

How to use KepSeverEX for Mitsubishi PLC

브릿지웨어

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1. PROGRAM 설치 2. PROGRAM 설정



Mitsubishi Driver 설치 – 관리자 권한

Name	Date modified	5120
KEPServerEX-6.7.1046.0.exe		521,623 KB
	Open	2,386 KB
	😌 Run as administrator	
	Troubleshoot compatibility	
	Pin to Start	
	Share with >	
	Pin to taskbar	
	Restore previous versions	
	Send to >	
	Cut	
	Сору	
	Paste	
	Create shortcut	
	Delete	
	Rename	
	Properties	

• `관리자 권한 (Administrator right)' 으로 설치

- ① 설치 파일을 선택한 상태에서
- ② 오른쪽 마우스버튼 클릭
- ③ "관리자 권한으로 설치" 선택
- 이후 과정은 기본 (Default)설정으로 계속 설치 진행
 - Vertical suite 단계까지 : Typical 선택

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Driver 설치 – Mitsubishi Driver Suite



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Driver 설치 – User Manager Credentials

KEPServerEX 6 Setup - × User Manager Credentials Set password for the Administrator account EX	 User Manager Credentials Skip setting a password at this time' 체크박스 선택
It is recommended that the password be at least 14 characters in length and include a mix of uppercase and lowercase letters, numbers, and special characters. Avoid well-known, easily guessed, or common passwords.	② Next 버튼 클릭하여 설치 완료.
Skip setting a password at this time	
Back Next Cancel	

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1. PROGRAM 설치 2. PROGRAM 설정

Siemens Driver 설정 – KepServerEX Configuration



- Driver 설치가 완료되면 KepServerEX Administration이 Service로 등록되며, System Tray의 아이콘을 통해 억세스할 수 있다.
- Driver의 설정은 KepServerEX의
 'Configuration'어플리케이션을 통해 구 성한다
 - 1 시스템 트레이의
 아이콘을 선 택한 후 오른쪽 마우스 버튼 클릭
 - ② 'Configuration' 메뉴 실행



Driver 설정 – 새 프로젝트 파일 생성

ex.	KEPServerEX 6 Configuration [Co	onnected to Runtime]		● 새 프루젠트 파잌 생성
File	Edit View Tools Runtime	Help		· 데 프 ㅋ 프 퍼 곧 ㅎㅎㅎ
	New Ctrl+N	1		: File 베뉴의 New 영영 설행
	Open Ctrl+O		Channel Name /	· · · · · · · · · · · · · · · · · · ·
	Save Ctrl+S		Click to add a channel.	
	Save As F12			
	Import CSV			
	Export CSV			
	Empty File List			
	Exit			
-		,		

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Driver 설정 – Channel 추가

 KEPServerEX 6 Configuration [Connected to Runtime File Edit View Tools Runtime Help Edit View Tools Runtime Help Project Connectivity Click to add a channel. 	2] 1 REC Channel Name Channel.	 Channel 추가 'click to add a channel' 텍스트를 클릭 하면 서버 리스트 화면이 표시. 연결하고자 하는 서버 항목을 선택한 후 Next 버튼을 클릭.
Add Channel Select the type of chan Select the type of chan ABB Totalflow Keyence KV Ethemet KraussMaffei MC4 Ethe Lufkin Modbus Serial Memory Based Mettler Toledo Serial Micro DCI Mitsubishi Ethemet Mitsubishi Ethemet Mitsubishi FX Mitsubishi FX Mitsubishi Serial Modbus ASCII Serial Modbus Slave RTU Serial Modbus Sl	Wizard nel to be created: 2 emet et Control Co	3 ≝ or ≕ Channel 8 ≣ ध ਖ 3

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Driver 설정 – Channel : Network adapter 설정

 ✔ Add Channel Wizard Specify the name of a network adapter to bind or allow the OS to select the default. Network Adapter: Default 	 Channel 설정 – Network adapter : PLC와 통신할 네트워크 어댑터를 리스 트 내에서 지정 이후 과정은 디폴트로 설치 진행
Next Cancel	

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Driver 설정 – Device 추가 및 설정 : Device Type 지정

 않 KEPServerEX 6 Configuration [Untitled *] File Edit View Tools Runtime Help 	 ✓ ▲	• Device ① `(② D ③ @	추가 Click to add a device' 클릭. Device name 설정 연결하고자 하는 Device Type을 리스 특 가운데에서 선택
 Add Device Wizard Specify the identity of this obj Name: 	ect. Select the specific type of de communications in use. Model: A Series A Series Q Series FX3U QnA Series L Series iQ-F Series iQ-F Series iQ-R Series	rd evice associated with this ID. Options depend on the type of	
		Next Cancel	

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Driver 설정 – Device 추가 및 설정 : Device ID 설정

	 Device ID PLC_IP:N0:255" (Network 0, PC#
Specify the device's driver-specific station or node. ID: 255.255.255.255:N <net number="">:<pc number=""></pc></net>	255) 형식으로 입력
Specify the device's driver-specific station or node. < 설정 예 ID: 192.168.10.10:N0:255	

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Driver 설정 – Device 추가 및 설정 : Auto Demote 설정

÷	Add Device Wizard	×	• Dem	ote 설정 통신 실패 시, 지정된 횟수만큼 연결 시도 후 지정된 시간 동안 통신을 멈
	Automatically remove the	device from the scan due to communication failures.		춘 뒤 통신을 재시도하는 기능.
	Demote on Failure: Disable V Disable	×	-	Network 부하를 줄이는 설정으로, 사 용을 권장.
	Enable	 Add Device Wizard Automatically remove the device from the scan due to communication failures. 	-	의 설정 예 : 3회 통신 실 패 시 10초 동안 통신을 멈춘 뒤 (``demoted"), 다시 통신을 재 시도함.
		Demote on Failure:	2) 원하는 Demote 횟수 및 시간(ms) 설 정
		A Specify how many successive cycles of request timeouts and retries occur before the device is placed off-scan. Timeouts to Demote:	(3	》Port실장단계가지 Default도 실정 진 행
		B Indicate how long, in milliseconds, before scanning is attempted again on a demoted device. Demotion Period (ms): 10000		
		Next Cancel		

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Driver 설정 – Device 추가 및 설정 : Port# 설정

Add Device Wizard	
Indicate the correct protocol to use when communicating with the device. IP Protocol: UDP v (● Port# 설정
Specify the port number to use when communicating with the device. Port Number: 5000 Select the target CPU (central processing unit). For a single CPU, choose Local CPU. CPU: Local CPU V	* PLC와 Ping이 되나, 통신이 되지 않는 이유 90% 이상은 Port# 지정이 잘못된 경우이다. - GX Works2에서 Port를 열어주고 (hexadecimal), KepServer에서는 Port#를 Decimal로 변환하여 입력 다.
Specify the block size in bits to use when reading tags from bit memory. Bit Memory (Word units): 959 © Specify the block size in words to use when reading tags from word memory. Word Memory: 957 ©	 보통 UDP 5000, TCP 5001은 Defa 로 열려 있다. (CPU built-in Ethernet 의 경우는, 1388H(5000) ~ 1391H(5009)외의 른 Port# 사용해야 함)
Specify the maximum number of bits that can be written in a single request. Max Bits per Request: 188 Specify the maximum number of words that can be written in a single request.	
Max Words per Request: 160 Specify if the driver should pad the remaining bytes after the end of a string with NULL characters. Write Full String Length:	
Disable V 🔞	

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Driver 설정 – Tag 설정

Property Groups	Identification		
General	Name	Al1	
Scaling	Description		
	Data Properties		
	Address	D0001	
	Data Type	Short	
	Client Access	Read/Write	
	Scan Rate (ms)	100	
	Data Type Select the format of the incoming tag	data.	
	Defaults	OK Cancel	Help

• Tag 설정

- Option으로, Tag를 생성할 수도 있고, Dynamic Addressing도 가능.
- Dynamic Addressing
 - OPC Client에서Tag Name 대신 실제
 Address 사용 가능.
 - 즉, "Channel1.Device1.AI1" 또는 "Channel1.Device1.D0001" 모두 가능

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Driver 설정 – Tag 설정 예

KEPServerEX 6 Configuration [Untitled *] File Edit View Tools Runtime Help Project Connectivity Channel1 Device1 Tag Name / Address Data Type Scan Rate Scaling Description Al1 D000002.01 Boolean 100 None HiLo Byte Ordering String1 DSH0000200.010 String 100 None LoHi Byte Ordering							
Tag Name Address Data Type Scan Rate Scaling Description Channel1 Channel1 D0000002.01 Boolean 100 None Channel1 Dill D000002.01 Boolean 100 None String1 DSH0000100.010 String 100 None HiLo Byte Ordering String2 DSH0000200.010 String 100 None LoHi Byte Ordering	File Edit View Tools Runtin	K me Help i 🚱 🗔 🖼 🗯	EPServerEX 6 Cor	nfiguration [U	ntitled *]		– – X
	☐ Project ☐ [a] Connectivity ☐ [a] Channel1 ☐ [b] Device1	Tag Name / Call Tag Name / Tag Name / Tag Name / Tag Name / String1 Tag Name / String2	Address D0000001 D000002.01 DSH0000100.010 DSH0000200.010	Data Type Short Boolean String String	Scan Rate 100 100 100 100	Scaling None None None None	Description HiLo Byte Ordering LoHi Byte Ordering

• Tag 설정

- Option으로, Tag를 생성할 수도 있고, Dynamic Addressing도 가능.
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Driver 설정 – Multi Channel 구성

File Edit View Tools Ru	KEPServerEX 6 Confi Intime Help	guration [Connected to Runtime	e] 🗖 🗖 🗙	 Channel당 Thread이므로, 각 PLC를 별 도의 Channel로 구성하는 것을 권장한 다. Channel, Device, Tag는 Copy와 Paste 를 이용하여 쉽게 추가 가능.
Project	Channel Name	 Z Driver Mitsubishi Ethernet Mitsubishi Ethernet 	Connection Ethernet Ethernet	 Channel1을 Copy 한 뒤, 빈 공간을 Right-Click 하여 Paste 하면 Channel1 전체가 복사됨. 이때 Channel Name과 PLC IP Address 만 변경하면, Channel1의 모든 속성 및 Tag list가 전부 Channel2로 복사.



Driver **설정** – Quick Client

File Edit View Tools Runti	KEPServerEX 6 Configu me Help	ation [Connected to Runtime	e] – – ×	 Quick Client 설정이 완료되면 Quick Client를 눌러 통 신 상태를 Monitoring . Quick Client는 Test Tool로, 실제 운영시 에는 KepServer Configuration과 함께
Project	Channel Name	✓ Driver Mitsubishi Ethernet Mitsubishi Ethernet	Connection Ethernet Ethernet	Service로 동작하므로 열어 둘 필요가 없음)

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Driver 설정 – Device Simulation Mode

3	Property Editor	- Channel2.Device1
Property Groups		
General	Name	Device1
Scan Mode	Description	
Timing	Driver	Mitsubishi Ethernet
Auto-Demotion	Model	Q Series
32-Bit Data	Channel Assignment	Channel2
Communications Parameters	ID	192.168.10.10:N0:255
Time and Date Synchronization	Operating Mode	
Redundancy	Data Collection	Enable
	Simulated	Yes
		No
	Simulated Use generic valid OPC data without (ommunicating with the physical device.
	Defaults	OK Cancel Apply Help

• Simulation Mode

 PLC가 연결되지 않은 상태에서, HMI 등에서 작업을 원할 경우, Device Properties 창을 열어Simulation Mode 로 전환하면, 수동으로 Read/Write 가 가능

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GX Works2 – Ethernet Operational Settings

	Module 1	
Network type	Ethernet -	N
Starting I/O No.	0000	
Network No.	1	
Total stations		
Group No.	0	
Station No.	1	
Mode	On line 🗸	
	Operational settings	*
	initial settings	Ethernet operations
	Routing information MNET/10 routing information FTP Parameters E-mail settings Interrupt settings	Communication data code Initial timing Do not wait for OPEN (Communications impossible at STOP time) Always wait for OPEN (Communication possible at STOP time)
		IP address DEC. Input format DEC. IP address 10 10 110 55 C IEEE802.3 IF Enable Write at RUN time 이 곳이 선택되어 있지 않으면, Write 기능이 동작하지 않는다. End Cancel

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Protocol		otocol Open system		Fixed buffer		Fixed buffer communication procedure		Pairing open		Existence confirmation	า	Host station Port No.	Transmission target device IP address	Transmission target device Port No.
UDP	•		۲	Send	•	Procedure exist	•	Disable	•	Confirm	▼	0401	Simultan	FFFF
TCP	•	Unpassive	Ŧ	Send	•	Procedure exist	•	Disable	•	Confirm	▼	0402		
TCP	•	Fullpassive	Ŧ	Send	•	Procedure exist	•	Disable	•	Confirm	▼	0403	192,168, 1, 2	FFFF
	•		۲		•		•		•		▼			
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※ 위 설정은 하나의 예시일 뿐이며, 상세한 내용은 PLC 매뉴얼을 참조

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한다.



Timer second		
Module will operate with default values if setting is	s left blank	
	Setting value	Default value
TCP ULP timer		60
TCP zero window timer		20
TCP resend timer		20
TCP end timer		40

IP assembly timer

Response monitoring timer

Destination existence conformation starting interval

Destination existence conformation interval timer

Destination existence conformation resend

※ 본 예시에서는 3초(500ms*6) 동안 PLC 가 Connection을 유지하며, 그 후 2초 간 격으로 3번 Resend를 해서 응답이 없으면 , port를 release 한다. Port를 release 해야 새로운 connection이 가능하므로, KepServer의 Demotion은 11초보다 길게 설정해야 한다.

In units

×500ms

X500ms

×500ms

X500ms

X500ms

X500ms

×500ms

Times

1200 X500ms

10

60

20

3

6

3

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- Timor collins

GX Works2 – CPU Built-in Ethernet port 설정

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GX Works – Built-in Ethernet port OPEN Settings

Built-in Ethernet Port Open Setting

	Protocol		Open System		TCP Connection	Host Station Port No.	Destination IP Address	Destination Port No.
1	UDP	•	MELSOFT Connection	٠	-			
2	TCP	•	MELSOFT Connection	•	-			
3	UDP	•	MC Protocol	•	-	1386		
4	TCP	•	MC Protocol	•	•	1387		
5	TCP	•	MELSOFT Connection	•	-			
6	TCP	•	MELSOFT Connection	•	•			
7	TCP	•	MELSOFT Connection	•	•			
8	TCP	•	MELSOFT Connection	•	•			
9	TCP	•	MELSOFT Connection	•	•			
10	TCP	•	MELSOFT Connection	•	•			
11	TCP	•	MELSOFT Connection	•	•			
12	TCP	•	MELSOFT Connection	•	•			
13	TCP	•	MELSOFT Connection	•	.			
14	TCP	•	MELSOFT Connection	•	-			
15	TCP	•	MELSOFT Connection	•	-			
16	TCP	•	MELSOFT Connection	•	-			

Host station port No, destination port No: Please input in HEX.

End

Cancel

사용 가능한 port 범위
 <u>- 0401H (1025)</u> ~ 1387H (4999)

×

- 1392H (5010) ~ FFFEH (65534)
- 사용할 수 없는 Port 범위
 - port 1388H(5000) \sim 1391H(5009)

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iQ-R/F 시리즈 port configuration

• GX Works3 Navigation > Parameter > Unit Parameter

letting Item								
Item	Setting							
Own Node Settings								
Parameter Setting Method	Parameter Editor							
- IP Address								
IP Address	192.168.0.1							
Subnet Mask	28 (2012)							
Default Gateway								
Enable/Disable Online Change	Enable All (SLMP)							
Communication Data Code	Binary							
Opening Method	Do Not Open by Program							
External Device Configuration								
External Device Configuration	<detailed setting=""></detailed>							

BridgeWare

iQ-R/F 시리즈 port configuration : CPU Module

 [Navigation window] > [Parameter] > Module model name > [Module Parameter] > [Ethernet Port] > [Basic > Settings] > [Own Node Settings]

Module Parameter Ethernet Port		
Setting Item List	Setting Item	
Input the Setting Item to Search	Item	Setting
	Own Node Settings IP Address IP Address Subnet Mask Default Gateway Communication Data Code CC-Link IEF Basic Setting MODBUS/TCP Settings	192.168.3.250 Binary
⊕-∰ Application Settings	External Device Configuration External Device Configuration Explanation Set the information of the own node such as IP address.	<detailed setting=""></detailed>
Item List Find Result	Check Restore the Default Set	tings Apply

BridgeWare

iQ-R/F 시리즈 port configuration : CPU Module

[Navigation window] > [Parameter] > Module model name > [Module Parameter] >
 [Ethernet Port] > [Basic Settings] > [External Device Configuration] > [Detailed Setting] >
 [Ethernet Configuration (Built-in Ethernet Port)] screen

Ether	net Con	figuration (Built-in Ethernet Port Iguration Edit View Close w) vith Discording the Setting	Close with	Reflecting the S	etting										0.00
-															Module List	
1		Datect Now													Ethernet Selection Find Module My Fat	vorites]
0	onnecte	d Count(Current/Maximum): 1/8				1		-								
	tin	Madel Upper	Communication Mathead	Destand	Fixed Buffer	PLC	L anna		and a later	Sensor/D	wilce			Existence Confirmation	Ethernet Device (General)	
	190.	HUUSE Partie	Contraincación Parchoo	PIDLOCU	Setting	IP Address	Port No.	Address	Name	IP Address	Port No.	Nask	Gateway	Experies Continuation	MELSOFT Connection Module	-
	0	Host Station				192.168.3.250									SLMP Connection Module	+1)
12	1	SEMP Connection Module	SLMP /	101		102.168.3.250	2000							KeepAlive	UDP Connection Module	+1
															Active Connection Module	
		No.t													Unpassive Connection Module	-
_	_														Fullpassive Connection Module	
et 5	Station														MODBUS/TCP Connection Module	-
me	ected Co														🛛 Ethernet Device (Mitsubishi Electric	Corporation
1		SLMP													Ethernet Device (COGNEX)	
															Ethernet Device (Panasonic Industr	rial Devices S
		SLMP Con nection N odula													[Outline] SUMP Connection Module (Specification) Use when specify open method by SUMP	

- Drag and drop "SLMP Connection Module" under "Module List" to the left side of the screen
- Select protocol (TCP or UDP) that matches the other device in "Protocol".
- Set the host station port number (setting range: 1 to 5548, 5570 to 65534) for the "Port No." and the IP address of the target device (only UDP).
- Do not specify 5549 to 5569 for the host station port numbers because these ports are reserved for the system.

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iQ-R/F 시리즈 port configuration

thernet	: Confi	guration Edit View Cl	ose with Discardin	ig the Sett	ting Close wit	h Reflecting the :	Setting	
					Fixed Buffer	PL	c	sor/Dev
	No.	Model Name	Communication Method	Protocol	Send/Receiv e Setting	IP Address	Port No.	MAC Address
-		Host Station				192.168.0.1		
S	1	SLMP Connection Module	SLMP	TCP		192.168.0.1	1024	
S	2	SLMP Connection Module	SLMP	UDP		192.168.0.1	1025	
UDP	3	UDP Connection Module	Broadcast Send	UDP		192.168.0.1	1026	
UDP	4	UDP Connection Module	Broadcast Send	UDP		192.168.0.1	1027	
A	5	Active Connection Module	Predefined Protocol	TCP		192.168.0.1	1028	
A.	6	Active Connection Module	Socket Communicati	TCP		192.168.0.1	1029	
UP	7	Unpassive Connection Module	Predefined Protocol	TCP		192.168.0.1	1030	
EP	8	Fullpassive Connection Module	Predefined Protocol	TCP		192.168.0.1	1031	
4								+

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iQ-R/F 시리즈 port configuration

	No.	Model Name	Port No.	rt No. Subnet Mask		Confirmation
		Host Station				
S	1	SLMP Connection Module				KeepAlive
s	2	SLMP Connection Module				UDP

Thank You!

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기술지원 031-346-1982 support@opchub.com



Thank You!

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