# Installation Instructions **Firmware Upgrade**

J22 and JT33 TDLAS gas analyzers





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## 1 Symbols

## 1.1 Safety symbols

Symbol	Description
	The High Voltage symbol that alerts people to the presence of electric potential large enough to cause injury or damage. In certain industries, high voltage refers to voltage above a certain threshold. Equipment and conductors that carry high voltage warrant special safety requirements and procedures.
	Failure to follow all directions may result in damage or malfunction of the analyzer and/or personnel.
	PROTECTIVE EARTH GROUND - Symbol indicates the connection point of the ground wire from the main power source.
	A sign that alerts people to the presence of visible and invisible radiation. Avoid direct exposure to the beam and to not disconnect the system while active.

## **1.2** Symbols for certain types of information

Structure of Information	Meaning					
WARNING Causes (/consequences) Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.					
▲ CAUTION Causes (/consequences) Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.					
NOTICE Cause/situation Consequences of non-compliance (if applicable) Action/note	This symbol alerts you to situations which may result in damage to property.					

## 2 Overview of the firmware upgrade

This document provides instructions for upgrading the firmware for the J22 and JT33 TDLAS gas analyzers. Maintenance of Endress+Hauser analyzers must be performed only by trained personnel.

Upgrading the analyzer firmware consists of three main tasks:

- Downloading the updated firmware
- Connecting to the controller
- Upgrading the firmware on the device

#### **WARNING**

## Technicians are expected to be trained and follow all safety protocols that have been established by the customer in accordance with the area hazard classification to service or operate the analyzer.

This may include, but is not limited to, toxic and flammable gas monitoring protocols, lockout/tagout procedures, the use of personal protective equipment (PPE) requirements, hot work permits and other precautions that address safety concerns related to the use and operation of process equipment located in hazardous areas.

#### Hardware required

- Laptop computer or equivalent
- Standard Ethernet cable; CAT5E/6 with RJ-45 connector
- Computer with RJ-45 interface
- Web server (enabled; factory setting: ON)

#### Software required

- Supported web browsers:
  - Microsoft Edge
  - Microsoft Internet Explorer 7.x, 8.x, 9.x
  - Mozilla Firefox 4.x, 5.x, 8.x
  - Google Chrome 15.x
- Recommended operating systems:
  - Windows 10
  - Windows XP
- Administrative rights for TCP/IP settings
- JavaScript enabled

If JavaScript cannot be enabled, enter http://192.168.1.212/basic.html in the address line of the web browser for a fully functional, simplified version of the operating menu structure.

#### **Tools required**

3mm hex key

### 2.1 Download the updated firmware

- 1. From the provided link, locate the updated firmware file.
- 2. Download the firmware file to a location on the laptop hard drive.
- 3. Before beginning the firmware upgrade, note the display values on the HMI to use as a reference point when confirming a successful upgrade.

#### 2.2 Connect to the controller

1. Remove the cover from the controller using a 3 mm hex key.



2. Connect the laptop to the controller using an Ethernet cable. Confirm the cable is connected on the Service port - ecdi.



- 3. On the laptop, go to Settings. Enter **Ethernet settings**.
- 4. Under IP settings, click **Edit**.

The Edit IP settings window displays.

- 5. Enter the following information:
  - IP address: 192.168.1.XXX; XXX represents all numerical values except 0, 212, and 255, e.g., 192.168.1.213.
  - Subnet mask: 255.255.255.0
  - Default gateway: 192.168.1.212 or 0.0.0.0.
- 6. Click Save.

### 2.3 Upgrade the firmware

1. On the laptop, enter the web server IP address into the browser: 192.168.1.212. If you have changed the IP address of the web server, use the IP address you assigned.

	Device name:	TDLAS 300 5	00 Concentration:	0.0000 ppmy	Cell gas press.:	0.9705 bar	Endress+Hauser 🖽
	Device tag:	TDLAS Analy	zer Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:	Device ok					
Web server Login User role Enter access	language : code eset access code	j E M.	nglish iintenance ••• Login	•			Î
							A0056885

2. Log in with the default Maintenance password **0000**. If the Maintenance password has been updated, use the updated password for login.

After successful login, the web server displays the **Diagnostics** screen.

	Device name:	TDLAS 300 500	Concentration:	0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖽
	Device tag:	TDLAS Analyzer	Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:	✓ Device ok			Laser temp.:	23.0000	
Measured val	ues Menu	Instrument health state	is Data managem	ient Network	Logging		Logout (Service)
Main menu >	Diagnostics						
Actual dia	gnostics	Ok					
Previous d	iagnostics	0k 🗸					
Oreceties	time for a sector t	04001-04-	12-				
Operating	time from restart	0d00h04m	125				
Operating	time	0d00h08m	45s				
	Diagnostic list	Eve	nt logbook	Device into	rmation		
>	Measured values	Da	ta logging	Spectrum	n plots		
> F	leartbeat Technology	/ Si	mulation				

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#### 3. Click the **Data management** tab.

	Device name:	TDLAS 300 500	Concentration:		0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖾
	Device tag:	TDLAS Analyzer	Select calibr.:		1	Cell gas temp.:	61.9053	
	Status signal:	-Device ok				Laser temp.:	23.0000	
Measured va	lues Menu	Instrument health s	tatus Data manager	nent	Network L	ogging		Logout (Service)
Data manag	ement							
>	Device configuration	n	Logbook	>	Documen	ts		
	Firmware update		SD card					
								4005698

#### 4. Click Firmware update.

	Device name:	TDLAS 300 500	Concentration:	0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖽
	Device tag:	TDLAS Analyzer	Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:				Laser temp.:	23.0000	
Measured val	lues Menu	Instrument health sta	itus Data management	Network	Logging		Logout (Service)
Data manage	ment > Firmwa	ire update					
Select and u	pload file	Verify firmware	Result				
Firmwa	re downlo	ad					
Download	I	i Click here	to select file				
							<b>T</b>
							A005688

- Click the **Download** field and select the saved firmware file on the laptop. Click **Open**. The file name displays in the Download field.
- 6. Click **Ok**.

The buffer wheel displays as the upgrade downloads into the controller. The "Verify Firmware" function runs. The controller begins start up after the firmware download is completed. The HMI displays the updated firmware information and then the system reboots.

## 3 Troubleshooting

Refer to the following section for any issues encountered during or after the firmware update procedure.

#### 3.1 Device connection lost

If the connection to the analyzer is lost (see below), the web server will restart.

Connection with device lost! Connection with device lost! Please try to reconnect.	

Figure 1. Webserver when analyzer connection is unstable or disconnected.

After the analyzer restart is completed, the login screen displays to show the firmware is running successfully.

	Device name:	TDLAS 300 500	Concentration:	0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖪
	Device tag:	TDLAS Analyzer	Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:						
		-					
Web server	r language	i English					
ogin							
liser role		Maintena	000				
03er role		Mantena	nee				
Enter acces	is code	(i)					
			Login				
	Reset access code						

Figure 2: Web server login

To confirm the new firmware version, log in and click **Network**. The Network screen displays the new firmware version.

	Device name:	TDLAS 300 500	Concentration:	0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖽
	Device tag:	TDLAS Analyzer	Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:						
Measured val	ues Menu	Instrument health sta	tus Data managemer	nt Network			Logout (Maintenance)
Network							
Device tag	1	TDLAS Ar	alyzer				
Serial nun	nber	79AFFF1	5000				
Firmware	version	01.05.07					
Extended	order code 1						
Extended	order code 2						1
Extended	order code 3						
ENP versio	DN	2.02.00					
Web serve	er language	i English	v	]			
							•
							40056891

Figure 3: Firmware version information

### 3.2 Firmware non-operational after installation

If the firmware upgrade does not successfully complete, restart the analyzer.

- 1. Log in and click **Menu**, then click **Setup**.
- 2. Click Advanced Setup, then click Administration.
- 3. In the **Device Reset** field, select **Restart device**. Click **Ok**.

	Device name:	TDLAS 300 500	Concentration:	0.0000 ppmv	Cell gas press.:	0.9705 bar	Endress+Hauser 🖽
*	Device tag:	TDLAS Analyzer	Select calibr.:	1	Cell gas temp.:	61.9053	
	Status signal:						
Measured valu	ies Menu	Instrument health st	atus Data manageme	ent Network			Logout (Maintenance)
Main menu >	Setup > Advi	anced setup > Admin	istration				
Device rese	et.	i Restart	device	∽ Ok			
	- C	0-					
U	enne access coue	ĸe	set access tode				
							40056

Figure 4: Analyzer restart

### 3.3 Service contact

For service, refer to our website (https://www.endress.com/contact) for the list of local sales channels in your area.

#### Before contacting service

Before contacting service, prepare the following information to send with your inquiry:

- Analyzer serial number (SN)
- Contact information
- Description of the problem or questions

Access to the information above will expedite the response to technical requests.

www.addresses.endress.com

