

## BENSHAW ETHERNET/IP

How to Configure the Benschaw Ethernet Adapter for EthernetIP and setting up a Generic Ethernet Device in Rockwell-Automation Studio5000 programming software (H2, H2P, S and GM2 Series):

1. Reference the “Instructional Manual” supplied with the ethernet communication adapter and ensure that the adapter is properly installed per the instructions. You can also find this manual at [www.benschaw.com/motor-control-solutions/resources/documents/](http://www.benschaw.com/motor-control-solutions/resources/documents/) under the “Manuals” tab – “Low Voltage Variable Frequency Drives”

### H2 Series H2 Ethernet/IP & Modbus-TCP – Instruction Manual

PDF – English (Click to download)

### S/SW Series VFD Ethernet/IP and Modbus-TCP – Instruction Manual

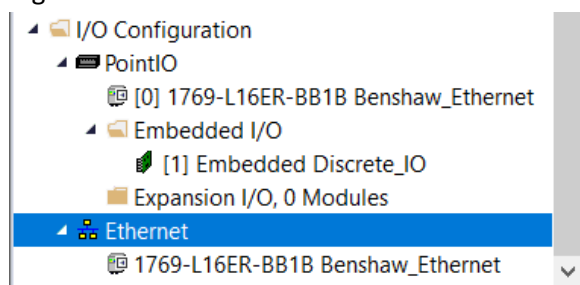
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### GM2 Series VFD Ethernet/IP and Modbus-TCP – Instruction Manual

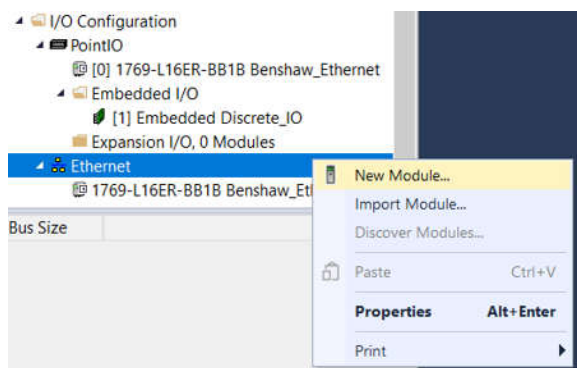
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2. Use a Cat 5e or better cable to connect the Benschaw Ethernet Adapter to the control network.
3. Open Rockwell Automation Studio 5000 software, then open the appropriate program file.
  - a. In the programming tree, under the I/O Configuration (Folder)

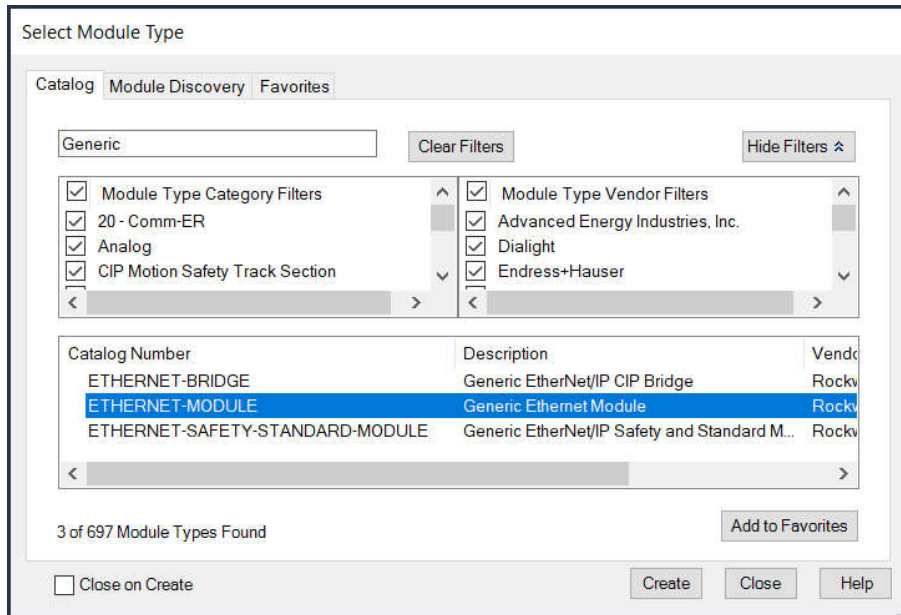
- i. Right Click “Ethernet”



- ii. Then select “New Module”



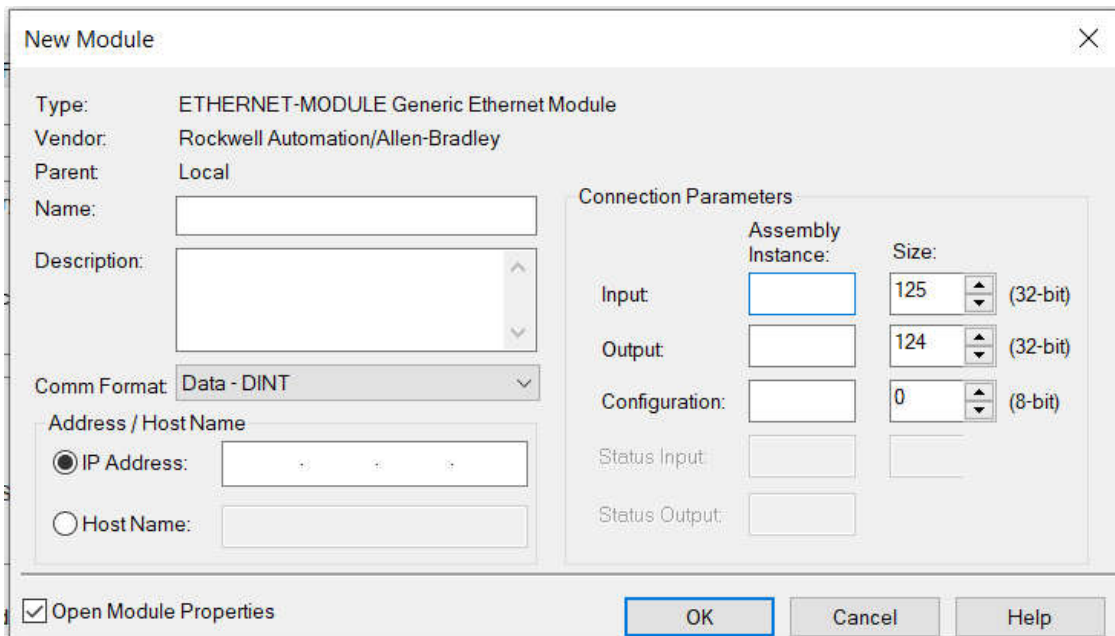
iii. Search “Generic” in the search window:



iv. Select “Ethernet-Module: Generic Ethernet Module” and Select “Create” in the lower right-hand corner.

Catalog Number	Description	Vendor	Category
ETHERNET-BRIDGE	Generic EtherNet/IP CIP Bridge	Rockwell Aut...	Communication
ETHERNET-MODULE	Generic Ethernet Module	Rockwell Aut...	Communication
ETHERNET-SAFETY-STANDARD-MODULE	Generic EtherNet/IP Safety and Standard M...	Rockwell Aut...	Safety,Other

v. The “New Module” window will appear.



vi. Enter the following information:

**New Module**

Type: ETHERNET-MODULE Generic Ethernet Module  
Vendor: Rockwell Automation/Allen-Bradley  
Parent: Local

Name: Benshaw\_VFD

Description: Benshaw H2, H2P, S, SW, GM2 EthernetIP communication card add-on.

Comm Format: Data - INT

Address / Host Name

IP Address: 192 . 168 . 1 . 120

Host Name:

**Connection Parameters**

	Assembly Instance:	Size:	
Input:	148	8	(16-bit)
Output:	128	8	(16-bit)
Configuration:	1	0	(8-bit)
Status Input:			
Status Output:			

Open Module Properties

OK Cancel Help

1. "Name" – How you would like the device to appear in your program tree.
2. "Comm Format" – This needs to be set to "INT"
3. Insert the desired IP Address – The Ethernet Adapter IP address will need to match (*Refer to CM-10 through CM-13 on the drive keypad – see below for more details*).
4. Assembly Instance – This refers to the "Instance" that is used, please refer to the chart Page XXX.
5. Set the Configuration to "1" under Assembly Instance and "0" under Size.

The Benshaw VFD will need to be set to communicate to the controls network by the following parameter changes:

<b>H2 &amp; H2P Series VFD</b>			
<i>Code #</i>	<i>Parameter Name</i>	<i>Setpoint</i>	<i>Description</i>
DRV-06	Command Source	4	"Fieldbus"
DRV-07	Freq. Ref. Source	7	"Fieldbus"
COM-10	Opt Parameter1	192	1st Octet of assigned IP Address
COM-11	Opt Parameter2	168	2nd Octet of assigned IP Address
COM-12	Opt Parameter3	1	3rd Octet of assigned IP Address
COM-13	Opt Parameter4	120	4th Octet of assigned IP Address
COM-14	Opt Parameter5	255	1st Octet of Subnet Mask
COM-15	Opt Parameter6	255	2nd Octet of Subnet Mask
COM-16	Opt Parameter7	255	3rd Octet of Subnet Mask
COM-17	Opt Parameter8	0	4th Octet of Subnet Mask
COM-18	Opt Parameter9	192	1st Octet of Gateway IP Address
COM-19	Opt Parameter10	168	2nd Octet of Gateway IP Address
COM-20	Opt Parameter11	1	3rd Octet of Gateway IP Address
COM-21	Opt Parameter12	10	4th Octet of Gateway IP Address
COM-23	Opt Parameter 14	11	CIP Input Instance
COM-24	Opt Parameter 15	11	CIP Output Instance
COM-30	Para. Status Number	8	Automatically set according to CIP Input Instance.
COM-31	Para Status-1	000E	Operation Status * Refer to Instructional Manual *
COM-32	Para Status-2	000F	Fault Information * Refer to Instructional Manual *
COM-33	Para Status-3	0009	Output Current * Refer to Instructional Manual *
COM-34	Para Status-4	000A	Output Frequency *Refer to Instructional Manual *
COM-35	Para Status-5	000C	DC Link Frequency * Refer to Instructional Manual *
COM-36	Para Status-6	0010	Input Terminal Information * Refer to Instructional Manual *
COM-37	Para Status-7	0011	Output Terminal Information * Refer to Instructional Manual *
COM-38	Para Status-8	0015	I2 Input Value (Current) * Refer to Instructional Manual *
COM-50	Para. Control Number	8	Automatically set according to CIP Output Instance.
COM-51	Para Control-1	0005	Command Frequency * Refer to Instruction Manual *
COM-52	Para Control-2	0006	Operation Command * Refer to Instruction Manual *
COM-53	Para Control-3	-	-
COM-54	Para Control-4	-	-
COM-55	Para Control-5	-	-
COM-94	Comm-Update	1	Set to "1" to save parameters.
IN-71	Input Fun. Group	17	2nd Source * Refer to Instruction Manual *
BAS-01	Basic Fun. Gr-01	2	2nd Command Source * Refer to Instruction Manual *
BAS-02	Basic Fun. Gr-02	2	2nd Command Freq. * Refer to Instruction Manual *

Refer to Pages: 277-291 in the "RSi H2 Series Variable Frequency Drive: Instructional Manual"  
Document #: 890053-00-00

NOTE<sup>1</sup>: After setting COM-23 and COM-24, you must update the Comm Parameters with COM-94. Once complete the remaining parameters will become available.

NOTE<sup>2</sup>: Digital Input "P7" will switch the drive from Communication Controls to Local Controls. For Keypad Control, set BAS-01 to "00" and BAS-02 to "01".

NOTE<sup>3</sup>: For "Auto-Restart" after fault, refer to Pages 98-100 in the "RSi H2 Series Variable Frequency Drive: Instructional Manual" Document #: 890053-00-00.

**S & SW Series VFD**

<i>Code #</i>	<i>Parameter Name</i>	<i>Setpoint</i>	<i>Description</i>
drv	Command Source	4	"Fieldbus"
Frq	Freq. Ref. Source	8	"Fieldbus"
CM.10	Opt Parameter1	192	1st Octet of assigned IP Address
CM.11	Opt Parameter2	168	2nd Octet of assigned IP Address
CM.12	Opt Parameter3	1	3rd Octet of assigned IP Address
CM.13	Opt Parameter4	120	4th Octet of assigned IP Address
CM.14	Opt Parameter5	255	1st Octet of Subnet Mask
CM.15	Opt Parameter6	255	2nd Octet of Subnet Mask
CM.16	Opt Parameter7	255	3rd Octet of Subnet Mask
CM.17	Opt Parameter8	0	4th Octet of Subnet Mask
CM.18	Opt Parameter9	192	1st Octet of Gateway IP Address
CM.19	Opt Parameter10	168	2nd Octet of Gateway IP Address
CM.20	Opt Parameter11	1	3rd Octet of Gateway IP Address
CM.21	Opt Parameter12	10	4th Octet of Gateway IP Address
CM.23	Opt Parameter 14	11	CIP Input Instance
CM.24	Opt Parameter 15	11	CIP Output Instance
CM.30	Para. Status Number	8	Automatically set according to CIP Input Instance.
CM.31	Para Status-1	000E	Operation Status * Refer to Instructional Manual *
CM.32	Para Status-2	000F	Fault Information * Refer to Instructional Manual *
CM.33	Para Status-3	0009	Output Current * Refer to Instructional Manual *
CM.34	Para Status-4	000A	Output Frequency * Refer to Instructional Manual *
CM.35	Para Status-5	000C	DC Link Frequency * Refer to Instructional Manual *
CM.36	Para Status-6	0010	Input Terminal Information * Refer to Instructional Manual *
CM.37	Para Status-7	0011	Output Terminal Information * Refer to Instructional Manual *
CM.38	Para Status-8	0015	I2 Input Value (Current) * Refer to Instructional Manual *
CM.50	Para. Control Number	8	Automatically set according to CIP Output Instance.
CM.51	Para Control-1	0005	Command Frequency * Refer to Instruction Manual *
CM.52	Para Control-2	0006	Operation Command * Refer to Instruction Manual *
CM.53	Para Control-3	-	-
CM.54	Para Control-4	-	-
CM.55	Para Control-5	-	-
CM.94	Comm-Update	1	Set to "1" to save parameters.
IN.69	Input Fun. Group	15	2nd Source * Refer to Instruction Manual *
BA.01	Basic Fun. Gr-01	2	2nd Command Source * Refer to Instruction Manual *
BA.02	Basic Fun. Gr-02	2	2nd Command Freq. * Refer to Instruction Manual *

Refer to Pages: 241-252 in the "RSi S Series and RSi SW Series Variable Frequency Drive: Instructional Manual" Document #: 890049-07-00

**NOTE<sup>1</sup>:** After setting COM-23 and COM-24, you must update the Comm Parameters with COM-94. Once complete the remaining parameters will become available.

**NOTE<sup>2</sup>:** Digital Input "P5" will switch the drive from Communication Controls to Local Controls. For Keypad Control, set BA.01 to "00" and BA.02 to "01".

**NOTE<sup>3</sup>:** For "Auto-Restart" after fault, refer to Pages 98-100 in the "RSi S Series and RSi SW Series Variable Frequency Drive: Instructional Manual" Document #: 890053-00-00.

GM2 Series VFD			
Code #	Parameter Name	Setpoint	Description
drv	Command Source	4	"Fieldbus"
Frq	Freq. Ref. Source	8	"Fieldbus"
CM.10	Opt Parameter1	192	1st Octet of assigned IP Address
CM.11	Opt Parameter2	168	2nd Octet of assigned IP Address
CM.12	Opt Parameter3	1	3rd Octet of assigned IP Address
CM.13	Opt Parameter4	120	4th Octet of assigned IP Address
CM.14	Opt Parameter5	255	1st Octet of Subnet Mask
CM.15	Opt Parameter6	255	2nd Octet of Subnet Mask
CM.16	Opt Parameter7	255	3rd Octet of Subnet Mask
CM.17	Opt Parameter8	0	4th Octet of Subnet Mask
CM.18	Opt Parameter9	192	1st Octet of Gateway IP Address
CM.19	Opt Parameter10	168	2nd Octet of Gateway IP Address
CM.20	Opt Parameter11	1	3rd Octet of Gateway IP Address
CM.21	Opt Parameter12	10	4th Octet of Gateway IP Address
CM.23	Opt Parameter 14	11	CIP Input Instance
CM.24	Opt Parameter 15	11	CIP Output Instance
CM.25	Opt Parameter 16	0	RAPIEnet Disable
CM.30	Para. Status Number	8	Automatically set according to CIP Input Intance.
CM.31	Para Status-1	000E	Operation Status * Refer to Instructional Manual *
CM.32	Para Status-2	000F	Fault Information * Refrer to Instructional Manual *
CM.33	Para Status-3	0009	Output Current * Refer to Instructional Manual *
CM.34	Para Status-4	000A	Output Frequency *Refer to Instructional Manual *
CM.35	Para Status-5	000C	DC Link Frequency * Refer to Instructional Manual *
CM.36	Para Status-6	0010	Input Terminal Information * Refer to Instructional Manual *
CM.37	Para Status-7	0011	Output Terminal Information * Refer to Instructional Manual *
CM.38	Para Status-8	0015	I2 Input Value (Current) * Refer to Instructional Manual *
CM.50	Para. Control Number	8	Automatically set according to CIP Output Intance.
CM.51	Para Control-1	0005	Command Frequency * Refer to Instruction Manual *
CM.52	Para Control-2	0006	Operation Command * Refer to Instruction Manual *
CM.53	Para Control-3	-	-
CM.54	Para Control-4	-	-
CM.55	Para Control-5	-	-
CM.94	Comm-Update	1	Set to "1" to save parameters.
IN.69	Input Fun. Group	15	2nd Source * Refer to Instruction Manual *
BA.04	Basic Fun. Gr-04	2	2nd Command Source * Refer to Instruction Manual *
BA.05	Basic Fun. Gr-05	4	2nd Command Freq. * Refer to Instruction Manual *

Refer to Pages: 191-200 in the "RSi GM2 Series Variable Frequency Drive: Instructional Manual"  
Document #: 890054-00-00

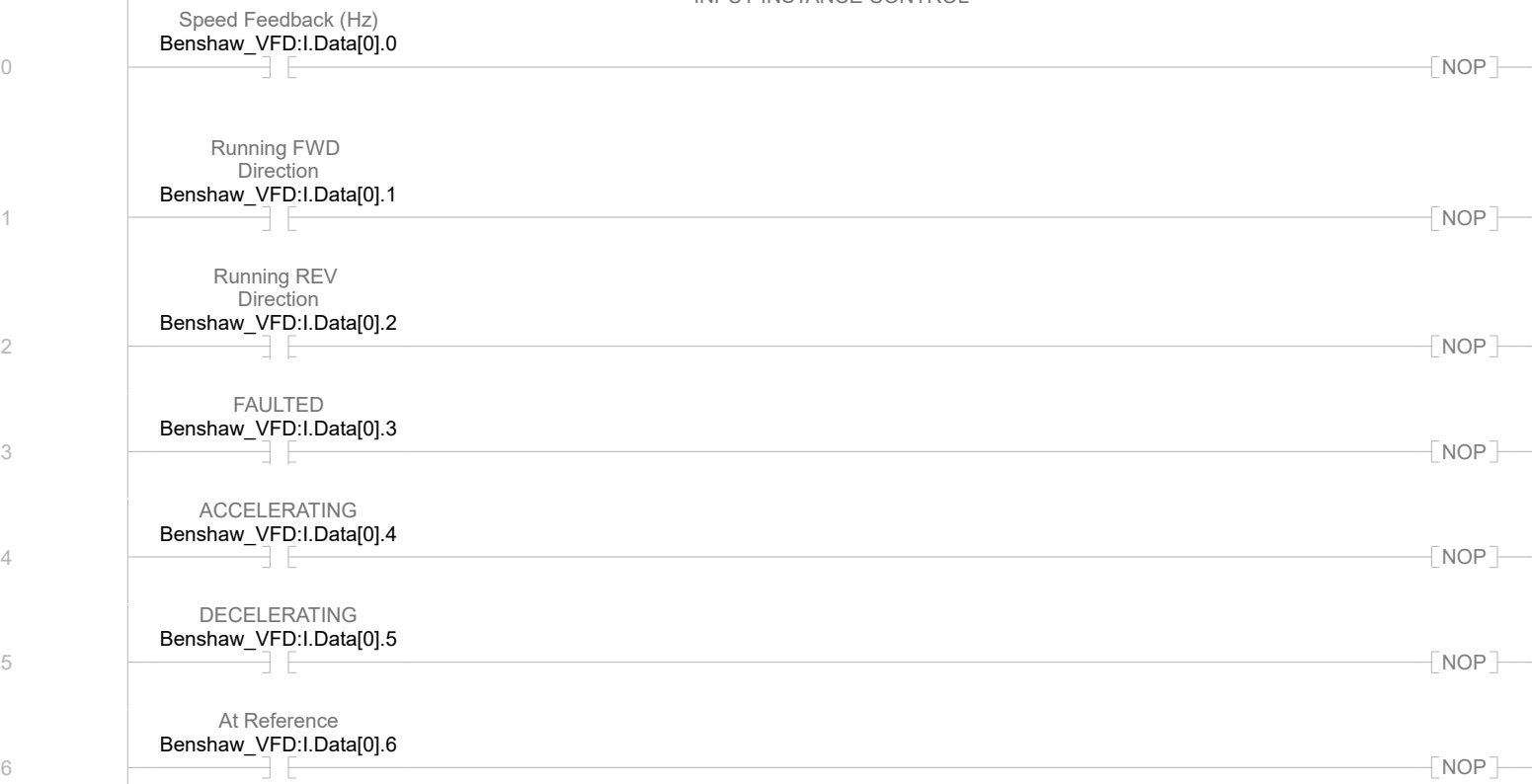
NOTE<sup>1</sup>: After setting COM-23 and COM-24, you must update the Comm Parameters with COM-94. Once complete the remaining parameters will become available.

NOTE<sup>2</sup>: Digital Input "P5" will switch the drive from Communication Controls to Local Controls. For Keypad Control, set BA.04 to "00" and BA.05 to "01".

NOTE<sup>3</sup>: For "Auto-Restart" after fault, refer to Pages 66-67 in the "RSi GM2 Series Variable Frequency Drive: Instructional Manual" Document #: 890054-00-00.

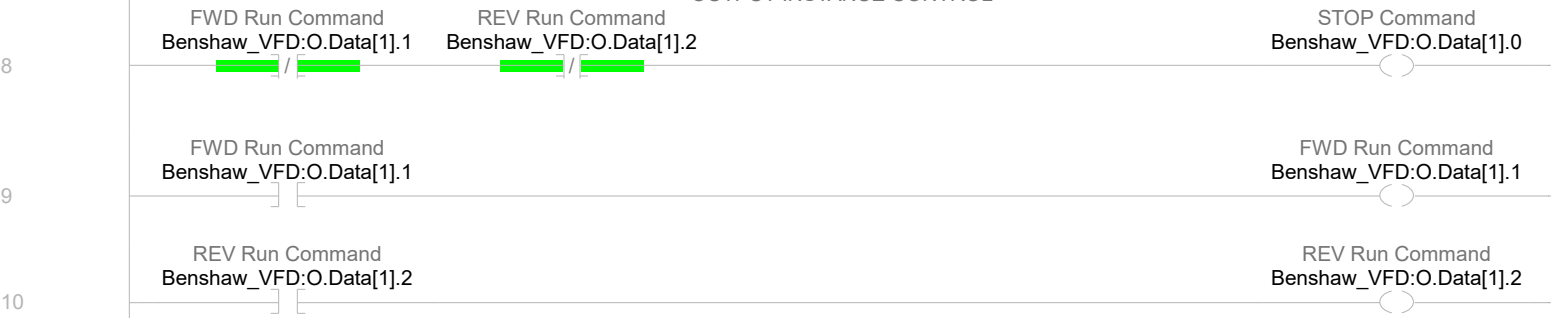
# SAMPLE CODE

## INPUT INSTANCE CONTROL



Speed Feedback (Hz)	
<b>DIV</b>	
Source A	Benshaw_VFD:I.Data[3]
	0
Source B	100
Dest	Drive_Speed_Actual_Hz
	0.0

## OUTPUT INSTANCE CONTROL



Command Speed Reference (Hz)	
<b>MUL</b>	
Source A	Speed_Reference_Hz
	0.0
Source B	100
Dest	Benshaw_VFD:O.Data[0]
	0