

## Innovative switching and control

## LOGO! 8 in detail part 4 Tasks and features

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## LOGO! in detail – slides overview



The LOGO! in detail are split up in 4 parts as follows:

LOGO! in detail part 1

Installation and overview of the function blocks

LOGO! in detail part 2

Usage at the device and handling of the software

LOGO! in detail part 3

Knowing how

LOGO! in detail part 4

• Tasks and features

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## LOGO! in detail – agenda



- 1. Preface
- Typical tasks for LOGO! Cistern Control Insert constants, basic functions, and special functions Connecting function blocks
  - Insert text fields
  - Moving elements
  - Aligning elements
  - Parameterization of blocks
  - Formatting texts
  - Documentation
  - Program testing
  - Assign program password
  - Select LOGO! Version
  - Starting LOGO!
- 3. Typical tasks for LOGO! Conveyor Control
- Typical tasks for LOGO! Astronomical clock with time offset Example 1: Automatic lighting with shaded space Example 2: Animal breeding

- 5. Features Setting the LOGO! clock
- 6. Features Enable analog inputs (AI)
- 7. Features Setting Power-on Screen for LOGO! TDE
- 8. Features LOGO! Access control
- 9. Features LOGO! network view
- 10. Features Creating and managing User-Defined functions
- 11. Features Master / master communication
- 12. Features Master / slave communication

## LOGO! in detail – preface



### LOGO! in detail, part 4, is intended to show the reader useful examples for typical tasks of LOGO!.

All screenshots were taken of the current version of LOGO! Soft Comfort V8.2.

The download can be found via the following link https://w3.siemens.com/mcms/programmable-logiccontroller/en/logic-module-logo/demo-software/Pages /Default.aspx



Page 4 8/22/2018

## **Typical tasks for LOGO! – Cistern Control**



When the water level drops below the level I1, the drinking water supply (Q1) shall automatically be switched on and when the water level has reached the level I2, the drinking water supply shall automatically be switched off again.



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Page 5 8/22/2018



The schematic diagram (slide 5) shows clearly how many inputs and outputs are necessary to solve the task.

All necessary input, output, marker, constant (high, low) blocks, and all basic and special functions can be chosen via the instructions tree structure on the left side of the software surface.

Drag and drop all required constants into the Diagram Editor.





Which basic functions are necessary to solve the task?

After placing both inputs I1 and I2 and the output Q1 on the Diagram Editor a basic function (NOT) is necessary. Like in the first step, the basic functions can be added via drag and drop.





Which special functions are necessary to solve the task?

A latching relay is necessary to set the value Q1 (open) till the water reaches the I2.

K LOGO!Soft Comfort	
File Edit Format View Tools Window Hel	p
🖹 ± 🔁 🥃 🔜 🚢 🗙 💥 🗐 🖷	<b>り (*) 問 罪 回 町 h</b> ?
Diagram Mode Network Project	
Tools 🖌	Diagram Editor
✓ Diagrams       ✓ Add ivew Diagram       Br <sup>o</sup> Circuit Diagram1	Image: Image
V Instructions	맛 <sup>e</sup> Circuit Diagram1 ×
Analog Amplifier     Analog watchdog     Analog differential trigger     Analog MUX     Analog Ramp     PI controller     PWM     Analog filter     Max/Min     Average value     Miscellaneous     Miscellaneous     Message texts     Softkey     Shift register	
E Mathematic instruction error	
Data Log Profile     Data Log     Data Log     Data Log	<
Connect	DBA8.Standard 100% S. 1

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Alternatively the NOT function can be replaced by negating the S input of self-holding relay.

This can be done via the content menu of the digital input (right mouse click – Invert connector) or via double click.



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## **Cistern Control – Connecting function blocks**



To complete the control circuit, it is necessary to connect the bocks with each other.

Usually after placing a block, it is possible to draw the connection line with the cursor. If a different mode is selected, change the mode to the selection mode or connect mode.  $\Box$ 

To draw a connection line move the cursor on the connection pin of a block (a small blue box will be shown) and click the left mouse key. While holding move the cursor to the next pin.



## **Cistern Control – Insert text fields**



To obtain a better overview of the circuit diagram, LOGO! Soft Comfort offers several ways of embedding text.

Add a comment to each block in the program via *Block Properties…*(right click) or double click.

(All ways of embedding text are described in Detail in LOGO! in detail Part 3)



## **Cistern Control – Moving elements**



The program is completed with insertion of function blocks and their connections. To get a clear view of the program, it is possible to replace or move the function blocks, lines, and text fields.

The cursor tool k has to be selected to move elements like function blocks, lines, and text fields.







## **Cistern Control – Aligning elements**



To design everything more neatly and more clearly, the individual function blocks can be aligned vertically or horizontally.

First the elements have to be selected to align them. Via the buttons in or in the selected elements will be aligned vertically or horizontally.



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## **Cistern Control – Parameterization of blocks**



Beside comment dialogues, there are also parameters dialogues. Here the user is able to preset parameters of each function block.

Right click on a function block and select *Block Properties…* Alternatively double click on The function block.

In the parameter dialogue, addresses can be allocated. Only addresses which are available are displayed.



## **Cistern Control – Parameterization of blocks**



Additionally there is the possibility to change and check all block attributes centrally.



Edit – Block Properties (All Blocks)...

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Page 15 8/22/2018

## **Cistern Control – Formatting texts**



Font Attributes

Users can format comments and text fields.

Right click on text and select *Font...* Or double click



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Page 16 8/22/2018



For the documentation all used constants, basic functions and special functions can be displayed.

Via *Edit* – *Go to block* all used blocks can be displayed. The window shows the information about block number and block type and their comments. Blocks can be located by searching for their names or clicking on their icon in the list. The selected block will be highlighted in the diagram editor.





Further information about the program can be viewed via the information window. It is located at the bottom window frame by default.

The information window can be added via View - Info Window or alternatively via F4 key. In the information window the used resources are displayed with current date and time.

LOGO! has to be connected to the PC.





Program information can be entered via *File – Properties* in the *LOGO! Setting dialogue – Additional Info*. They appear in the program printout in the footer.

	LOGO! settings					
<ul> <li>New</li> <li>Open</li> <li>Close</li> <li>Close All</li> <li>Save</li> <li>Save As</li> <li>Page Setup</li> <li>Print Preview</li> <li>Print Preview</li> <li>Print</li> <li>Message Text Settings</li> </ul>	Offline settings Online General Hardware type I/O settings I/O names Program passwork Power on Message text Additional info Statistics Comment	settings ddtional Info Creator: Project name: Installation name: Customer: Diagram no.: Checked: Company: Version:	Mr. Hinterhube LOGO! in detai drinking water John Doe Com 08-15 Mr. Check SIEMENS 1 1 Show at new	r I supply ipany 0 v file	0	

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Page 19 8/22/2018



The program including the entered plant data can be viewed via *File – Print Preview*.



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Page 20 8/22/2018



Via *Properties…* in the print preview window documents which shall be printed can be selected. By default the circuit diagram, the parameter list and the list of connection names are selected.

Back Forward 1	drinking water inlet ON II (sensor mid) B001 B002 B002 B002 B002 B002 B002 B002	Print contents         Image: Comment         Image:
<	drinking water inlet OFF	V List of Connector Names      Print options      Suppress empty pages      Zoom: 50%     ▼      OK Cancel Help

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If the program becomes bigger or more complex, it makes sense to divide the circuit diagram onto more



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Page 22 8/22/2018

## **Cistern Control – Program testing**



After configuration and documentation, the program testing via offline simulation is the next step.



Page 23 8/22/2018

## **Cistern Control – Program testing**



The simulation tool allows to test the program even without using a LOGO!

To test the program the 🔛 button has to be selected. In this offline simulation mode a tool bar for monitoring and controlling (like I1, I2 and Q1) will be located at the bottom of the window frame. By clicking on the

buttons (like 11 or 12) at the tool bar, it is possible to change the status of the inputs. the signal run can be tracked via the color change from blue (low) to red (high signal).

If a LOGO! is connected to the PC, a online simulation is also possible via the offline button **a**. So a download of the program to the LOGO! is not necessary.



## **Cistern Control – Program testing**



As an additional program testing feature, each input can be allocated to a certain switch function. Via the context menu (right mouse key) of an input block, it is possible to change the input mode. Choosing frequency mode inputs can be adjusted in Hz.

The value range for each analog inputs can be preset as well. These parameters can centrally be changed and reviewed via *Tools – Simulation parameters*.



## **Cistern Control – Assign program password**



To protect the program and the user's know how, a valid 10-digit password can be set for the program. This password protects the program only on LOGO!. The program is not deletable, changeable or viewable without the password. To upload a password protected program on the PC, the password is necessary as well. To delete an assigned password, enter the *Old password* and leave the *New password* empty.

If the password has been lost and the user wants to reuse this LOGO!, the password has to be entered incorrectly three time and the program is automatically deleted.

Alternatively *Tool – Transfer – Clear User Program and Password* (the LOGO! has to be connected to the PC)



## **Cistern Control – Select LOGO! version**



To use a program for previous LOGO!s, the used LOGO! has to be selected via Tools – Select Hardware...

Every LOGO! generation can be selected via *Hardware type – Type.* Choosing a *Type*, all resources of the selected LOGO! version are displayed.



## **Cistern Control – Starting LOGO!**



After transferring the program, LOGO! has to be set to RUN-mode. Now the program can be tested in real life.



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Page 28 8/22/2018

## **Typical tasks for LOGO! – Conveyor control**



### **Function description:**

A bottle filling conveyor shall be controlled. The conveyor control is able to switch on and off via 11. When the conveyor control is switched on, the conveyor motor Q1 runs. The motor can be switched off via 13 at any time. When the sensor 12 detects a bottle, the motor has to be switched off for 3 seconds (filling time). After filling the motor shall run again.



## **Typical tasks for LOGO! – Conveyor control**



### Step 1:

The conveyor control is able to switch on and off via I1. When the conveyor control is switched on, the conveyor motor Q1 runs. The motor can be switched off via I3 at any time.





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Page 30 8/22/2018

## **Typical tasks for LOGO! – Conveyor control**



### Step 2:

When the sensor (I2) detects a bottle, the motor has to be switched off for 3 seconds (filling time). After filling the motor shall run again.





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Page 31 8/22/2018

## Typical tasks for LOGO! – Astronomical clock with time offset Example 1: Automatic lighting with shaded space



Automatic lightings are often used in buildings. At the sunset some parts of a building are getting shaded earlier than others. Therefore these parts need to light up earlier. Additionally at sunrise the lighting needs to switch off later.

The astronomical clock in LOGO! Soft Comfort offers a new function, called 'time offset', to solve this task.



Time offset properties:

Sunrise offset '+30 minutes' means that the section will be light up till 30 minutes after sunrise.

Sunset offset '-30 minutes' means that the section will be light up 30 minutes before sunset.

ParameterBlock name:Block name:	
Block name:	
Location Info	
Location: User-defined -	
Longitude: E 👻 13 🛱 🗍 ° 24 🛱 🖞 ' 41 🛱	0 "
Latitude: N 👻 52 ÷ 🗍 ° 31 ÷ 🗍 ' 24 ÷	1
Time Zone: GMT(+1)	
Name: Save	
Time effect	
Sunrise offset 30 + Minutes	
Sunset offset: -30 🛱 🚺 Minutes	
Others	
Protection Active	

# Typical tasks for LOGO! – Astronomical clock with time offset Example 2: Animal breeding



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B006 [Astronomical clock]

Block name:

Location: Germany - Berlin

Location Info

Parameter Comment

Parameter

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Help

Cancel

The opening process shall start at sunrise. Therefore a time delay is not necessary and the time offset has to be set to 0 minutes.

B006 B007 Q3 (open outlet flap signal)	Longitude: E + 13 + * 24 + * * Latitude: N + 52 + * * 31 + * * Time Zone: GMT(+1) *
Lat: N52°31'24" TZ: 1 Sunrise offset: 0	Time offset     Sunrise offset:     0 + 1     I     Minute       Sunset offset:     0 + 1     I     Minute
	Others

#### the outlet flap opening process of the stable at sunrise

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## Typical tasks for LOGO! – Astronomical clock with time offset **Example 2: Animal breeding**



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At an animal breeding, the animal outlet flap shall automatically open at sunrise and close after sunset. Before closing, there has to be a sound to signal the animal that the closing process starts soon.

30 minutes after the signal sound, the closing shall start. Therefore a time delay has to be set via time offset (-30

Lot: E13°24'41"-

Lat: N52°31'24"

Sunrise offset: 0 Sunset offset: -30

TZ: 1

s to be set via time offset (-30).	Parameter
the outlet flap closing process of the stable at sunset	Block name:         Location Info         Location:       User-defined         Longitude:       E         Image:       13 + 1 + 24 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +
: N52°31'24"	Time offset     0 +     I     Minutes       Sunset offset:     -30 +     I     Minutes
I2 (position switch "putlet flap closed")	Others

B005 [Astronomical clock]

## Features – Setting the LOGO! clock



The system clock of LOGO! can also be set via the software. The LOGO! has to be connected to the PC. Alternatively it is possible to set the time directly on the device.

C LOGO!Soft Comfort					
File Edit Format View Tools Window Help					
📑 🛨 📑 📑 📑 Transfer	▶				
Diagram Mode         Image: Comparison of the compar	LOGO! -> PC Ctrl+U     Start LOGO!     Stop LOGO!     Synchronize clock with EM     Show FW version	□□□  <b>ዺ</b> ዺ  <u>∠</u> ≝‱ ‱	<b>1</b>		~
Instructions     Instructions     Connect Modem     Disconnect Modem	Clear User Program and Password Upload Data Log Configure Network Address	Offline settings Online settings Connect to LOGO!	Sat Clock		
Digital	Configure Master/Slave Mode	Show FW version	Bata and King		
Curson ke Curson ke Curson ke Curson ke Parameter VM Mapping F LOGO! TD S Shift regis Options Is Status 1 (high) G Output X Open connector Analog Analog Analog output Analog flag Charles flag C	Set Clock Summer time/Winter time Set LOGO! TD Power-on Screen Access control Hours counter VO Status Diagnostic Dynamic server IP filters King water inlet.	Assign IP address Set clock Operating mode Clear program and password TD power-on screen Hours Counter Upload data log Diagnostics Summer/Winter time Access control settings Dynamic server IP filter Clock Sync with EM Switch	Day: 12 + Month: Hours: 13 + Minute:	4 ÷ Year: 2000 ÷	Read from PC Read from LOGO! Apply to all LOGO!
At Network analog input	B003		<		1
Network analog output	P				
AND	Prig = 0.				OK Cancel Help
- * NAND (Edge) - * NAND - * (NAND (Edge) - * OR	Text1: enabled Text2: disabled	1 · · · · · · · · · · · · · · · · · · ·			
21, NOR 1 XOR ▼ <			· · · · · · · · · · · · · · · · · · ·		
Selection			0BA8.Standard 150%		

## Features – Setting the LOGO! clock



There is also the possibility to configure an automatic summer / winter clock change via the software or directly on the device. As well the LOGO! has to be connected to the PC to set the time via the software.

Depending on the chosen region, the time will change automatically.



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Page 36 8/22/2018

## Features – Enable analog inputs (AI)



The AI position can be enabled via *File – Properties... - I/O settings*.

Enable none, 2 or 4 Als:

2 Als: Only Al1 and Al2 corresponding to input terminals I7 and I8 are available for use in the circuit program.

4 Als: Additionally, Al3 and Al4 corresponding to input I1 and I2 are available for use.

To ensure compatibility with older devices, enable 2 Als.

ine settings   Online s	ettings		
eneral		Value range type	Value in STOP mode
ardware type	AQ1	0-20mA/0-10V -	0.00
) names	AQ2	0-20mA/0-10V -	0.00
ogram passwor	AQ3	0-20mA/0-10V -	0.00
weron	AQ4	0-20mA/0-10V -	0.00
ssage text	AQ5	0-20mA/0-10V -	0.00
atistics	AQ6	0-20mA/0-10V -	0.00
omment	AQ7	0-20mA/0-10V -	0.00
	400	0.20m4/0.101	0.0014
Se	et AI3 and AI4 pos If 4 AIs are suppo To ensure compa	sition	enable 2 Als or 4 Als? ble 2Als.
Se	Addo et AI3 and AI4 pos If 4 AIs are suppo To ensure compa	ition	enable 2 Als or 4 Als? ble 2Als.
Se	et AI3 and AI4 pos If 4 AIs are suppo To ensure compa © Enable 0 /	sition	enable 2 Als or 4 Als? ble 2Als.
Se	et AI3 and AI4 pos If 4 AIs are suppo To ensure compa C Enable 0 No AIs are	sition rted on LOGO!, do you want to tibility with older devices, ena Als e available for your circuit prog	enable 2 Als or 4 Als? ble 2Als. gram.
Se	et AI3 and AI4 pos If 4 AIs are suppo To ensure compa © Enable 0 / No AIs arr © Enable 2 / Only AI3 ar	sition	enable 2 Als or 4 Als? ble 2Als. gram.
Se	et AI3 and AI4 pos If 4 AIs are suppo To ensure compa © Enable 0 / No AIs are © Enable 2 / Only AI1 ar can be use	Als available for your circuit prog Als nd Al2 corresponding to input ed in your circuit program.	penable 2 Als or 4 Als? ble 2Als. gram. terminals 17 and 18
Se	Aus et AI3 and AI4 post of 4 Als are suppo To ensure compa Enable 0 / No Als are Enable 2 / Only Al1 ar can be use	Als Als Als Als Als Als Als Als	e enable 2 Als or 4 Als? ble 2Als. gram. terminals 17 and 18

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## Features – Setting Power-on Screen for LOGO! TDE



>

Help

OK Cancel

Use *Tools – Transfer – Set LOGO! TD Power-on Screen…* to configure a power-on screen for the LOGO!

TDE. Select Hardware Diagrams



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Page 38 8/22/2018

## Features – LOGO! Access control



Use Tools – Transfer – Access control for assigning a password for Remote -, LOGO! App -, Web server - and LOGO! TDE access.



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## Features – LOGO! network view



Via the *Network Project*, devices can be connected to a network. Devices can be added via *Add New Device*. Up to 16 participants are able to display and configure.

Addable devices: LOGO! (also as Slave) (8.FS4, 0BA8, 0BA7) S7 compatible device ModBus compatible device HMI LOGO! TDE



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Page 40 8/22/2018

## Features – LOGO! network view



Direct connecting of inputs and outputs between multiple devices via drag and drop. It is possible to display up to 3 programs at the same time via the buttons .



Using LOGO! Soft Comfort V8, User-Defined functions (UDF) can be created and saved to a library. Program sections that are repeated can easily be inserted with a UDF as a function block into the circuit program, which significantly simplifies programming. It is possible to create a UDF from an existing circuit program or design a completely new with the UDF editor.

To create an UDF from an existing circuit program, select the requested section, click right anywhere and choose *create UDF*.



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The UDF editor is opened now with the selected selected section of the circuit program. LOGO! Soft Comfort V8 creates at the left and right edit area of the UDF editor automatically an input and output.

After creating, save as an UDF.





To create a new User-Define function, select in the menu of LOGO! Soft Comfort V8 *File – New – UDF diagram (UDF)*.

Programming in the UDF editor is the same as in the function block diagram editor.

New New	▶ 970 Eunction block diagram (FBI	D)
Open	Ctrl+O <sup>1</sup> <sup>th</sup> Ladder diagram (LAD)	5/
📴 Close	Ctrl+F4	
Close All		F S
Save	Ctri+S	x
Save As		
Page Setup	*************	••••
Print Preview	Ctrl+Shift+F1	
Print	Ctrl+P	• • •



To edit UDF properties, open via right-click in the UDF editor the shortcut menu and select the item *Edit UDF properties...* 

Alternatively via *Edit – Edit UDF properties…* 

99	LOG	O!Soft (	Comfo	t				
File	Edit	Format	View	Tools	Window	Help		
200	5	Undo				Ctrl+Z	2	
	Ca	Redo				Ctrl+V	1	
Too	×	Delete				Delete	gran	1 Editor
~	X	Cut				Ctrl+X	t₁ [	A
-	围	Сору				Ctrl+C	LIDE	creating ls
ም የኦ	Q	Paste				Ctrl+V	001	_u caung.iai
<b>1</b>		Align				4	•	
	4	Select	All			Ctrl+A		-1
	10	Go to	Block			Ctrl+G		#1
	1	Bring	to Froni					-
	s	Send	to Back				-	#12
		Input/0	Dutput I	lames.				T
		Block	Propert	ies			-	
		Block	Propert	ies (All	Blocks)			
		Cut co	nnectio	ins			-	
		Edit U	DF prop	erties				
	-			_			-	



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In the dialog window that opens, can be assigned in the "I/O-specific" tab for the UDF a name, a password , as well as connector names For the inputs and outputs.

Daram				
Param	eters Comment	_		
ontifior				
enuner		1		
Identi	mer. UDF			
DF passw	vord			
	Old password:			
	New password:			
Repea	at new password:			
put Conn	ectors			
Index	Identifier		Name	
1	#I1	I_Start		
2	#12	I_Stop		
utput Cor	inectors			
utput Con Index	inectors		Name	
utput Con Index	inectors Identifier #Q1	Q_Start	Name	
utput Con Index 1 2	inectors Identifier #Q1 #Q2	Q_Start Q_Stop	Name	
utput Cor Index 1 2	Inectors Identifier #Q1 #Q2	Q_Start Q_Stop	Name	
utput Con Index 1 2	Identifier #Q1 #Q2	Q_Start Q_Stop	Name	
utput Con Index 1 2	Identifier #Q1 #Q2	Q_Start Q_Stop	Name	
utput Con Index 1 2	inectors Identifier #Q1 #Q2	Q_Start Q_Stop	Name	
utput Con Index 1 2	Identifier #Q1 #Q2	Q_Start Q_Stop	Name	

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Page 46 8/22/2018



In the "parameter-specific" tab it is possible to specify the parameters of the function blocks used in the UDF. If the UDF is used afterwards in a program, the specified parameters of the UDF can be accessed for example as a parameter that is

Displayed in a text message which can be edited.

To insert a new parameter, clock on a block, choose the parameter and click on *Add*. With the button *Remove* inserted parameters can be removed at any time. For each specified parameter additionally a name can be assigned in the *Identifier* tab.

Identifier Ta 🔐 B006 [(	Block On-Delay]	Parameter Current Time <b>Q</b>	
Add Re	emove	Parameter	
ock B006 [On-Delay]		Cri-Delay 💞 Remaining Time <b>Ç</b>	



To add the UDF to the library, navigate in the menu to *Tools – Options* and select the item *UDF*. Via the

button Add UDF, the UDF can be added to the library.

As soon as the UDF have been added to the library, the UDF block is immediately displayed in the instructions tree and can be used in the circuit program.





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U00.1

If the UDF displays in the program a green mark, the UDF is up-to-date. If the UDF displays a red warning signal, the UDF has been edited and an update is necessar

Block Properties... Remote properties

Cut

× Delete

Copy

Select All

Expand UDF Update UDF

1=

寄

Help

Ctrl+X

Ctrl+C

Delete

Ctrl+A

IOD.

 $\left| + \right|$ 

If the UDF displays a red question mark, the UDF is no longer available and has to be imported again to the UDF

library.



Page 49 8/22/2018



To insert or remove constants and function blocks in a UDF, open with right-click on the UDF block the shortcut menu and select the item *Expand UDF* to display the details of the UDF.



Alternatively the UDF file (with the ending .Ima) can also be opened in the menu via *File – Open...* 

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This example uses two LOGO! Basic devices which are both configured as master. One master functions as server, the other as client.

Start by opening a new program. Select *Tools – Ethernet connections…* to create a connection. After creating a new program, click on *Tools – Ethernet Connections…* 





Assign the IP address and the subnet mask of the server. Afterwards create a new connection with a right-click on *Ethernet Connections* and add a connection *via Add server connection* – S7 *Connection*.

Configure the properties of the connection via double-click on the created connection. The new connection displays as a new tab.

Connection1	
Local Properties (Serve	er)
TSAP: 20.00	
Connect w	vith an Operator Panel (OP)
Accept all	connection requests
Only this con	inection:
Remote Properties (Clie	ent)
TSAP: 20.00	

Module Address _		_
IP Address	172. 16.202. 14	
Subnet Mask:	255.255.255. 0	
Default gateway		
Ethernnet connect	ions	
	d client connection	
Ad	d server connection	S7 Connection
		Modbus Connecti
		1

Then create the program. In this example the value of analog input AI1 and the frequency at I3 is written to the client. An input frequency is read by the client at the same time.

Configure the properties of the analog network input via double click on it. The value is read in from the variables. The VW Address is 5 as defined in the client connection

NAII [Network analog input]	×
Parameter Comment	
Parameter:	
Read value from	
<ul> <li>Local variable memory (VM)</li> </ul>	
Remote device	
Local variable memory (VM)	
VW address: 5 🛫 [	
	OK Cancel Help







Now edit the VW assignment. Select Tools – Parameter VM Mapping... and enter the parameters in the

table.



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Page 54 8/22/2018



Create a new program for the client device. After opening a new one, select *Tools – Ethernet Connections...* and assign the IP address and subnet mask of the client.

To create a new client connection, click right on *Ethernet Connections* and select add client connection - S7 Connection.

IP A	ddress	172. 16.202. 2	
Subne	t Mask:	255.255.255. 0	
Default g	ateway	x + x	
thernnet c	onnecti	ons	1
000	Add	I client connection	S7 Connection
	Add	server connection	Modbus Connectio

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Page 55



Configure the properties of the client connection.

In the table for data transfer, it is possible to specify how many data (length) are to be sent or received from the server, and which local and remote addresses they should have.

In this example 4 bytes (2 words, VW 0 and VW 2) are read by the server and 2 bytes (1 word, VW 5) is written to the server.

### Data Transfer direction:

Read:Local ← RemoteWrite:Local → Remote

	.cion.	L(S7	Client of172,16.202.1	.4)						
ocal	Pro	pert	ies (Client)							
т	SAP:	20	.00							
emo	te P	rope	erties (Server)							
-	13	SAP	20.00	_						
IP	Addr	ess	172. 16.202. 14	_						
atat	trans	for								
ID	unana	nei	Address (Local)		Length (Bytes)	Direction		Address (Remote)		Length (Bytes)
1	VB	*	0	4		<-	VBO		4	
2	VB	*	5	2		->	VB5		2	

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Page 56 8/22/2018



Create the program by receiving the analog value and the input frequency from the server and by sending an input frequency to the server.

Parameterize the analog network inputs to receive the values. Enter the local addresses which are assigned in the table for data transfer.





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At the end create the parameter VM assignment and specify in the table for data transfer that the input frequency is written to VW 5 of the server.

The settings for a master / master communication have now been preset and the functions are available.



Page 58 8/22/2018



This example uses two LOGO! Basic devices of which one functions as master and the other as slave.

Select *Tools – Transfer – Configure Master/Slave Mode* and set the addresses and the mode of the devices.

(The LOGO! Basic devices have to be connected to the computer)

File Edit Format View	Took	Window Help				
Image: State	-14	Transfer Determine LOGO! Select Hardware	F2 Ctrl+H Ctrl+Minus		PC -> LOGO! Ctr LOGO! -> PC Ctr Start LOGO! Stop LOGO!	
<sup>a</sup> Add New Diagram <sup>™</sup> Master-slave commur	New Diagram       Simulation         ster-slave commune       Simulation         Simulation Parameters       Simulation Parameters         Image: Simulation Parameter Parameter Parameters       Simulation Parameter VM Mapping         Options       Options		F3		Synchronize clock with EM Show FW version Clear User Program and Password Upload Data Log Configure Network Address	
					Set Clock Summer time/Winter time	
			V0.0		NTP Settings Set LOGO! TD Power-on Screen Access control Hours counter VO Status Diagnostic	
					Dynamic server IP filters	

Now create a program. To use inputs and outputs (analog or digital) form the basic device that has been defined as slave, select the functions under *Network* in the instruction tree.

Select a network input or output (analog or digital) and parameterize as follows

For example a digital network input:

Select *Remote device* and enter the IP address of the slave. Depending on the used device, the *Device type* has to be set to the <device version> Slave

🖗 NII [Network input]	×
Parameter Comment	
Parameter:	
Read value from	
<ul> <li>Local variable memory (VM)</li> </ul>	
Remote device	
<ul> <li>Diagnostic</li> </ul>	
Remote device	
Device/IP address: IP address	*
IP: 172. 16.202. 2	
Device type: LOGO! 8.FS4 Sla	ve 👻
Block type:	
Block number:	1 🖶 🗄
	OK Cancel Help







After setting all inputs and outputs of the slave device, the inputs or outputs are displayed in green. Additionally, the IP addresses and used device versions are displayed near to the input or output block.



## LOGO! 8 in detail part 4 - Tasks and features Thank you for your attention!





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