DIOS Simple HMI (NOVAKON) Teaching

Boot main screen: There are 8 buttons on it. Click on the input component to be tested, the upper right pull-down selector, select the slot position where the DIO component is installed, and press the START button. At this time, when the external changes, the indicator light and the meter on the screen will change.



Click on the output component to be tested, the upper right pull-down selector, select the slot position where the DIO component is installed, press the START button, press the switch on the screen or change the value of the slide to the LED on the IO card. The light or external device will change.



Use the NOVAKON HMI editing software iFACE Designer to design the DIOS Simple HMI (NOVAKON) teaching display system. The teaching content only lists the relevant settings and code of this topic, and hopes to get started quickly. Students who use this course must have experience with NOVAKON iFACE Designer.

- A. set the PLC connection settings:
 - 1. Add Node under Link 1, change Port to your current connected and select MODBUS as the controller, the communication interface is RS485, and the communication parameter is 9600,E,8,1.

	X
(Internet in the second	
Communicator Port Setting	Link
Add Link Delete Link	Enabled
Add Node Delete Node	Display Name: Link 1 Port: COM3
□ I Link 1 (1-to-1)	Link ID: LC1 HMI Station ID: 0
DIOS1	Link Type: 1-to-1 (Direct Link) Data Refresh Rate: 30 msec 🕞
	_ Select Controller
	Vendor Model
	Jector KEYENCE Koyo Lust MKS Mitsubishi Modbus ASCII Slave Modbus ASCII Slave
	Interface: RS485 * Baud rate: 9600 * Parity: EVEN * Data bits: 8 * Stop bits: 1 *
	ОК

2. The node settings are as follows: The default value of the DIOS station number is 99.

Communicator Port Setting	Node Setting
Add Link Delete Link	🖉 Enabled
Add Node Delete Node	Display Name: DIOS1
□ □ Link 1 (1-to-1)	Advanced Setting:
	Command Delay: 0 msec
	Station No.: 99 💎 🗹 Set to default station
	Retry: 3
	Timeout : 500 msec

Та	gs System	Information Tags	System Control	Tags Recipe	Tags
	Tag Name	Connector	Туре	Address	Comment
1	L01	Link 1	INT(16)	99-FN6HR2	
2	L02	Link 1	INT(16)	99-FN6HR3	
3	L03	Link 1	INT(16)	99-FN6HR4	
4	L04	Link 1	INT(16)	99-FN6HR5	
5	L05	Link 1	INT(16)	99-FN6HR6	
6	L06	Link 1	INT(16)	99-FN6HR7	
7	L07	Link 1	INT(16)	99-FN6HR8	
8	L08	Link 1	INT(16)	99-FN6HR9	
9	L09	Link 1	INT(16)	99-FN6HR10	
10	L10	Link 1	INT(16)	99-FN6HR11	
11	L11	Link 1	INT(16)	99-FN6HR12	
12	L12	Link 1	INT(16)	99-FN6HR13	
13	L13	Link 1	INT(16)	99-FN6HR14	
14	L14	Link 1	INT(16)	99-FN6HR15	
15	L15	Link 1	INT(16)	99-FN6HR16	
16	L16	Link 1	INT(16)	99-FN6HR17	

B. Establish external connection labels (L01~L16), corresponding to 16 addresses of the external DIOS.

C. Establish internal use labels

17	IDX	InternalMemory	INT(16)	@100	
18	START	InternalMemory	INT(16)	@101	=
19	D01	InternalMemory	Bit	@102.0	
20	D02	InternalMemory	Bit	@103.0	
21	O01	InternalMemory	INT(16)	@104	
22	O02	InternalMemory	INT(16)	@105	
23	101	InternalMemory	INT(16)	@108	
24	102	InternalMemory	INT(16)	@109	
25	Al01	InternalMemory	INT(16)	@110	
26	AI02	InternalMemory	INT(16)	@111	
27	AV01	InternalMemory	INT(16)	@112	
28	AV02	InternalMemory	INT(16)	@113	-

- 1. IDX: used to specify the card location, which can be used for teaching purposes.
- 2. START: The start or end of the test is switched.
- 3. D01, D02: Convert to bit type and provide indicator light.
- 4. IO1, IO2: Input temporary storage label, provide instrument and numerical display.
- 5. O01, O02: Output temporary storage label, which is changed by the behavior of the screen component to provide output.
- 6. AI01, AI02: Convert current value for current meter.
- 7. AV01, AV02: Convert voltage value and provide voltage meter.

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D. A total of 9 screens are planned: one main menu screen and 8s component screens (one board and eight components).



E. The main screen has 8 function keys: labeled DIO-2DI, DIO-2RO, DIO-2AI, DIO-ARO, DIO-2AV, DIO-2KT, DIO-NTC, DIO-PT3, used to switch to different DIOS The display of the component. In order to facilitate the USB transfer of the compiled data, a function key (return to the BIOS) is made. If the Ethernet is

	DIOS	DEMC	0 V1.0	
	K-LINE AUTOMATION CC)., LTD. CON	13:9600,8,E,1 ID:99	
	DIO-2DI		DIO-2RO	
	DIO-2AI		DIO-ARO	
	DIO-2AV		DIO-2KT	
	DIO-NTC		DIO-PT3	
6. 0. 0.	©.		201	8/07/06 09:46

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used for transmission, the button is not needed.

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F. DIOS display screen is divided into two types of input and output. Each screen has two graphic components, two numerical display components, a pull-down menu IDX (values 0 to 8), an alternate button START, and a function. Key MAIN (back to main screen).



1. Input screen: The component (indicator, meter, numerical display) source label comes from I01, I02; some displays need to use unit-converted labels such as D01, D02, AI01, AI02, AV01, AV02. Attention! The analog display shows the unit conversion, decimal point, and value range setting of the component.



2. Output screen: The component (button, scroll axis, numerical display) source tag interacts with O01 and O02.



- G. Three macros: INIT (turn on output input), LOOP_IN (loop of input components), LOOP_OUT (loop of output components).
 - 1. INIT: Initialize component contact IDX, test enable START.

Ma	acro Name: INIT
1	#START=0
2	#IDX=0

2. LOOP_IN: When START=1 and IDX<>0, the IO cards (L01 to L16) specified by IDX are read, and the values are placed in tags I01 and I02 and converted into different units.

Macro Name: LOOP IN	19 #I02=#L12
	20 elseif #IDX==7 then
1 if #START==1 then	21 #I01=#L13
2 if #IDX==1 then	22 #I02=#L14
3 #I01=#L01	23 elseif #IDX==8 then
4 #I02=#L02	24 #I01=#L15
5 elseif #IDX==2 then	25 #I02=#L16
6 #I01=#L03	26 end
7 #I02=#L04	27 if #IDX>=1 then
8 elseif #IDX==3 then	28 if #IDX<=8 then
9 #I01=#L05	29 #D01=#I01ValueToBool
10 #I02=#L06	30 #D02=#I02ValueToBool
11 elseif #IDX==4 then	31 #AV01=#I01/4VoltageUnitTransfer
12 #I01=#L07	32 #AV02=#I02/4VoltageUnitTransfer
13 #I02=#L08	33 #AI01=#I01/2CurrentUnitTransfer
14 elseif #IDX==5 then	34 #AI02=#I02/2CurrentUnitTransfer
15 #I01=#L09	35 end
16 #I02=#L10	36 end
17 elseif #IDX==6 then	37 end
18 #I01=#L11	38

3. LOOP_OUT: When START=1 and IDX<>0, write the values of labels O01 and O02 to the IO cards (L01 to L16) specified by IDX.

Macro Name: LOOP OUT	
	14 elseif #IDX==5 then
1 if #START==1 then	15 #L09=#O01
2 if #IDX==1 then	16 #L10=#O02
3 #L01=#O01	17 elseif #IDX==6 then
4 #L02=#O02	18 #L11=#O01
5 elseif #IDX==2 then	19 #L12=#O02
6 #L03=#O01	20 elseif #IDX==7 then
7 #L04=#O02	21 #L13=#O01
8 elseif #IDX==3 then	22 #L14=#O02
9 #L05=#O01	23 elseif #IDX==8 then
10 #L06=#O02	24 #L15=#O01
11 elseif #IDX==4 then	25 #L16=#O02
12 #L07=#O01	26 end
13 #L08=#O02	27 end

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- H. Macro Management: Different screens have different macro requirements.
 - 1. The [Open] macro of the input component screen selects INIT, and the [Loop] macro selects LOOP_IN.

Macro Manage	er	×
Screen Name	ID	Open
Global	N/A 1	[INIT ~]
DIO-2DI DIO-2RO DIO-2AI DIO-ARO	2 3 4 5	#START=0 #IDX=0
DIO-2AV DIO-2KT DIO-NTC DIO-PT3	6 7 8 9	Preview: INIT Edit
		LOOP_IN ·
		100ms ·
		if #START==1 then if #IDX==1 then #I01=#L01 #I02=#L02
		Preview: LOOP_IN Edit

2. The [Open] macro of the output component screen selects INIT, and the [Loop] macro selects LOOP_OUT.

😡 Macro Manage	er	×
Screen Name	ID	Open
Global	N/A 1	INIT *
DIO-2DI DIO-2RO DIO-2AI DIO-2AI	2 3 4 5	#START=0 #IDX=0
DIO-ARO DIO-2AV DIO-2KT DIO-NTC	6 7 8	Preview: INIT Edit
DIO-PT3	9	
		100ms ·
		if #START==1 then if #IDX==1 then #L01=#O01 #L02=#O02
		Preview: LOOP_OUT Edit

I. Completed.