

Difference between BLR-ACX and BLR-ACX-Plus

	CX plus (BLR-ACX-Plus)	BLR-CX (BLR-ACX)
Option –MB: MODBUS RTU Communication Port	Integrated in to the main casing. The additional cost for the integrated MODBUS module will be a fraction of the “piggy-back” solution.	Additional MODBUS-BOX is needed → “piggy-back” solution. The additional cost of the “piggy-back” MODBUS-BOX is very high.
Backfitting of the Modbus RTU Communication Port	If a customer buys a non- MODBUS device, the socket of MODBUS port is already assembled. Only the MODBUS-SETUP-Menu 700 is not available. A later upgrade to MODBUS will be possible, if the device is sent to our factory.	Customer can order the MODBUS-BOX to a later time and setup the MODBUS-BOX by itself.
MODBUS-Communication- SETUP	If device has MODBUS-Port integrated, the SETUP-Menü 700 of the device is available to setup the MODBUS communication parameters.	For setup of the MODBUS communication parameters the MODBUS-BOX must be configured separately. A USB cable, a PC with Microsoft Windows XP and the additional BELUK-Software “WinTool” (free of charge) is needed. Disadvantage: The “WinTool” software only works properly on Windows XP! Since Windows 7 the “WinTool”-Software can’t communicate with the MODBUS-BOX in most cases!
Device Software: Customer wishes / further developments	New hardware, there is room for future software developments and customer wishes .	This is not possible on old hardware, because the program memory is fully used.
Customer Default Settings:	Extra parameter table in the NON-Volatile memory, which holds the own customer default settings, if necessary. After a reset (601), the Customer Default Settings are loaded.	Customer Default Settings, if necessary, were stored as actual configuration in the NON-Volatile memory. After a reset (601), the BELUK Default Settings are loaded. The Customer Default Settings are lost!
Step Output	6R or 12R. 14R is not supported . Additional step 13 is possible, if the FAN output of 12R-device is used as additional step output.	6R, 12R or 14R
FAN output	Separate FAN output. It can be used as additional step output instead of FAN output.	No separate FAN output . One Step output can be used as FAN output. Steptype of this step must be set to “AL”. Disadvantage: One Step output Is missing.
Current Resolution:	Better resolution: 5mA...5A	Lower resolution: 15mA...5A

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Harmonics of current:	Available. THD-I and Harmonics of current 3...19 THDI is now visible from 1 st to 19 th harmonic	Not available.
THD-I alarm	Available.	Not available.
Q-Offset (312)	Q-Offset (312) is stored / can entered now from 9,9Mvar capacitive to 9,9Mvar inductive.	Range of Q-Offset (312) dependent on the set voltage and current transformer ratio.
Stepdata Base: Stepsize	Higher resolution of the stepsizes. Stepsize is stored / can entered now from 9,9Mvar capacitive to 9,9Mvar inductive for each step.	Lower resolution of the stepsizes. Stepsize which is stored / which can be entered is dependent on the set voltage and current transformer ratio.
Step recognition == recognition of the actual stepsize	The step recognition is now much more precise. The step recognition is active between 0...50 switches of a step. Disturbance will not so falsify the recognized stepsizes.	The step recognition is now much more precise. The step recognition is active between 0...10 switches of a step. Disturbance will so more falsify the recognized stepsizes.
Step recognition is finished / stepsize was entered manually → autotracking of stepsizes	If step recognition of a step was finished or its stepsize was entered manually, autotracking of the stepsize is always active , even the function step recognition (308) was disabled . So a defective step or a Step Power Loss will be always detected.	If step recognition of a step was finished or its stepsize was entered manually, autotracking of the stepsize is only active , if function step recognition (308) is enabled . So a defective step or a Step Power Loss will only be detected, if function step recognition (308) is enabled .
Step Power Loss Alarm	If Alarm is enabled and a step has lost more than 25% of its original power, Step Power Loss alarm will switch OFF this step and block it by setting its step type permanent to FOFF	If Alarm is enabled and a step has lost more than 25% of its original power, only alarm message will be given.
Control algorithms	New FIFO-algorithm. First IN, First OUT	FIFO-algorithm is not implemented.
AUTO INIT (AI)	The AI Algorithm was reworked and works better. AI often detect correct phase angle successfully even heavy load changes occurs in some situations. It needs only max. 4 durations to detect the correct phase angle.	The AI Algorithm was NOT reworked. AI often fails if heavy load changes occurs in some situations. It needs max. 8 durations to detect the correct phase angle.

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Operation Hours Steps	Step Operation Hours Counter for each step available. The On-Time of each step will be counted now. The step data base now counts both: usage time and number of switches of the respective step so step balancing can be done on operation cycles or hours.	No Step Operation Hours Counter available.
Switch Spreading	Switch Cycles or Operation Hours Step (Setup menu 315)	Only Switch Cycles possible.
Alarm Buffer	Shift buffer with the last 10 alarms. Entry 1 contains the newest, entry 10 contains the oldest. New alarm will move all entries one entry further, so the oldest alarm before will be deleted.	No alarm buffer.
Digital Input	Separate Digital Input is assembled now by default. Digital Input is potential free. Input range: 90 - 250VAC	Temperature sensor input can be used as Digital Input instead of temperature measurement. Function of Temperature sensor input must be changed in the alarm setup menu 510. Digital Input is NOT potential free. Only a potential free contact can be connect to the Temperature sensor input.
Function of Digital Input	Switch from target cos phi 1 to target cos phi 2 or blocking of the I-LOW-alarm	Only function Switch from target cos phi 1 to target cos phi 2 possible
I-Low-Alarm	Can be blocked by the digital Input.	Can not be blocked. Always active!
Temperature sensor	Temperature Sensor is assembled internally by default. <u>Advantage:</u> No antenna effect dependent to big wire lengths of an external temperature sensor. No destroying of temperature sensor input by overvoltage possible, because temperature sensor is internally assembled.	Pluginable Temperature Sensor is optionally. <u>Disadvantage:</u> Big wire lengths for an external temperature sensor will receive disturbance like an antenna → wrong temperature measurement. Occasionally overtemperature message produced by disturbance although temperature is in valid range! Temperature Sensor Connector can be used as digital input → If voltage is too high, the temperature sensor input will be destroyed!

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LCD-Backlight	To increase the lifetime of the LCD-Backlight LEDs, the backlight will be shut off after 60s, if no key were pressed until this delay.	LCD-Backlight is always ON. After a delay of 5s, if no key were pressed, the backlight will be dimmed down. The lifetime of the LCD-Backlight LEDs is shorter in this solution.