# AtlasCopco

# **MT FOCUS Driver**

V4.0 or higher

Supported version TO

TOP Design Studio



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We would like to thank our customers for using M2I's "Touch Operation Panel (M2I TOP) Series". Read this manual and familiarize yourself with the connection method and procedures of the "TOP and external device".

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Describes how to set up communication for external devices.

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Describes the cable specifications required for connection.

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Check for addresses that can communicate with an external device.



# 1. System configuration

The following driver is "MT FOCUS" of "ATLASCOPCO".

The system configuration with an external device supported by this driver is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
	MT FOCUS		RS-232C	3. TOP communication setting	5. Cable table

■ Connection configuration

 $\boldsymbol{\cdot}$  1:1 (one TOP and one external device) connection

|--|--|



### 2. External device selection

■ Select a TOP model and a port, and then select an external device.

						×
PLC select [	COM21					
Filter : [All]	conzj		~	So	arch :	
Titter . [Alij			↓ ↓	260	Model	I O Vendor
Vendor		Model				
ATLAS COPCO		^ 🌮	POWER FOCUS	5		
TOSHIBA MACHINE	Co., Ltd	80	MT FOCUS			
GREEN POWER						
ROOTECH						
CKD Corporation						
CSCAM						
IDEC Corporation						
HAWE HYDRAULIK						
SEHAN Electools						
TOHO Electronics In	c.					
IAI Corporation						
МКР						
TEMCOLINE Co., Ltd	I.					
I TNMOT		~				
				Back	🏟 Next	X Cancel
Select Device						x
-PLC Setting[ M1	FOCUS ]					
	me : PLC1		_			
Interfa	ice : Computer Li		~			nan Manual
Interfa			~		Co	mm Manual
Interfa Proto	ice : Computer Li col : MT Focus 4				Co	mm Manual
Interfa	ICE : Computer Li col : MT Focus 44	00 Link			Co	mm Manual
Interfa Proto	ancy AND	00 Link				
Interfa Proto	ancy AND	00 Link	~			mm Manual
Interfa Proto	ancy AND ~ TimeOut	00 Link	~			
Interfa Proto <b>Use Redunda</b> Operate Condition : Change Condition :	Computer Li MT Focus 44 AND TimeOut Condition	00 Link	~			
Interfa Proto	Computer Li MT Focus 44 AND TimeOut Condition	00 Link	~			
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Settings			Contents			
ТОР	Model	Check the TOP display	Check the TOP display and process to select the touch model.			
External device	Vendor PLC	Select "AtlasCopco".	Select the vendor of the external device to be connected to TOP. Select "AtlasCopco". Select an external device to connect to TOP.			
		Model	Interface	Protocol		
		MT FOCUS	Computer Link	MT Focus 400 Link		
		,	em configuration in Chapter 1 to nose system can be configured.	see if the external device you want to		



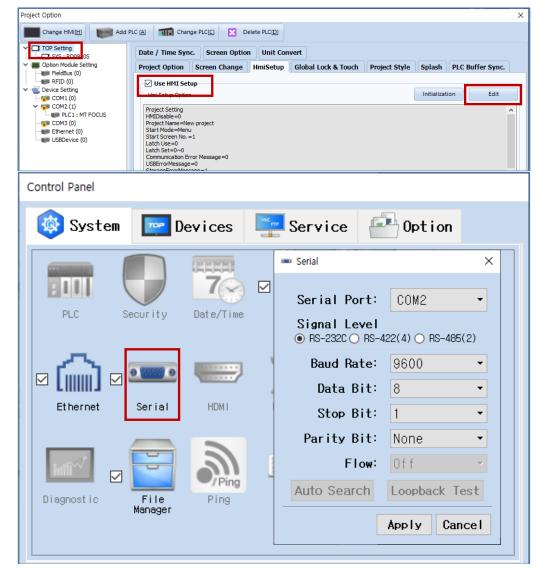
# 3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

#### 3.1 Communication setting in TOP Design Studio

#### (1) Communication interface setting

- [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]
  - Set the TOP communication interface in TOP Design Studio.



Items	ТОР	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	Nor	ne.	

\* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



#### (2) Communication option setting

- [Project > Project Property > Device Setting > COM > "PLC1: POWER FOCUS"]
  - Set the option of AtlasCopco MT FOCUS PLC Series communication driver in TOP Design Studio.

Project Option			×
Change HMI[H] Add	PLC (A) The Change PLC (C) Clette PLC (D)		
TOP Setting Option Module Setting Option Module Setting Fieldbus (0) Cont (0) Option Setting Option Cont (0) Option Setting Opt	PLC Setting[ MT FOCUS ] Alias Name : PLC1 Interface : Computer Link Protocol : MT Focus 400 Link Operate Condition : ND Change Condition : TimeOut Condition Edit Primary Option Decimal Place 0		mm Manual
		Apply	Close

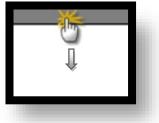
Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External
Protocol	Select "PC Link".	device selection".
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and	
	sending the next command request.	
retry	Retry attempt	
Decimal Place	Input data decimal place	



#### 3.2. Communication setting in TOP

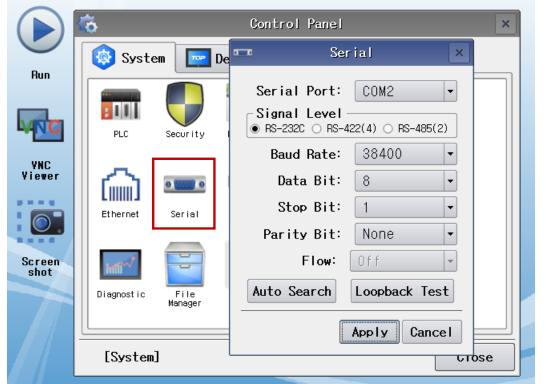
\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



#### (1) Communication interface setting

■ [Main Screen > Control Panel > Serial]



Items	ТОР	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	9600 Fixed		Fixed
Data Bit	8 Fixed		Fixed
Stop Bit	1 Fixed		Fixed
Parity Bit	Nor	ne.	Fixed

\* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



#### (2) Communication option setting

■ [Main Screen > Control Panel > PLC]

6				
			PLC	×
	System	Driver(COM2)	PLC1(MT FOCUS)	•
Run		Interface	Computer Link 💌	
VIET		Protocol	MT Focus 400 Link 💌	
	PLC S	Decimal F	3	
VNC				
Viewe				
	Ethernet			
Scree	en Inffinit			
5110	Diagnostic	1		
	[System]	Diagnostic	2	Apply Cancel
TOPRX - TOP	RX0800S		۵	2021-08-31 03:23:09 PM
tems	Settings			Remarks
nterface	Select "CPU Direct".			Refer to "2. Extern
rotocol	Select "CPU Direct".			device selection"
ïmeOut (ms)	Set the time for the T	OP to wait for a resp	oonse from an external device.	
endWait (ms)	_		ing a response from an external device	e and
	sending the next com	mand request.		
etry	Retry attempt			
Decimal Place	Input data decimal pla			



#### **3.3 Communication diagnostics**

■ Check the interface setting status between the TOP and external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.
- Diagnosis of whether the port communication is normal or not
- Touch "Communication diagnostics" in [Control Panel > PLC].
- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

#### Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

ltems	Contents		Check		Remarks	
System	How to connect the system		OK	NG	1. Containing firmulting	
configuration	Connection cable nam	OK	NG	1. System configuration		
ТОР	Version information	OK	NG			
	Port in use	OK	NG			
	Driver name	OK	NG			
	Other detailed setting	OK	NG			
	Relative prefix	Project setting	OK	NG		
		Communication diagnostics	ОК	NG	2. External device selection 3. Communication setting	
	Serial Parameter	Transmission Speed	ОК	NG		
		Data Bit	OK	NG		
		Stop Bit	OK	NG		
		Parity Bit	OK	NG		
External device	CPU name		OK	NG		
	Communication port r	OK	NG			
	Protocol (mode)	OK	NG			
	Setup Prefix	OK	NG			
	Other detailed settings		OK	NG	4. External device estimat	
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting	
		Data Bit	OK	NG		
		Stop Bit	OK	NG		
		Parity Bit	OK	NG		
	Check address range				6. Supported addresses	
			ОК	NG	(For details, please refer to the PLC vendor's manual.)	



# 4. External device setting

- Refer to the manual of the external device and configure the communication options.



### 5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device. ((The cable diagram described in this section may differ from the recommendations of "**AtlasCopco**")

#### ■ RS-232C (1:1 connection)

СОМ				PLC			
Pin	Signal	Pin	Cable connection	Pin	Signal	Pin	
arrangement*Note 1)	name	number		number	name	arrangement*Note 1)	
1 5	CD	1		1		1 5	
(ÖÖ)	RD	2		3	SD	( )	
	SD	3		2	RD		
6 9	DTR	4		4		6 9	
Based on	SG	5		5	SG	Based on	
communication cable	DSR	6		6		communication cable	
connector front,	RTS	7		connector front,			
D-SUB 9 Pin male	CTS	8	D-SUB 9 Pin i				
(male, convex)		9				(male, convex)	

\*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.



# 6. Supported addresses

#### The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

	Bit Address	Word Address	16 bits	Remarks
DATE	(SYS)0000.00 - (SYS)0002.00	(SYS)0000 – (SYS)0002		*Note 1)
TIME	(SYS)0003.00 - (SYS)0005.00	(SYS)0003 – (SYS)0005		*Note 1)
PNR Program number	(SYS)0006.00	(SYS)0006	L/H	*Note 1)
RES Result string	(SYS)0100.00 - (SYS)0125.00	(SYS)0100 – (SYS)0125		*Note 1)
result string on errors	(SYS)0200.00 - (SYS)0225.00	(SYS)0200 – (SYS)0225		*Note 1)
Torque in step 1-8	-	(SYS)07,11,15,19,23,27,31,35		*Note 3)
holds peak torque.	-	(SYS)0039		*Note 3)
Angle in step 1-8	-	(SYS)09,13,17,21,25,29,33,37		*Note 3)
holds total angle.	-	(SYS)0041		*Note 3)
state				*Note 1)
	(SYS)0043.00	(SYS)0043		*Note 2)
Received BIT	(SYS)0300.00	(SYS)0300		
Torque unit		(SYS)070		

\*Note 1) Cannot be written (Read-only)

\*Note 2) 1 = error

2 = ok

3 = unscrew

4 = cancel

\*Note 3) 32 bit Device