U90 Ladder 6.6.36 Features   Document version: 17/9/17

Supports new Jazz model JZ20-UN20	Digital Inputs including one HSC, 2 Analog/Digital Inputs, 1 Analog Input, 1 PT100/TC , 5 Relay Outputs, and 2 Transistor Outputs.
Wide Ladder Nets	Ladder nets are now wide, and reach completely across your PC screen - no empty areas. This gives you twice the editing space
"Run as Admin"	U90 Ladder and other software utilities are now set to "Run as Admin".

U90 Ladder 6.6.28 Features

.u90 Download Files	You can now create .u90 download files by selecting Project> Create Download File, and following the on-line instructions.

U90 Ladder 6.6.17 Features   Document version: 25/1/16

Supports new Jazz models JZ20-T20HS, and JZ20-R16HS	• JZ20-T20HS 6 Digital, 2 Analog/Digital, 2 Analog, 3 High-speed Inputs, 8 Transistor, 5 High-speed Outputs This model supports PWM via hardware configuration, no Special Functions required. • JZ20-R16HS 6 Digital, 2 Analog/Digital, 2 Analog, 3 High-speed Inputs (HSC/Shaft-encoder), 6 Relay Outputs These models both support Ethernet Add-on module for Jazz 2, enabling both MODBUS/TCP and PC-PLC communications.

U90 Ladder 6.6.0 Features

Supports new Jazz models JZ20-T10, and JZ20-T18	• JZ20-T10 6 Digital Inputs, 4 Transistor Outputs • JZ20-T18 6 Digital, 2 Analog/Digital, 2 Analog Inputs, 8 Transistor Outputs

| Jazz20: 1 mSec Interrupt | Jazz20 models now support an Interrupt of 1 mSec, via SB 96. |

U90 Ladder 6.5.0

| Supports new Jazz models JZ20-R10, R16, and R31 | Block PC Access (Jazz20 ONLY)
Enables you to lock the communication channel and require a password to open it. |

@ @ @ @ @ @ @ @

U90 Ladder 6.3.0 Features

| Supports new Jazz models JZ20-R10, R16, and R31 | These models:
-Are 30x faster than JZ10 models
-Comprise integral USB programming ports. |

U90 Ladder 6.1.0a Features   Document version: 12/3/09

New I/O Expansion Modules	Now supported by U90 Ladder: XL series I/O modules, offering more I/Os in less space. **EX** modules offer a built-in adapter, replacing the need for an EX-A1 adapter. Supported modules: • EX-D16A3-RO8 • EX-D16A3-TO16 • IO-D16A3-RO16 • IO-D16A3-TO16
Jazz Models	Now supported by U90 Ladder • JZ10-11-UN20 • JZ10-11-UA24
Cold Start SI	To cause PLC restart: • With initialization, set SI 140 to -32500 • Without initialization, set SI 140 to-32000.
Slovakian support	To change the U90 Ladder interface language, select View>Language and click on the desired language.

Updated help files

Enfora GSM modem   Better support for Enfora GSM modem in U90Ladder and OS

U90 Ladder 5.2.6 Features

Supports new Jazz model JZ10-11-PT15   New model has 3 Digital, 3 Digital/Analog, 3 PT1000/NI1000 Inputs, 5 Relay,1 pnp/npn Outputs.

U90 Ladder 5.2.4 Features

Download via RS485 network   Specify a single controller or range of controllers at download.

U90 Ladder 5.2.3 Features   Document version: 16/08/07

Telestar GSM modem   Now supported by U90 Ladder.

Jazz: Keypad Entry   The number of Keypad Entry Variables that include Set Limits has been increased to 16—Jazz only.

Jazz: List variables   The memory capacity for variables has been increased to 3K—Jazz only.

U90 Ladder 5.10 Features   Document version: 14/03/06

IO Expansion Module   **IO-PT400, IO-PT4K**
Two new modules offer 4 PT inputs (alpha): I/O-PT400 supports PT100 & NI100; I/O-PT4K supports PT1000 & NI1000

New modem support   Now supports Siemens TC65 modem

Entering Information mode control   The time that the <i> key must be held to enter Information Mode can be modified (3-20 seconds) via SI 178.
Entering 0 disables Information mode.

Information Mode SB 54	SB54 is ON when the <i> key is pressed, even when data is being entered into a Keypad entry Variable, and even if Information mode is disabled via SI 178=0
MODBUS	Improved performance at baud rates slower than 4800

U90 Ladder 5.09   Document version: 18/01/07

PID –Improved Algorithm (M91 only)	SB 109 switches between the old and new improved algorithm.
PID - Internal Auto-tune (M91 only)	M91 controllers using OS V3.72 (B08) or later now feature PID Internal Auto-tune via SBs. Requires SB 109 ON.

U90 Ladder 5.09   Document version: 20/08/06

M90 PID Internal Auto-tune	M91 controllers may now be easily tuned via SBs. Each PID loop is linked to two SBs, one to activate auto-tune, and one that signals when the process is complete. Check the new sample application: Help> Sample U90 Projects>PID M91 Auto-tune.U90.

U90 Ladder 5.07   Document version: 20/08/06

- New translation files for Polish and Hungarian

- New hardware model M91-2-RA22

- New hardware expansion unit I/O PT4X

U90 Ladder 5.06   Document version: 24/07/06

New Controller models	Now supported in Hardware Configuration. **JZ10-11-R31** 16 Digital, 2 Analog/Digital, 2 Analog Inputs, 11 Relay Outputs. **JZ10-11-T40**

16 Digital, 2 Analog/Digital, 2 Analog Inputs, 20 Transistor Outputs.

M91-2-RA22
12 digital inputs, including high-speed counter/shaft encoder inputs,
2 analog inputs, 2 temperature measurement inputs, I/O expansion and
RS232/485 ports.

Jazz Cloner support	In Jazz OPLCs, Information Mode now supports the Jazz Program Cloner. Full details are in the Jazz User Guide.

U90 Ladder 5.05   Document version: 08/06/06

Certain minor issues relating to support for the new Jazz series were fixed in the new version

U90 Ladder 5.00   Document version: 19/03/06

New Controller models	**Jazz™ OPLC™** A new OPLC series that is now supported in Hardware Configuration. **M92-1-R34** This new M91 model runs off 24VDC, and offers 22pnp/npn digital inputs, including 3 high-speed counter/shaft encoder inputs, 2 analog inputs, 12 relay outputs, I/O expansion and RS232/485 ports.
New Features	**Drum** The Drum Sequencer utility simulates a mechanical drum sequencer. Drum instructions are best suited for repetitive processes that consist of a finite number of steps. **Immediate Outputs** The M91-2-T38 now supports Immediate Set/Reset for outputs O 0, O 1, O 10, O 12, O 13, O 14, and O 15.

New I/O module support	**IO-DI8ACH** New I/O expansion module, offers eight 110/220VAC inputs
Display Languages	If your PLC model is 'multilingual' you can type and display a number of languages on the controller's LCD. When you install U90 Ladder, the Display Settings box opens, enabling you to determine a default language for the HMI Displays. After installation, you can change the PLC Display Language at any time.
Modems	Modem Services, on the Controller menu, replaces PC Modem Configuration. Modem Services enable you to initialize supported modems for both PC and PLC-side modems, via a 'Prepare Modem' procedure.
Database	Read/Write 1024 integers from U90 Ladder.
General Features	8 Watch folders enable you to monitor groups of operands. Find & Replace now searches through Variables, Hardware Configuration, PID and SMS Configurations. **New Utility:** Find Text in Comment. **Summary:** Operands Not Referenced in Project.

U90 Ladder 4.01

Document version: 05/12/05

Bulgarian is now available from the View>Language menu.

U90 Ladder 4.00

Document version: 22/ 11/ 05

U90 Ladder Hardware Configuration	**M91-2-R34** Runs off 24VDC, offers 22pnp/npn digital inputs, including 3 high-speed counter/shaft encoder inputs, 2 analog inputs, 12 relay outputs, I/O expansion and RS232/485 ports. **IO-DI8ACH (soon to be released)**
Display Languages	If your PLC model is 'multilingual' you can type and display supported languages, according to the selected default language. When you install U90 Ladder, the Display Settings box opens, enabling you to determine a default language for the HMI Displays. After installation, you can change the default language at any time.
Modems	Modem Services, on the Controller menu, replaces PC Modem Configuration. Modem Services enable you to initialize supported modems for both PC and PLC-side modems, via a 'Prepare Modem' procedure. PLC Phone Book now supports the '+' (plus) sign as well as the ',' (comma) symbol.
Database	Read/Write 1000 integers from U90 Ladder.
Ladder: New Features	• Import/Export Nets • Bookmarks • Import/Export Operand Descriptions • Rise/Fall Summary • Delete All Comments • Get Next Unused Operand when addressing elements
General Features	• Find & Replace now searches through Variables, Hardware Configuration, PID and SMS Configurations. • New Utility: Find Text in Comment. Summary: Operands Not Referenced in Project.

U90 Ladder V3.81

Document version: 22/ 06/ 04

PID Server: Auto-tune PID loops	The PID Server PC utility enables you to auto-tune PID loops for both the Vision and M90/91 controller series. Although it is installed as part of the VisiLogic/U90 Setup, PID Server runs independently of other Unitronics software. PID Server tunes a PID loop by temporarily disabling the PLC's PID function, and

tuning the loop while the PC controls the PID output. The new utility is located on the Tools menu in both VisiLogic and U90Ladder

MODBUS **New M91 feature**	MODBUS enables you to establish master-slave communications with any connected device that supports the MODBUS protocol, including SCADA systems. Any controller in the network may function as either master or slave using any of the controller's existing COM Ports. Unitronics currently supports RTU (binary) transmission mode.
PID Function **Last received**	The PID function has been modified: Negative Slope control has been added. The Deadband parameter has been removed. Please note that, in existing applications, the changes may require you to modify the P, I, and D parameters.
SMS number	New SIs, 188 to 192, now store the number of the last SMS received by the controller.

U90 Ladder V3.65 Document version: 16/ 02/ 04

O/S 360 B3

U90 Ladder V3.64 Document version: 18/ 01/ 04

Downloading Values to the M90 Database	Download values to the M90 Database, by defining regions of integers in the database, entering values, and downloading. Note that you can also copy and paste values to from other applications, such as Excel. These values can also be included in a .d90 download file.
Timer resolution display	A Timer Resolution field has been added in the Timer Preset window; note that this field is read- only. The resolution is a function of the Timer Preset Value.

U90 Ladder V3.63

Bug fix-
Variables

51- 64 could not be assigned descriptions.

U90 Ladder V3.62

Fast Outputs
support

M91- 2- TC2

Display Fix

In the HMI Editor, some of the Jump conditions could not be viewed at a resolution of 600x800 (2- line models only); this has been fixed.

U90 Ladder V3.61

Supports new
M91 model

Supports M91- 2- R6C (2- line text display)

U90 Ladder 3.60 Version changes

Support for 2-line M91 model	Supports M91- 2- T38, the first 2- line text display model. In addition to more text, up to 8 variables can be displayed on the LCD. When this model is selected, the HMI editor will show the larger display screen. Additional features include 36k memory, 64 HMI variables.
New controller support	M91- 19- 4TC2
New I/ O module support	IO- ATC8, 8 Thermocouple / Analog inputs
New Special Functions	Indirect GSM PIN Code and Calculating 'long' integers (M91 only)
New System Operands	SB 35- 38 Keypad entry completed, support the 4 additional variables that may be show on the LCD of 2- line display models. SI 187, Number of SMS messages to be deleted, enables you to delete up to 30 SMS messages.
Undo	Added to U90Ladder features