemp as RegulationProbe
- Thermal power calculation: add subset of parameter to manage different compressor
- Disable page Energy Menu Description if COP is not enabled
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block

## Release 1.07 12-06-2018 (Chiller-Heat Pump)

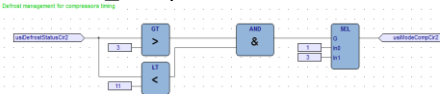
CHANGES:

- Add Programs SR_EEVCir1Cntrl and SR_EEVCir2Cntrl
- Changed: iHotWaterTemp → iInletWaterTemp and iChilledWaterTemp→ iOutletWaterTemp
- In SR_Alarms, net 00037, remove uiAlertIDPIDPump
- Updated BACnet Library
- Add the program SR_DefrostAndRevValves
- Add parameters E2_uiDefrostDelay1, E2_uiDefrostDelay2, E2_uiDefrostCompValveTime, E2_uiDefrostValveCompTime, E2_uiDefrostCpCapCir1, E2_uiDefrostCpCapCir2
- SR_CircuitCompCntrl

- Add in the FB_CompSelector the input usiMode + iManualSetp
- Remove from the FB_LoadCompIn the input usiMode + iManualSetp
- Remove usiModeComp1Cir1, usiModeComp2Cir1, usiModeComp3Cir1, usiModeComp1Cir2, usiModeComp2Cir2, usiModeComp3Cir2
- Add in SR_CompCir1Cntrl



- Add in SR_CompCir2Cntrl



- In SR_COPCALCULATION (Probe errors disable COP Calculation)

- In SR_COPCALCULATION (COP Calculation)
  Change rThermalPower input, rReset input, rThermalEnergy input
- **ADD GLOBAL Vars**: xDefrostStartCir1, xDefrostStartCir2, iFanCalcEvapTempCir1, iFanCalcEvapTempCir2
- Delete in SR_EEVCir1Cntrl iLocalTEvap1
- **Add status variable**: iFanEvapTempSetpCir1, iFanEvapTempSetpCir2
- iCurrentWaterTempSet replace E2_iWaterTempSetPoint (FB_AppendLog)
- ADD in SR_Phy2Log

```
IF xReversingValveCir1 THEN        (* heat mode *)
                iCondOutTempCir1          : = iRMbTM171VEVPb4Cir1;
        ELSE                                                    (* cool mode *)
                iCondOutTempCir1          : = AI_iAIL4;
        END_IF;
```

- Change SR_Phy2log and SR_Log2Phy

KNOW ISSUES:

- FB CompMgmt should managed 8 compressors in the same circuit
- Check the default value of each variables (Set default configuration)
- Manage Alarms
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- split initialization of IOs PLC and expansions
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- Manage pump suction pressure probe

Set iCurrentWaterTempSet as iSetpoint
Set iChilledWaterTemp as RegulationProbe

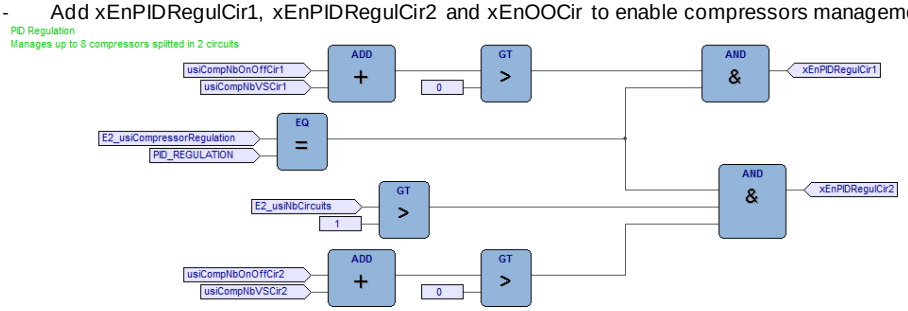
- Thermal power calculation: add subset of parameter to manage different compressor
- Disable page Energy Menu Description if COP is not enabled
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block

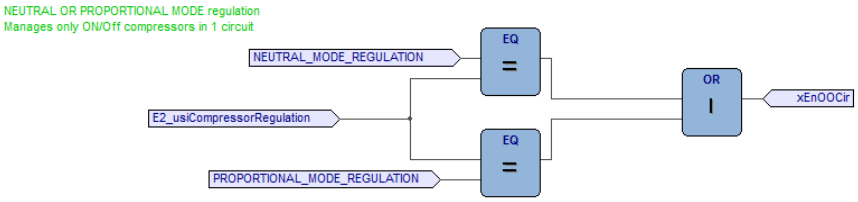
## Release 1.06 06-06-2018

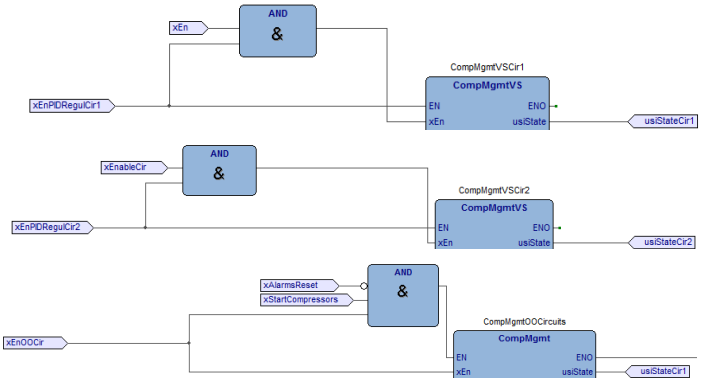
CHANGES:

- Add FB Pressure Limiter in the program SR_CircuitCompCntrl
- Add Limiter in the user manual
- Change the icon PID (HMI project, page circuit 1 and circuit 2). Replace it by an animation which displays if the PID is TUNE, LIMITED by HP or LP.


- Add in the logger file: PID limiter % Cir1, PID limiter % Cir2, LP limits PID Cir1, LP limits PID Cir2, HP limits PID Cir1, HP limits PID Cir2
- Add in the menu Param general: LP limiter diff, HP limiter diff, Enable press Limiter
- Modify QRCode with a string
- Add parameter do disable/enable web - FTP (FOR CYBERSECURITY)
- Logger file header is the same for all configuration (remove the input iconfig from FB AppendData)
- Add E2_usiCompressorRegulation (values: PID, Neutral Mode, Proportional Mode)
- Add xEnPIDRegulCir1, xEnPIDRegulCir2 and xEnOOCir to enable compressors management circuit FB




- FB CompMgmt can managed 4 compressors ON/OFF

FIXED:

- Alarms displayed on the HMI project

KNOWN ISSUES:

- FB CompMgmt should managed 8 compressors in the same circuit
- Check the default value of each variables (Set default configuration)
- Manage Alarms

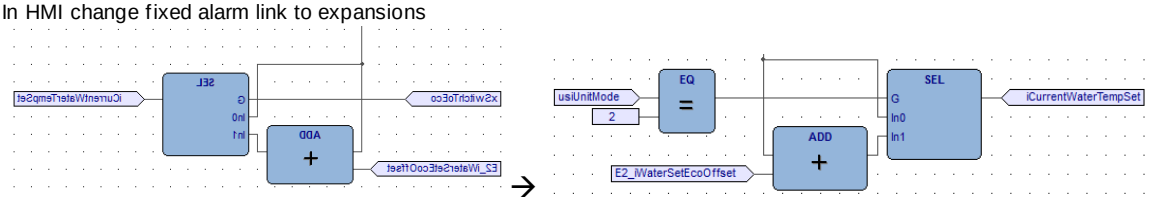
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- split initialization of IOs PLC and expansions
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- Manage pump suction pressure probe

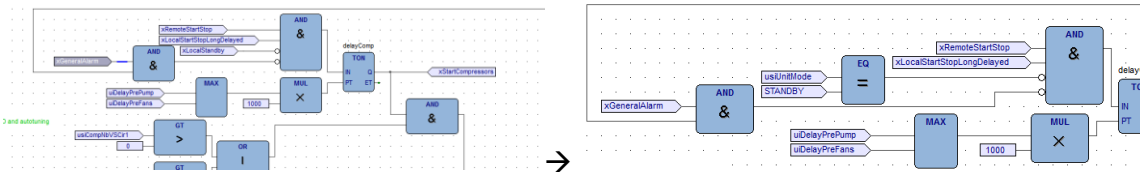
Set iCurrentWaterTempSet as iSetpoint
Set iChilledWaterTemp as RegulationProbe

- Thermal power calculation: add subset of parameter to manage different compressor
- Disable page Energy Menu Description if COP is not enabled
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block

## Release 1.05 29-05-2018

FIXED:

- Fixed communication with Nodes and expansions not configured
- In HMI change fixed alarm link to expansions
- 

- 

- 

| # | Value | Description |
|---|---|---|
| 1 | 0 | OFF |
| 2 | 1 | STANDBY |
| 3 | 2 | ECO |
| 4 | 3 | COMFORT |
| 5 | 4 | BACNET_OFF |
| 6 | 5 | SCHEDULER_OFF |

CHANGES:

- xSwitchToEco set as global variable (previously a local variable)
- Add E2_RemoteStartStop, xRemoteStartStop (not an input for all configuration → Only xLocalStartStop assigned as an input
- Add in menu General usiUnitMode and xPriorityActive
- Add a new Param menu 9. ParBACnet
- Manage Operating mode via an EEPROM Parametes and BACnet Multistate Value
  - OFF, STANDBY, ECO and ON are managed
  - On HMI Eco Mode, Standby Mode are now added as icons
  - Standby mode is now managed by the chiller application.
- Add menu BACnet in submenu Expert
- Add on user interface Machine Status, BACnet Status, Economy comfort
- Add basic BACnet integration (setpoint, onoff scheduler)

KNOWN ISSUES:

- Check the default value of each variables (Set default configuration)
- Manage Alarms
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- split initialization of IOs PLC and expansions
- Add parameter do disable/enable web - FTP (FOR CYBERSECURITY)

Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)

- Manage pump suction pressure probe

Set iCurrentWaterTempSet as iSetpoint

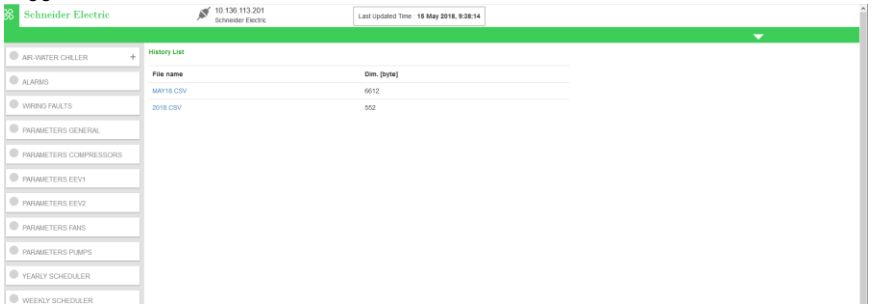
Set iChilledWaterTemp as RegulationProbe

- Thermal power calculation: add subset of parameter to manage different compressor
- Modify QRCode with a string
- Disable page Energy Menu Description if COP is not enabled
- Validate CMP Management OOPCircuit (8 compressor in 1 circuitt
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block

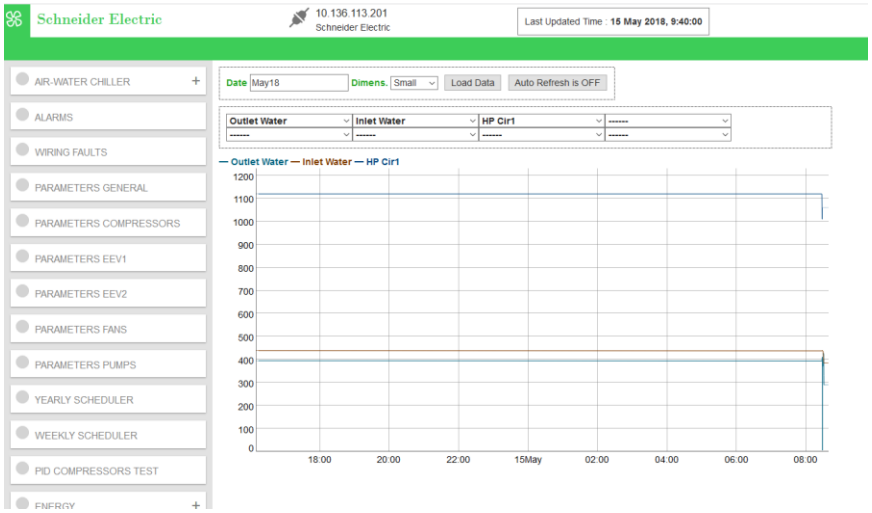
## Release 1.04 13-04-2018

CHANGES:

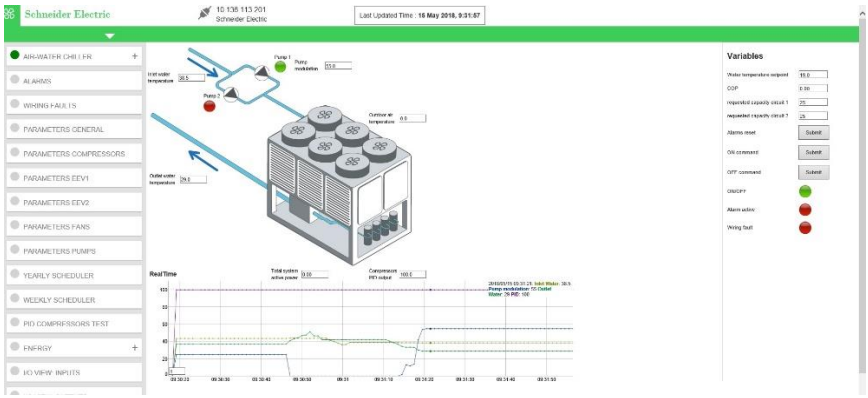
- Update the HMI project, and in particularly the name of the variable displayed on the PLC + the menu
- Update Web Server.
- Red LED Signal: when is on → at least one alarm active, when is flashing → at least one re-settable alarm and no alarm active
- In logger status variable LoggerError indicates the state of logger FB instead of the red led
  - Add Logger menu in HMI project + Application
  - Logger file menu




  - Logger menu




  - Add a real-time graph plot in page web index




Known Issues:

- Check the default value of each variables (Set default configuration)
- Manage Alarms
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- split initialization of IOs PLC and expansions
- Add parameter do disable/enable web - FTP (FOR CYBERSECURITY)

Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a paramater)

- Manage pump suction pressure probe

Set iCurrentWaterTempSet as iSetpoint

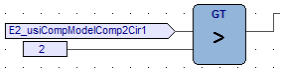
Set iChilledWaterTemp as RegulationProbe

- Thermal power calculation: add subset of parameter to manage different compressor
- Modify QRCode with a string
- Disable page Energy Menu Description if COP is not enabled
- Validate CMP Management OOPCircuit (8 compressor in 1 circuit
- Add basic Bacnet integration (setpoint, onoff scheduler)
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)
- Add keep alive function block
- Add on user interface Machine Status, BACnet Status, Economy comfort

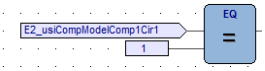
# Release 1.03 12-04-2018

CHANGES:

- Add a new compressor (Generic Compressor slide FB can manage Bitzer compressor with CRII system, step + stepless)
- iHys input is added in **FB_CompCntrlGenericSlider**
- Remove Capacity Stage inputs (iLevelStep1, iLevelStep2 and iLevelStep3) from **FB_Load_CompIn** + **FB_GenericSlider**, it's now preset in the function block according to the model
- Update compressor structure stSliderCompIn:
  - remove capacity stage inputs: iLevelStep1, iLevelStep2 and iLevelStep3
  - Add iHys + iMinDuty
- Add web server files
- ~~Change SR_FanCir1Cntrl uiFanLowNoiseMaxFreq default value~~
- Set default FullScallMax and FullScaleMin value according to the probe model (E2_usiProbe)
- Add new menu (Probe) which contains:
  - Probe Model (E2_usiProbe)
  - Max value (E2_Cfg_FullScallMax)
  - Min value (E2_Cfg_FullScallMin)
- Add in SR_init program the setting of PLC EEPROM parameters according to the IOs config + Probes model
- Add new I/O configuration, config 1 and default config modes (the previous one implemented) are available + EEPROM Parameter E2_usiConfigIO
- Change bloc 0067 in the program SR_Alarm: change OR in AND to disable the alarm when the energy meter is not present
- xEnergyMeterPresence Enable/disable FB EnergyTrend + COPCalculation
-
- Add EEPROM parameter E2_ xEnergyMeterPresence
- Add EEPROM parameter E2_xEnableInverterMB
- Add EEPROM parameter E2_xEnableSoftStartMB
- Add EEPROM parameter E2_xEnableFanMB
- Add EEPROM parameter E2_xEnableTM171VEV
- USER INTERFACE\ ENERGY TREND: replace ~~Dayly~~ with Daily
- USER INTERFACE\ ENERGY TREND: replace ~~Monhtly~~ with Monthly
- Enable/Disable Expansion Valve calculation parameters (xExpansionValvePresenceCir1 + xExpansionValvePresenceCir2)
- Change default values of xEnableModbusCompXcirX in FALSE (For each compressor per circuit)
- Variable added in the menu ParComp:
  - E2_xEnableInverterMB
  - E2_xEnableSoftStartMB
  - E2_xEnergyMeterPresence
  - E2_xEnableTM171VEV
  - E2_usiConfigIO




Is removed from SR_CompCir1MBDrivers + SR_CompCir2MBDrivers (managed in SR_Phy2Log)

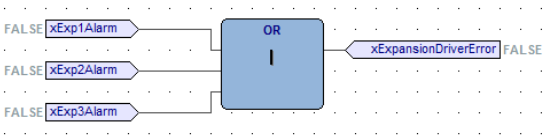



Is removed from SR_CompCir1MBDrivers + SR_CompCir2MBDrivers (managed in SR_Phy2Log)

- xTEvapFromTM171VEV not a constant anymore: disabled if the expansion valve is not used
- Update connection File
- Modify IOs position in **default configuration** for PLC and EXPANSION 1
- Change in LoadCompIn assignation of @compIn.usiCompModel
- Add Hysteresis in Generic Compressor Slider FB
- It manages for each circuit:

a) 1 On/Off step compressor + 1 On/Off compressor
b) 2 On/Off Compressor
c) 1 VS
d) 1 vs + 1 On/Off

- Add the variable xExp1Alarm, xExp2Alarm, xExp3Alarm… xExp12Alarm
- Add EEPROM Parameters E2_xExp1Used, E2_xExp2Used… E2_xExp12Used + in the menu ParComp
- Add SR_ExpManager Program. It switches on alarms xExp1Alarm (for each expansion from 1 up to 12) if E2_xExp1Used (from 1 to 12) is True and the corresponding expansion (in this case Expansion 1) is connected
- In config 1 xAlarmThermBlockPump2 set automatically to TRUE
- In config 1 LOCAL START STOP (DI) set automatically to TRUE
- Add in Config 1 xAlarmComp2Cir1(Expansion DI2) + xAlarmComp2Cir2 (Expansion DI3) in SR_Phy2Log
- Change E2_uiPauseTimeY3 and E2_uiPauseTimeY4 in E2_uiPeriodTimeY3 and E2_uiPeriodTimeY4
- Change unit of E2_uiValve100Time, E2_uiDelayPartWinding, E2_ uiPeriodTimeY3, E2_ uiPeriodTimeY4, E2_uiPulseTimeY3, E2_uiPulseTimeY4
- Replace Compgmt with the last update as in SOM 2.4
- Change IO forms from physical to logical.
- Remove local var name in setting menu and replace with parameter codes.
- Added Compressor selector parameter (Forms Par Compressor)
- Create the variable xExpansionDriverError (Below, alarm expansion management)




**Config 2**

| Logical ID | DIGITAL OUTPUTS | DIGITAL INPUTS | ANALOG INPUTS | ANALOG OUTPUTS |
|---|---|---|---|---|
| 1 | PUMP1 | ALARM COMP1 CIR1 | CHILLED WATER TEMP (Water outlet) | INV COND FAN CIR1 |
| 2 | PUMP2 | ALARM COMP2 CIR1 | HOT WATER TEMP (Water inlet) | INV PUMP |
| 3 | GENERAL ALARM | ALARM COMP3 CIR1 | OUT DOOR AIR TEMP | COMP1 Y3 CIR1 |
| 4 | FAN 1 CIR1 | ALARM COMP4 CIR1 | COND OUT TEMP CIR1 | COMP1 Y4 CIR1 |
| 5 | FAN 2 CIR1 | HP SWITCH CIR.1 | EMERGENCY STOP (DI) | INV COMP1 CIR1 |
| 6 | FAN 3 CIR1 | LP SWITCH CIR.1 | LOCAL START STOP (DI) | Not Used |
| 7 | FAN 4 CIR1 | ALARM THERM BLOCK PUMP 1 | XREMOTESTARTSTOP (DI) | |
| 8 | SOLENOID CIR1 | ALARM THERM BLOCK PUMP 2 | PUMP FLOW SWITCH (DI) | |
| 9 | COMP1 CIR1 | ALARM COND FAN1 CIR1 | **EVAP OUT TEMP CIR1** | |
| 10 | COMP2 CIR1 | ALARM COND FAN2 CIR1 | Not Used | |
| 11 | COMP3 CIR1 | ALARM COND FAN3 CIR1 | **HIGH PRESSURE CIR 1** | |
| 12 | COMP4 CIR1 | ALARM COND FAN4 CIR1 | **LOW PRESSURE CIR 1** | |

If the Evaporating Valve is not present, these values (**EVAP OUT TEMP CIR1 and LOW-PRESSURE CIR 1**) are set from AIs.

**Default config**

| Logical ID | DIGITAL OUTPUTS | DIGITAL INPUTS | ANALOG INPUTS | ANALOG OUTPUTS |
|---|---|---|---|---|
| 1 | PUMP1 | ALARM COMP1 CIR1 | CHILLED WATER TEMP (Water outlet) | INV COND FAN CIR1 |
| 2 | PUMP2 | ALARM COMP2 CIR1 | HOT WATER TEMP (Water inlet) | INV PUMP |
| 3 | GENERAL ALARM | ALARM COMP3 CIR1 | OUT DOOR AIR TEMP | COMP1 Y3 CIR1 |
| 4 | FAN 1 CIR1 | ALARM COMP4 CIR1 | COND OUT TEMP CIR1 | COMP1 Y4 CIR1 |
| 5 | FAN 2 CIR1 | HP SWITCH CIR.1 | EMERGENCY STOP (DI) | INV COMP1 CIR1 |
| 6 | FAN 3 CIR1 | LP SWITCH CIR.1 | LOCAL START STOP (DI) | Not Used |
| 7 | FAN 4 CIR1 | ALARM THERM BLOCK PUMP 1 | XREMOTESTARTSTOP (DI) | |
| 8 | SOLENOID CIR1 | ALARM THERM BLOCK PUMP 2 | XCOMMON ALARM (DI) | |
| 9 | COMP1 CIR1 | ALARM COND FAN1 CIR1 | PUMP FLOW SWITCH (DI) | |
| 10 | COMP2 CIR1 | ALARM COND FAN2 CIR1 | Not Used | |
| 11 | COMP3 CIR1 | ALARM COND FAN3 CIR1 | HIGH PRESSURE CIR 1 | |
| 12 | COMP4 CIR1 | ALARM COND FAN4 CIR1 | LOW PRESSURE CIR 1 | |
| 1 | COMP1 CIR2 | ALARM COMP1 CIR2 | Not Used | COND FAN CIR2 |
| 2 | COMP2 CIR2 | ALARM COMP2 CIR2 | COND OUT TEMP CIR2 | INV COMP1 CIR2 |
| 3 | COMP3 CIR2 | ALARM COMP3 CIR2 | ALARM COND FAN1 CIR2 (DI) | |
| 4 | COMP4 CIR2 | ALARM COMP4 CIR2 | ALARM COND FAN2 CIR2 (DI) | |

| | | | | |
|---|---|---|---|---|
| 5 | SOLENOID CIR2 | HP SWITCH CIR.2 | ALARM COND FAN3 CIR2 (DI) | |
| 6 | FAN 1 CIR2 | LP SWITCH CIR.2 | ALARM COND FAN4 CIR2 (DI) | |
| 7 | FAN 2 CIR2 | | HIGH PRESSURE CIR 2 | |
| 8 | FAN 3 CIR2 | | LOW PRESSURE CIR 2 | |
| 9 | FAN 4 CIR2 | | **EVAP OUT TEMP CIR1** | |
| 10 | Not Used | | Not Used | |

**Config 1**

- It manages for each circuit
  - 2 ON/OFF
  - 1 VS + 1 OFF
  - 1 Screw step (25-100 or 50-100) (+ 1 ON/OFF)
  - 1 Screw Stepless (+ 1 ON/OFF)

| Logical ID | DIGITAL OUTPUTS | DIGITAL INPUTS | ANALOG INPUTS | ANALOG OUTPUTS |
|---|---|---|---|---|
| 1 | COMP1 CIR1 | ALARM COMP1 CIR1 | CHILLED WATER TEMP | INV COMP1 CIR1 |
| 2 | COMP.1 STEP 1 CIR1 | ALARM COMP1 CIR2 | HOT WATER TEMP | INV COMP1 CIR2 |
| 3 | COMP.1 STEP 2 CIR1 | ALARM COND FAN1 CIR1 | HIGH PRESSURE CIR.1 | **COMP1 CR3 CIR1** |
| 4 | COMP.1 STEP 3 CIR1 | ALARM COND FAN2 CIR1 | HIGH PRESSURE CIR.2 | **COMP1 CR4 CIR1** |
| 5 | COMP1 CIR2 | ALARM COND FAN3 CIR1 | LOW PRESSURE CIR.1 | INV COND FAN CIR1 |
| 6 | COMP.2 STEP 1 CIR2 | ALARM COND FAN4 CIR1 | LOW PRESSURE CIR.2 | INV COND FAN CIR2 |
| 7 | COMP.2 STEP 2 CIR2 | ALARM COND FAN1 CIR2 | ALARM THERM BLOCK PUMP 1 **(DI)** | |
| 8 | COMP.2 STEP 3 CIR2 | ALARM COND FAN2 CIR2 | PUMP FLOW SWITCH**(DI)** | |
| 9 | FAN 1 CIR1 | ALARM COND FAN3 CIR2 | HP SWITCH CIR.2 **(DI)** | |
| 10 | FAN 2 CIR1 | ALARM COND FAN4 CIR2 | LP SWITCH CIR.2 **(DI)** | |
| 11 | FAN 3 CIR1 | HP SWITCH CIR.1 | OIL PRESSURE SWITCH COMP1 CIR1 **(DI)** | |
| 12 | FAN 4 CIR1 | LP SWITCH CIR.1 | OIL PRESSUR SWITCH COMP1 CIR2 **(DI)** | |
| 1 | FAN 1 CIR2 (EXP.) | XREMOTESTARTSTOP | Not Used | **COMP1 CR3 CIR2** |
| 2 | FAN 2 CIR2 (EXP.) | **ALARM COMP2 CIR1** | Not Used | **COMP1 CR4 CIR2** |
| 3 | FAN 3 CIR2(EXP.) | **ALARM COMP2 CIR2** | Not Used | |
| 4 | FAN 4 CIR2(EXP) | **OIL PRESSURE SWITCH COMP2 CIR1 (DI)** | Not Used | |
| 5 | PUMP 1(EXP) | **OIL PRESSUR SWITCH COMP2 CIR2 (DI)** | Not Used | |
| 6 | COMP2 CIR1(EXP) | Not Used | Not Used | |
| 7 | COMP2 CIR2(EXP) | | Not Used | |
| 8 | **GENERAL ALARM** | | Not Used | |
| 9 | Not Used | | Not Used | |
| 10 | Not Used | | Not Used | |

PLC

Expansion 1

Known Issues:

- Check the default value of each variables (Set default configuration)
- Update the HMI project, and in particularly the name of the variable displayed on the PLC + the menu
- Manage Alarms
- No starting time available for Bitzer stepless
- General Alarm not active when alarm Low pressure cir1 and 2 are set on
- Update Web Server as in HMI prj.
- split initialization of IOs PLC and expansions
- Add parameter do disable/enable web

- TODO for Red LED Signal: when is on → at least one alarm active, when is flashing → at least one re-settable alarm and no alarm active
- Manage pump suction pressure probe
- Set iCurrentWaterTempSet as iSetpoint
- Set iChilledWaterTemp as RegulationProbe
- Thermal power calculation: add subset of parameter to manage different compressor
- Modify QRCode with a string
- Disable page Energy Menu Description if COP is not enabled
- Validate CMP Management OOPCircuit (8 compressor in 1 circuit)
- Enter SoMachine HVAC default credentials (**Username**: administrator, **Password**: password): the web site main page is displayed. (TODO modify the string Username Password: with a parameter)
- TODO add a subset of parameter to manage different compressor
- (TODO change to setpoint to do abstraction Pressure/temperature)
- (TODO change to regulation probe to do abstraction Pressure/temperature)
- (TODO change Status Variable)
- Add basic BACnet integration (setpoint, onoff scheduler)
- Dynamic configuration of the frequency for the CRII compressor
- Config 1, move DO8 GENERAL ALARM from the expansion to the PLC (To be confirmed)

## Release 1.02 21-02-2018

CHANGES:

- HMI project updated:
- Add new compressor in the enum usiCompModel (BITZER_CRII)
- Add in the existing HMI project all changes (Variables) made on the Application project
- Update web template IOs (but not generate)
- Review I/O base configuration and update connection file able to manage for each circuit
  a) 4 On/Off compressors
  b) 1 VS or Screw stepless + 3 or less on/Off

| Logical ID | DIGITAL OUTPUTS | DIGITAL INPUTS | ANALOG INPUTS | ANALOG OUTPUTS |
|---|---|---|---|---|
| 1 | PUMP1 | ALARM COMP1 CIR1 | CHILLED WATER TEMP (Water outlet) | INV COND FAN CIR1 |
| 2 | PUMP2 | ALARM COMP2 CIR1 | HOT WATER TEMP (Water inlet) | INV PUMP |
| 3 | GENERAL ALARM | ALARM COMP3 CIR1 | HIGH PRESSURE CIR 1 | COMP1 Y3 CIR1 |
| 4 | FAN 1 CIR1 | ALARM COMP4 CIR1 | OUT DOOR AIR TEMP | COMP1 Y4 CIR1 |
| 5 | FAN 2 CIR1 | HP SWITCH CIR.1 | COND OUT TEMP CIR1 | INV COMP1 CIR1 |
| 6 | FAN 3 CIR1 | LP SWITCH CIR.1 | EMERGENCY STOP **(DI)** | Not Used |
| 7 | FAN 4 CIR1 | ALARM THERM BLOCK PUMP 1 | LOCAL START STOP **(DI)** | |
| 8 | SOLENOID CIR1 | ALARM THERM BLOCK PUMP 2 | XREMOTESTARTSTOP **(DI)** | |
| 9 | COMP1 CIR1 | ALARM COND FAN1 CIR1 | XCOMMONALARM **(DI)** | |
| 10 | COMP2 CIR1 | ALARM COND FAN2 CIR1 | PUMP FLOW SWITCH **(DI)** | |
| 11 | COMP3 CIR1 | ALARM COND FAN3 CIR1 | Not Used | |
| 12 | COMP4 CIR1 | ALARM COND FAN4 CIR1 | Not Used | |
| 1 | COMP1 CIR2 | ALARM COMP1 CIR2 | HIGH PRESSURE CIR 2 | COND FAN CIR2 |
| 2 | COMP2 CIR2 | ALARM COMP2 CIR2 | COND OUT TEMP CIR2 | INV COMP1 CIR2 |
| 3 | COMP3 CIR2 | ALARM COMP3 CIR2 | ALARM COND FAN1 CIR2 **(DI)** | |
| 4 | COMP4 CIR2 | ALARM COMP4 CIR2 | ALARM COND FAN2 CIR2 **(DI)** | |
| 5 | SOLENOID CIR2 | HP SWITCH CIR.2 | ALARM COND FAN3 CIR2 **(DI)** | |
| 6 | FAN 1 CIR2 | LP SWITCH CIR.2 | ALARM COND FAN4 CIR2 **(DI)** | |
| 7 | FAN 2 CIR2 | | Not Used | |
| 8 | FAN 3 CIR2 | | Not Used | |
| 9 | FAN 4 CIR2 | | Not Used | |
| 10 | Not Used | | Not Used | |
| 1 | PW COMP1 CIR1 | OIL PRESSURE SWITCH COMP1 CIR.1 | Not Used | Not Used |
| 2 | COMP1 Y1 CIR1 | OIL PRESSURE SWITCH COMP2 CIR.1 | Not Used | Not Used |

| | | | | |
|---|---|---|---|---|
| 3 | COMP1 Y2 CIR1 | OIL PRESSURE SWITCH COMP3 CIR.1 | Not Used | |
| 4 | PW COMP2 CIR1 | OIL PRESSURE SWITCH COMP4 CIR.1 | Not Used | |
| 5 | COMP2 Y1 CIR1 | | Not Used | |
| 6 | COMP2 Y2 CIR1 | | Not Used | |
| 7 | COMP2 Y3 CIR1 | | Not Used | |
| 8 | COMP2 Y4 CIR1 | | Not Used | |
| 9 | Not Used | | Not Used | |
| 10 | Not Used | | Not Used | |
| 1 | PW COMP1 CIR2 | OIL PRESSURE SWITCH COMP1 CIR.2 | Not Used | COMP1 Y3 CIR2 |
| 2 | COMP1 Y1 CIR2 | OIL PRESSURE SWITCH COMP2 CIR.2 | Not Used | COMP1 Y4 CIR2 |
| 3 | COMP1 Y2 CIR2 | OIL PRESSURE SWITCH COMP3 CIR.2 | Not Used | |
| 4 | PW COMP2 CIR2 | OIL PRESSURE SWITCH COMP4 CIR.2 | Not Used | |
| 5 | COMP2 Y1 CIR2 | Not Used | Not Used | |
| 6 | COMP2 Y2 CIR2 | Not Used | Not Used | |
| 7 | COMP2 Y3 CIR2 | | Not Used | |
| 8 | Not Used | | Not Used | |
| 9 | Not Used | | Not Used | |
| 10 | Not Used | | Not Used | |

PLC
Expansion 1
Expansion 2
Expansion 3

KNOWN ISSUES:

- Manage Hysteresis for Compressor Generic slider (step transition)

## Release 1.01 15-02-2018

CHANGES:
- Add program SR_CompCir2Config, SR_CompCir2MBDrivers and SR_InitCompCir2
- Add the possibility to enable/disable oil recovery management

BUG FIXES:
- Use of a second circuit

Known Issues:
- Digitals and analogs, I/O must be reviewed

## Release 1.00 30-08-2017

CHANGES:
- Add FB Compressor selector
- Add compressor structures
- Add usiCompModel (enum of compressors models)
- Add parameters for oil management (Parameters uiOilRecoveryPeriod, uiOilRecoveryTime)
- Add FB_LoadCompIn
- Add FB_LoadCompOut
- Add program SR_CompCir1Config, SR_CompCir1MBDrivers and SR_InitCompCir1
- Add FB_CompCounterType