

# WebdynPulse

---

## User Manual

# Index

User Manual .....	5
1. Glossary.....	5
2. About this Document.....	6
2.1 Scope .....	6
2.2 Target Audience.....	6
2.3 Product Versions .....	6
2.4 Safety advice .....	6
3. Principles of Operation .....	7
3.1 .....	
Overview Diagram of a Comprehensive Monitoring Solution .....	7
4. Unit Characteristics .....	8
4.1 Technical Characteristics.....	8
4.2 List of Available Interfaces .....	9
4.3 Options and Accessories .....	9
4.3.1 DIN Rail Power Supply .....	9
4.3.2 GSM/GPRS Right-Angled Stub Antenna .....	12
4.3.3 GSM/GPRS Externally Mounted Antenna .....	12
5. Prerequisites .....	13
5.1 Access to the FTP Server .....	13
5.2 Access to the NTP Server .....	14
5.3 Connection via GPRS or Ethernet .....	14
5.3.1 Ethernet Connection.....	14
5.3.2 GPRS Connection .....	14
5.3.3 Managing the PIN Code for the SIM Card .....	14
6. Configuring the Unit .....	16
6.1 Roles of the WebdynPulse Files .....	16
6.1.1 Configuration Files .....	16
6.1.2 Definition Files .....	16
6.2 Initialization .....	17
6.2.1 Configuration via the Built-in Web Server .....	20
6.2.2 Configuration via SMS.....	26

6.3 Setting the Unit Date and Time .....	27
6.4 Connection Modes and Periods .....	28
6.4.1 Manual Connection .....	28
6.4.2 Periodic Automatic Connection .....	29
6.4.3 Automatic Connection at Fixed Times.....	30
6.4.4 Automatic Connection on Data Capture .....	31
6.4.5 Keeping the Connection Open .....	32
6.4.6 Optimizing the Connection.....	32
6.5 Acquisition Period and Time Slots.....	33
7. Inputs Management.....	35
7.1 .....	
Wiring.....	35
7.2 Declaring Input Ports.....	36
7.3 Input Definition Files .....	36
7.4 Configuration via the Local Web Interface.....	38
7.5 Checking that Input Ports are Operating Correctly.....	38
7.6 Input Data .....	39
7.6.1 Filename Syntax.....	39
7.6.2 Format of Input Data .....	40
7.6.3 Example .....	41
7.7 Alarms on the Digital Inputs .....	42
7.7.1 Syntax of the Alarms File Name .....	42
7.7.2 Format of Alarm File.....	42
7.7.3 Example of an Alarm on a Digital Input .....	43
8. Upgrading the Unit.....	44
8.1 Upgrading via the Web Server .....	44
8.2 Upgrading Remotely via the FTP Server .....	45
9. Using Web Services .....	46
9.1 Enabling and Configuring.....	46
9.2 Format of HTTP Requests.....	46
9.3 Examples of Web Services Requests.....	50
10. Tools and Diagnostics .....	51

10.1 Events Journal..... 51

10.2 Modem Information ..... 54

10.3 LED Indicators ..... 55

10.4 Installation Button ..... 56

10.5 Diagnostic SMS..... 56

10.6 Debug Traces ..... 57

10.7 Factory Reset Procedure ..... 59

Sales Contact ..... 60

# User Manual

## 1. Glossary

NAME	DESCRIPTION
APN	Access Point Name: name of the access point that enables the gateway to connect to the Internet via a mobile link.
FTP	File Transfer Protocol: communications protocol used to share data files on a TCP/IP network.
GPRS	General Packet Radio Service: standard for mobile telephone communications derived from the GSM standard and enabling higher data transfer rates. Also known as 2.5G.  DL: maximum 86 kbps; UL: maximum 43 kbps
GSM	Global System for Mobile Communications: the switched network for mobile telephones.
HTTP	HyperText Transfer Protocol: client-server communications protocol developed for the Web.
IP	Internet Protocol: message protocol controlling the addressing and transmission of TCP packets over the network.
DIN Rail	Standardized 35-mm metal rail used in Europe for rack-mounted industrial control equipment
TCP	Transmission Control Protocol: a connection-oriented protocol for the Internet, which provides data segmentation into packets that are transmitted over the network via the IP protocol. This protocol provides a reliable data transfer service. See also IP.
TCP/IP	Transmission Control Protocol/Internet Protocol: the suite of network protocols that provide interconnection services between computers with different hardware architectures and operating systems. TCP/IP includes standards for communication between computers and conventions for network interconnection and for routing.

## 2. About this Document

The purpose of this guide is to describe the installation and operation of a WebdynPulse gateway.

### 2.1 Scope

The present technical description is valid for WebdynPulse gateways from hardware version 1 onwards, and from software version V1.01.15 and up.

### 2.2 Target Audience

This guide is intended for users of WebdynPulse gateways.

### 2.3 Product Versions

There are two versions of this unit:

WG0510-A01 Ethernet/GPRS interfaces

WG0510-A02 Ethernet/GPRS interfaces - IP55 enclosure - 24V Rail Din power supply

This manual covers only the WG0510-A01 variant. For all specific details concerning the WG0510-A02 variant, please contact WebdynPulse support.

### 2.4 Safety advice

It is essential to respect all safety recommendations featured in this guide.

Failure to comply with these recommendations may cause damage to equipment and danger to the health safety of personnel.



Electrical connections

- All wiring must be carried out only by a specialized qualified electrician.
- Prior to installation, all equipment connected to the corresponding communications bus must be disconnected on both sides (DC and AC).
- Respect all safety recommendations appearing in meter documentation.

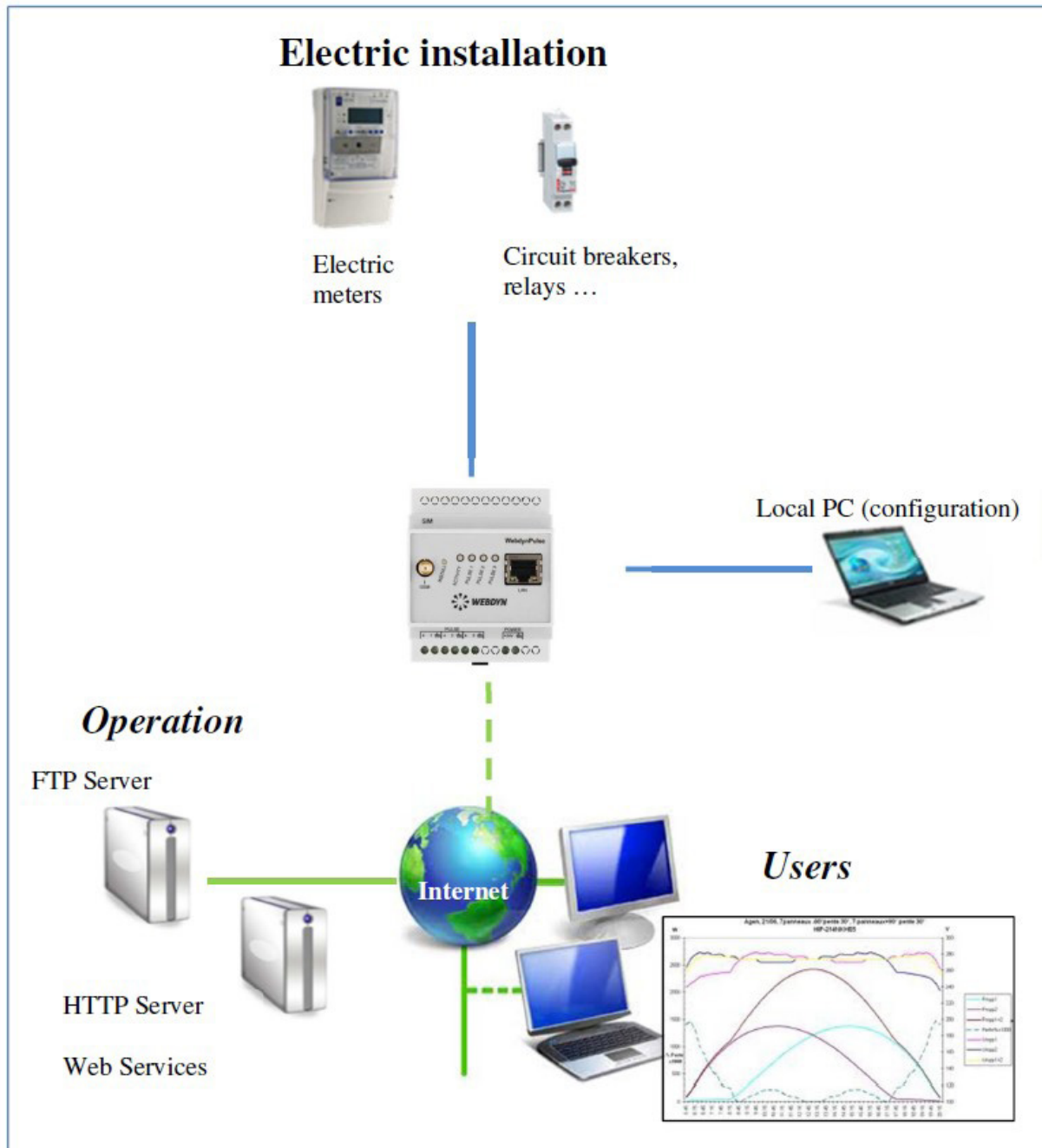


The WebdynPulse unit is liable to damage from electrostatic discharge (ESD). Avoid all contact with component connectors and terminals.

## 3. Principles of Operation

The WebdynPulse gateway is the communications hub for your electric meters. It continuously collects all the data from electric meters. It can also detect the switching of circuit breakers or relays.

### 3.1 Overview Diagram of a Comprehensive Monitoring Solution



## 4. Unit Characteristics

### 4.1 Technical Characteristics

ELECTRICAL CHARACTERISTICS	
Input tension	12/24 V
Electricity consumption when idle	2.8 W (1)
Electricity consumption when connected via Ethernet	3.2 W (1)
Maximum peak power during GPRS connection	5 W (1)
GSM/GPRS antenna: Microel EA-247	
Frequency	900/1800 MHz
Gain	0 dB
Polarization	Vertical
MEMORY	
Storage capacity	100 MB of compressed data
Dimensions	
Size	157mm*86mm*58,5mm
ENVIRONMENTAL CONDITIONS	
Operational temperature range	-10 °C to +55 °C
Storage temperature (for a period of less than one month)	-20 °C to +45 °C
Storage temperature (for a period of more than one month)	-20 °C to +35 °C

(1) Measurements carried out on the Unit + DIN Rail DR15-24 power supply assembly



## 4.2 List of Available Interfaces

DATA SOURCE	INTERFACE	CHARACTERISTICS
Pulse counter, circuit breakers, relays	SO inputs via 2 wires	Up to 3

COMMUNICATIONS CHANNEL	PROTOCOL
Ethernet 10/100 Mbps	IP Services
GSM/GPRS Modem (WGE-G-PV)	IP Services

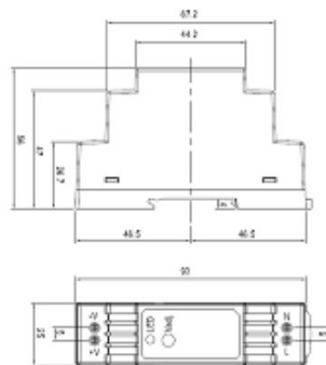
  

REMOTE SERVER	PROTOCOL
FTP server with HTTP Web Services option.	FTP and HTTP

## 4.3 Options and Accessories

### 4.3.1 DIN Rail Power Supply

Brand: MEANWELL; reference No.: DR-15-24



This power supply unit is mounted next to the gateway on the standard 35-mm DIN RAIL metal rail. This rail mounting means that no other mounting bracket is required.



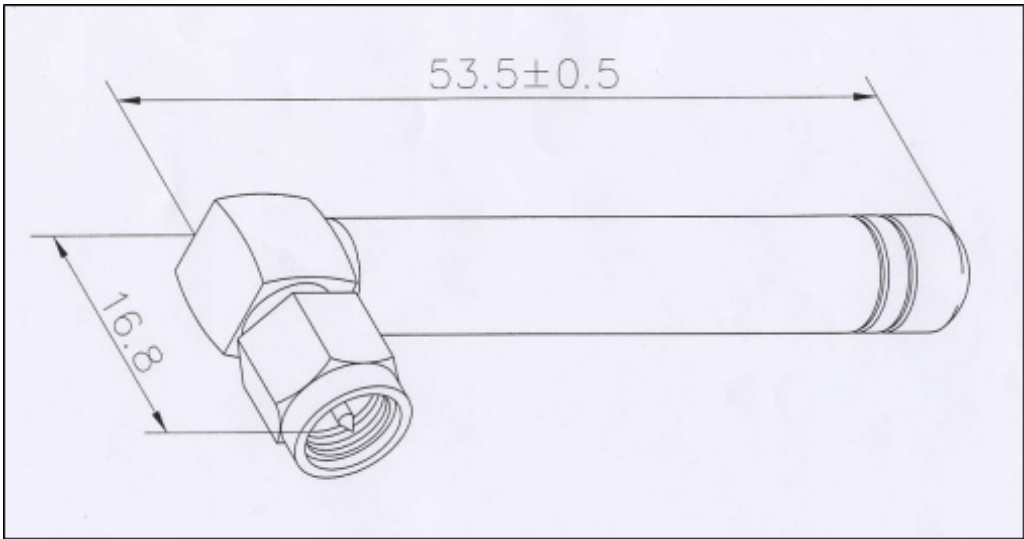
- If the DIN RAIL unit is used to supply power remotely to analogue modules, please check the output tension adjustment value.
- In addition, check the power consumption of all remotely powered modules.

Characteristics:

OUTPUT	DC VOLTAGE	24V	
	RATED CURRENT	0.63A	
	CURRENT RANGE	0 ~ 0.63A	
	RATED POWER	15.2W	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	
	VOLTAGE ADJ. RANGE	21.6 ~ 26.4V	
	VOLTAGE TOLERANCE Note.3	±1.0%	
	LINE REGULATION	±1.0%	
	LOAD REGULATION	±1.0%	
	SETUP, RISE TIME	1000ms, 50ms/230VAC; 1000ms, 50ms/115VAC at full load	
INPUT	HOLD UP TIME (Typ.)	70ms/230VAC; 16ms/115VAC at full load	
	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	85%	
	AC CURRENT (Typ.)	0.88A/115VAC; 0.48A/230VAC	
	INRUSH CURRENT (Typ.)	COLD START 35A/115VAC; 65A/230VAC	

PROTECTION	OVERLOAD Note.5	105 ~ 160% rated output power; Protection type: Constant current limiting, recovers automatically after fault condition is removed
	OVER VOLTAGE	27.6 ~ 32.4V
ENVIRONMENT	WORKING TEMP.	-20 °C ~ +60 °C (Refer to output load derating curve)
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 °C ~ +85 °C, 10 ~ 95% RH
	TEMP. COEFFICIENT	±0.03%/ (0 ~ 50) °C)
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6
SAFETY & EMC	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved, design refer to EN50178
	WITHSTAND VOLTAGE	I/P-O/P: 3 KV AC
	ISOLATION RESISTANCE	I/P-O/P: 100 megohm / 500 V DC / 25 / 70% RH
	EMI CONDUCTION & RADIATION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B
	HARMONIC CURRENT	Compliance to EN61000-3-2, -3
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A
OTHERS	MTBF	1172.3K hr min.    MIL-HDBK-217F (25 )
	DIMENSION	25*93*56mm (W*H*D)

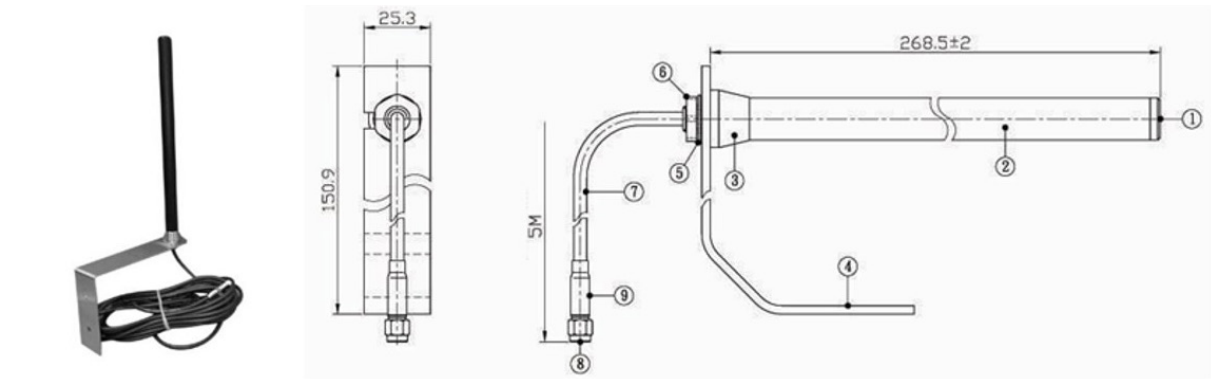
4.3.2 GSM/GPRS Right-Angled Stub Antenna



Characteristics:

Frequency range	900-1800 MHz
-----------------	--------------

4.3.3 GSM/GPRS Externally Mounted Antenna



Characteristics:

Cable:	RG-58
Cable length:	5,10 or 20 meters available
Frequency ranges	824-960 MHz; 1710-1990 MHz
Options	Mounting bracket

## 5. Prerequisites

The configuration is carried out using configuration/definition files, available on a remote FTP server. It is vitally important that the WebdynPulse gateway should have access to an FTP server for downloading and/or uploading its configuration and definition files, as well as its data, alarm and log files.

In addition, the factory default time and date setting of the gateway is 1st January 1970 at 00:00. Time synchronization is therefore required to enable the data to be correctly time stamped. For this purpose, the gateway must synchronize itself with an NTP (Network Time Protocol) server.

For these reasons, it is important to ensure that the prerequisites listed below are correctly entered.

Webdyn doesn't provide FTP or SIM card. There is a public default server for NTP that is not guaranteed.

### 5.1 Access to the FTP Server

For the configuration of the remote FTP server, it is essential to respect the following configuration:

- Read/Write/Rename access authorized
- Passive mode enabled
- Port 21 (by default)
- Short handshake message
- Login and Password must be less than 30 characters

As the WebdynPulse gateway does not create any directories, the FTP server must provide the directories and subdirectories for configuration, definition, data, alarms, commands, logs and updates. Here is a list of the default directories expected:

- /CONFIG: Contains the configuration files for the gateway
- /DEF: Contains the definition files for the modules and sensors to be controlled
  - /IO: Definition files for analogue and digital input/output, and index entries
- /BIN: contains the binary files of the gateway for update purposes
- /DATA: Directory for upload of data files. This directory contains four subdirectories
  - /IO: Analogue and digital input/output data, and index entries
- /ALARM: Contains the alarm files
- /CMD: Contains the command and acknowledgement files
- /LOG: Contains the gateway system log (IDSite\_DATE.log) and the debug trace log (disabled by default, and used only by Webdyn in support mode) IDSite\_DATE\_debug.log

It is possible to modify part of the directory tree of the FTP server by modifying the root directories ("/CONFIG", "/DEF", "/DATA", "/BIN", "/ALARM", "/CMD" and "/LOG") in the configuration of the WebdynPulse gateway.

## 5.2 Access to the NTP Server

To set its date and time correctly, the WebdynPulse synchronizes itself with an NTP server before each connection to the FTP server. By default, the gateway is configured to synchronize itself with the NTP server “pool.ntp.org”. As this NTP server is accessible via the Internet, the gateways must have valid Internet access (the UDP port 123 must be open for outgoing traffic) for synchronization to occur.

## 5.3 Connection via GPRS or Ethernet

Access to the FTP and NTP servers may be via an Ethernet connection or a GPRS connection.

### 5.3.1 Ethernet Connection

For connection via Ethernet, the following parameters must be supplied:

- IP address of the WebdynPulse on the local network
- Subnet mask
- IP address of the router or ADSL modem
- IP address of the DNS server

### 5.3.2 GPRS Connection

For connection via GPRS, it is essential to procure an activated SIM card with a DATA option, and to know the values of the following parameters:

- APN (Access Point Name): Name of the GPRS access point. This depends on the operator and the type of subscription
- User name and password for connection to the APN

### 5.3.3 Managing the PIN Code for the SIM Card

For connection via GPRS, a card must be inserted into the WebdynPulse gateway. The PIN code to enable access to the card cannot be entered on the gateway. The WebdynPulse unit handles the PIN code for the SIM card automatically. It is for that reason that the SIM card must either be initialized with no PIN code or with a PIN code set to 0000 when it is first inserted.

The PIN code is managed using the following methods:

- If the PIN code is deactivated: GPRS communication is operational for the gateway.
- If the PIN code is activated and equal to “0000”: when the gateway is fired up for the first time, a new PIN code is attributed to the SIM card. This PIN code is defined on the basis of the ICCID (Integrated Circuit Card Identification) number of the SIM card installed. It is calculated using a proprietary Webdyn algorithm. This feature allows fraudulent use of the SIM card to be prevented, while providing ease of use. In addition, this same SIM card can be reused in another WebdynPulse, WebdynTIC or WebdynSun unit without any additional configuration.

- If the card has a PIN code that is activated but is neither “0000” nor the code attributed by the WebdynPulse gateway, communications (including SMSs) will not be operational.



Never insert a SIM card with an activated PIN code that is neither “0000” nor a value attributed by a WebdynPulse. If you do so, the SIM card will be blocked and the user will have to unblock it by entering the PUK code manually.

## 6. Configuring the Unit

Configuration of the WebdynPulse gateway should be carried out in several stages. The first stage, initialization, consists of configuring the WebdynPulse gateway so that it can connect to the FTP server. The second stage is configuration of the gateway via the remote server. During this stage, it is possible to modify the whole set of configuration parameters via the files available on the server.

### 6.1 Roles of the WebdynPulse Files

Except for the locally accessible parameters enabling connection to the remote FTP server, all configuration of the unit is performed via the configuration files available on the said server. The files available on the FTP server must be in ANSI format.

Each configuration file is prefixed with a unique identifier named the “prefixID”. This prefix enables the configuration for each gateway on the server to be customized. Two categories of files are necessary for configuring the unit: the configuration files and the definition files. The var.ini file only contains the connection schedule for FTP, the data acquisition frequency is in the daq.ini file.

#### 6.1.1 Configuration Files

The WebdynPulse has three configuration files:

- prefixID\_config.ini: this contains the general parameters of the WebdynPulse
- prefixID\_daq.ini: this contains the parameters required for data acquisition
- prefixID\_var.ini: this contains the information for scheduling connection and data acquisition times

These 3 files are contained in the configuration directory on the FTP server. By default, this directory is “/CONFIG”, but can be modified by means of the variable “FTP\_DirConfig” in the file prefixID\_config.ini.

If the gateway does not detect these files on the FTP server, it creates them from its current configuration. Furthermore, at every connection to the server, the gateway checks the modification dates and sizes of the files, in order to detect any modification of one of the files. Should a modification be detected, the file is downloaded by the gateway.

The details of each parameter in the configuration files will be explained as required in the remainder of this documentation.

#### 6.1.2 Definition Files

The role of the definition file is to define the set of data to be collected for a given type of module. It may be generated automatically by the WebdynPulse unit or created by the IT department depending on the specific details of the module that is to be managed.

The WebdynPulse therefore possesses one definition file that describes the 3 inputs, the IO.ini.

The link between the definition files and the unit is provided via the configuration file prefixID\_daq.ini.



## 6.2 Initialization

Initial configuration of the unit is necessary to enable connection to the remote FTP server. This configuration can be carried out either via the built-in Web server, or by SMS if this option is available where connection is done using GPRS.

Local configuration of the WebdynPulse affects only the variables in the configuration file: prefixID\_config.ini.

Here is a list of the variables accessible via the local web interface (http) and/or via SMS commands:

VARIABLE	DEFINITION	DEFAULT VALUE	HTTP	SMS
ID	Gateway identifier (up to 29 characters)	WDxxxxxx where xxx... is the last 6 digits of the MAC address	X	
LAN_IpAddr	IP address of the gateway (router) on the LAN (local area network)  Communication via Ethernet (up to 15 characters)	192.168.1.12	X	
LAN_SubnetMask	LAN subnet mask  Communication via Ethernet (up to 15 characters)	255.255.255.0	X	
LAN_Gateway	Address of the gateway (router) on the LAN  Communication via Ethernet (up to 15 characters)	0.0.0.0	X	
LAN_DNS	Address of the DNS server on the LAN  Communication via Ethernet (up to 15 characters)	0.0.0.0	X	
LAN_DHCP_Enable	Enable/Disable DHCP: for automatic provision of Ethernet IP addresses.  0=Disabled; 1=Enabled	0	X	

GPRS_APN	GPRS Access Point Name (APN)  Provided by mobile operator (up to 29 characters)	m2minternet	X	X
GPRS_Login	GPRS APN identifier  Provided by mobile operator (up to 29 characters)	sfr	X	X
GPRS_Password	GPRS APN password  Provided by mobile operator (up to 29 characters)	sfr	X	X
GPRS_PhoneNumber	Phone number for GPRS  In France: *99***1# (up to 13 characters)	*99***1#	X	X
FAI_PhoneNumber	Phone number for PSTN  Provided by the Internet Service Provider (ISP) (up to 13 characters)	empty	X	
FAI_Login	PSTN identifier  Provided by the ISP (up to 29 characters)	empty	X	
FAI_Password	PSTN password  Provided by the ISP (up to 29 characters)	empty	X	
WAN_ConnectionInterface	Remote server connection interface selected:  0=Ethernet; 1=GPRS modem	1	X	
FTP_Server	Name of remote FTP server (up to 29 characters)	empty	X	X
FTP_Login	Identifier for connection to remote FTP server (up to 29 characters)	empty	X	X

FTP_Password	Password for connection to remote FTP server (up to 29 characters)	empty	X	X
FTP_Port	Port used for connection to remote FTP server	21	X	X
FTP_DirConfig	FTP directory name for gateway configuration files (up to 29 characters)	/CONFIG	X	
FTP_DirDef	FTP directory name for gateway definition files (up to 29 characters)	/DEF	X	
FTP_DirData	FTP directory name for data files (up to 29 characters)	/DATA	X	
FTP_DirLog	FTP directory name for log files (up to 29 characters)	/LOG	X	
FTP_DirBin	FTP directory name for gateway firmware  Used for upgrading gateway (up to 29 characters)	/BIN	X	
FTP_DirAlarm	FTP directory name for alarm files (up to 29 characters)	/ALARM	X	
FTP_DirCmd	FTP directory name for command files (up to 29 characters)	/CMD	X	
FTP_Option	Enable/Disable of two-phase data uploading. (File with extension “.tmp” uploaded, then extension “.tmp” deleted after transfer.  0=Disabled; 1=Enabled	0	X	

CONFIG_ForceUpload	Allow overwriting configuration and definition files on the server if a local change is performed to a file parameters concerned:  0 = Off; 1 = Enabled	1	X
WebService_Enable	Enable/Disable of web services:  0= Disabled; 1= Enabled	0	X
WebService_Url	Web Service http:// address (up to 29 characters)		X
Language	Language chosen for built-in website:  fr = French; en= English	fr	X

These variables can be modified at any time on the remote server.



To ensure consistency between the server and the unit, it is advisable to delete the unit's configuration file prefixID\_config.ini from the remote server as soon as any local modification is carried out. This must be done before connecting, so that the gateway can upload its new prefixID\_config.ini configuration file.

### 6.2.1 Configuration via the Built-in Web Server

Access to the built-in Web interface on the WebdynPulse gateway is provided via the gateway's LAN connection. As the gateway does not cross Ethernet signals, when there is a direct connection between the gateway and the computer, a crossover cable must be used. In addition, both the computer used and the gateway must belong to the same subnet. If the WebdynPulse gateway has a static IP address (the default situation), the computer must also be configured to use a compatible static IP address.

This static address must belong to the same subnet as the WebdynPulse gateway.



On delivery, the settings for the WebdynPulse gateway are as follows:

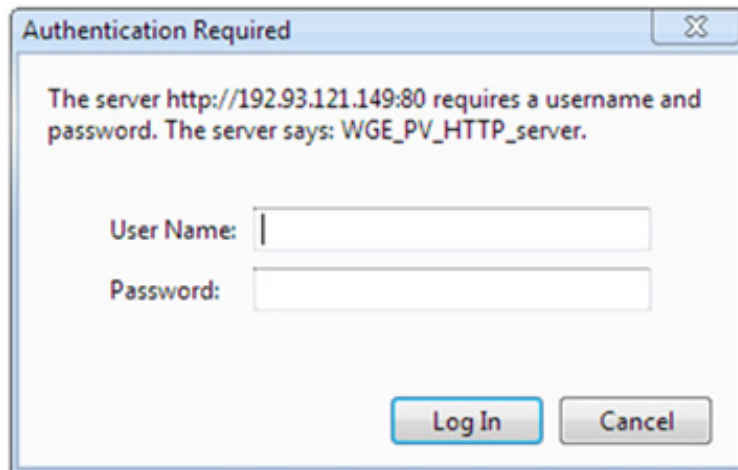
- IP address: 192.168.1.12
- Subnet mask: 255. 255. 255.0

Network administrator

- If your local network is managed by a network administrator, contact him or her before connecting the WebdynPulse gateway up to your network.

## Connecting to the built-in Web interface

- Once your computer has been correctly configured:
- Launch your Web browser (Internet Explorer, Firefox, etc.).
- Go to the home page of the WebdynPulse gateway using the browser's address bar to specify the address `http://192.168.1.12`.
- The following window is displayed:



- Key in the identifier and the password:



On delivery, the settings of the WebdynPulse gateway are as follows:

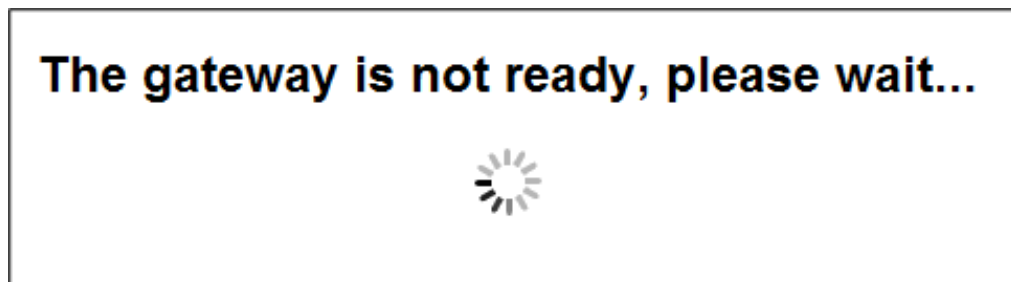
User Name: userhigh

Password: high

- The following home page is displayed:



If the gateway is not yet operating, the following message is displayed:



### General configuration

The Configuration page allows you to:

- Choose the Web interface language.
- Configure the gateway identifier.
- Complete the GPRS/Ethernet connection parameters, and the http/ftp servers.



- Home
- Setup
- Install
- Control
- Upgrade
- Restart

## Setup

Choose language
English
1

Gateway ID
ID : WD00697E
automatic mode
2

Connection mode
Ethernet
Modem
3

Ethernet
Addressing mode : dynamic static
IP address : 192.168.1.12
Mask : 255.255.255.0
Gateway : 0.0.0.0
DNS : 0.0.0.0

GPRS modem
Call number : \*99\*\*\*1#
APN : m2minternet
Login : sfr
Password : sfr

FTP server
Server :
Login :
Password :
Port : 21
Setup : /CONFIG
Definition : /DEF
Data : /DATA
Alarms : /ALARM
Commands : /CMD
Log : /LOG
Firmware : /BIN
Allow configuration files to be replaced on FTP server
4

Web services
Enable :
URL :
5

OK

## 1. Choosing the language:

Selection the Web interface language from the popup menu.

This field corresponds to the variable “Language” in the configuration file prefixID\_config.ini.

## 2. Gateway identifier:

This field corresponds to the variable “ID” in the configuration file prefixID\_config.ini. The value of this variable enables identification of the gateway when interacting with the FTP server. The names of the files available on the server will be prefixed with the value of this variable, so as to link them to the gateway (i.e. the site) concerned.

There are two ways of configuring the gateway identifier:

- Manually, in the ID field (by default “ID=WDXXXXXX” where XXXXXX is the last six digits of the MAC address).
- Automatically, by ticking the Automatic mode checkbox and leaving the ID field empty (“ID= “).

For this option, Web Services must be enabled. The gateway will pick up its identifier just before the initial connection to the FTP server. The ID will be filled in with the value returned by the Web Services server. Should the variable "ID" be deleted once more ("ID= "), the gateway will request a new identifier on its next connection.

### 3. Connection mode:

Choose "Ethernet" or "Modem", depending on the mode to be used for the connection.

Ethernet: if the connection mode chosen is "Ethernet", enter parameters that are valid for your Ethernet network:

- Address mode: you can obtain the Ethernet parameters automatically if the network infrastructure and the version of the WebdynPulse can handle this. If this is the case, click the dynamic radio button and consult the configuration of your DHCP server to find the IP address attributed to your gateway.
- IP Address: enter the IP address at which the WebdynPulse gateway is accessible.
- Mask: enter the subnet mask for your network. This mask limits the Ethernet network to one range of defined IP addresses, and separates one network range from another.
- Gateway: enter the address of the gateway to your network. The gateway address is the IP address IP of the device that establishes the connection to the Internet. In general, the address entered here is that of the router or ADSL modem.
- DNS: enter the address of the DNS server. The DNS (Domain Name System) server translates symbolic Internet addresses (e.g. "www.webdyn.com") into their corresponding IP addresses. Here you should enter the address of the DNS server you received you're your Internet Service Provider (ISP). You can also enter the IP address of your router or ADSL modem.



If your Ethernet network is managed by a network administrator, contact him or her to have your WebdynPulse gateway included in the existing Ethernet network.

Modem: if the connection mode chosen is "Modem", enter parameters that are valid for your GPRS subscription:

- Call number: enter the phone number for the GPRS connection. The default number is "\*99\*\*\*1#", which is valid in most cases. This number is not the phone number of the SIM card fitted to the unit.
- APN: enter the Access Point Name (APN) supplied by your mobile operator.
- Login: enter the user ID for the APN supplied by your mobile operator.
- Password: enter the password for the APN supplied by your mobile operator.





Consult your mobile operator to obtain the information pertaining to your SIM card (APN, user ID and password).

#### 4. FTP server:

To enable the gateway to communicate with a remote FTP server (via Ethernet OR modem), enter the following information:

- Server: IP Address or symbolic name of the remote FTP server.
- Login: User ID used by the gateway for connection to the remote FTP server.
- Password: Password used by the gateway for connection to the remote FTP server.
- Port: Port number used for communications with the remote FTP server (default: 21).
- Setup: Name of the Configuration directory (default: /CONFIG).
- Definition: Name of the Definition directory (default: /DEF).
- Data: Name of the Data directory (default: /DATA).
- Alarms: Name of the Alarms directory (default: /ALARM).
- Commands: Name of the Commands directory (default: /CMD).
- Log: Name of the Log directory (default: /LOG).
- Firmware: Name of the directory for downloading new firmware (default: /BIN).
- Allow configuration files to be replaced on FTP server: if this box is checked the local gateway configuration takes precedence over the remote configuration. In case of local change configuration files on the remote server will be overwritten.



Check that the FTP directories defined actually exist on the FTP server. The gateway does not create any directories on the server.

For UNIX servers, the names are case sensitive (lower/UPPER case).

#### 5. Web Services:

If the gateway has to use a connection to Web Services, enable this option and fill in the URL of the server.

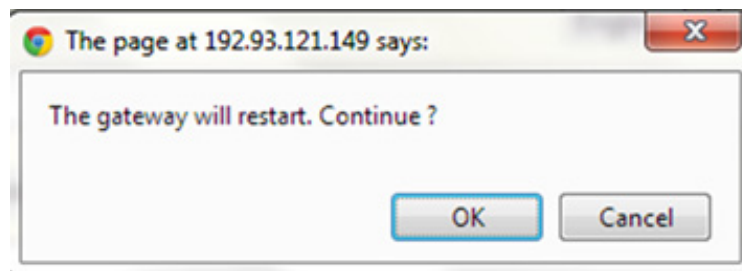
Otherwise, disable this option.



Once all the parameters have been specified, click on OK.

A message will appear at the top of the page to indicate that the gateway must be restarted to take the new parameters into account.

Click on Restart in the menu on the left and confirm this in the dialogue box:



Wait for the WebdynPulse gateway to complete the restart, then reconnect to the built-in Web server.



It is advisable to force connection to the remote server after restarting the unit. This is to check that all the new parameters are correct.



To ensure consistency between the server and the unit, it is advisable to delete the configuration file prefixID\_config.ini from the unit before connecting. In this case, the gateway will generate and upload a new prefixID\_config.ini file.

### 6.2.2 Configuration via SMS

It is possible to configure the information required for connection to the remote FTP server via SMS. To do so, you must first insert an active GPRS SIM card into the WebdynPulse unit and ensure that you know its telephone number.

#### **SMS to configure the APN:**

Send the following SMS to the WebdynPulse:

`"apn=apn_name;usr=user_name;pwd=password;"`

#### **Where:**

apn\_name: Name of the APN.

user\_name: User ID for access to the APN.

password: Password for access to the APN.

#### **SMS to configure the remote FTP server:**

Send the following SMS to the WebdynPulse:

`"ftp=server_name:user_name:password:port;"`

#### **Where:**

server\_name: Symbolic name or IP address of the remote FTP server.

user\_name: User ID for access to the remote FTP server.

password: Password for access to the remote FTP server.

port: TCP port number for access to the remote FTP server (default: 21).



It is advisable to force connection to the remote server after restarting the unit. This is to check that all the new parameters are correct.

#### **SMS to connect to the remote FTP server:**

Send the following SMS to the WebdynPulse:

“Connect”



To ensure consistency between the server and the unit, it is advisable to delete the configuration file prefixID\_config.ini from the unit before connecting. In this case, the gateway will generate and upload a new prefixID\_config.ini file.

## **6.3 Setting the Unit Date and Time**

The WebdynPulse unit timestamps all its data and log entries. As a result, it is necessary to set its time and date reliably. The real-time clock is therefore synchronized with a remote NTP server as a matter of course every time the unit connects to the Internet.

To choose an NTP server, you must modify the variables listed below in the prefixID\_config.ini configuration file available on the server, then force the unit to connect to the remote server.

VARIABLE	DEFINITION	DEFAULT VALUE
NTP_Server1	IP address for the main NTP server (up to 29 characters)	pool.ntp.org
NTP_Server2	IP address for the backup NTP server (up to 29 characters)	empty

An option to force NTP resynchronization after a restart following a power failure is enabled by setting to 1 the variable “NTP\_SyncPowerLoss” in the configuration file prefixID\_config.ini.

VARIABLE	DEFINITION	DEFAULT VALUE
NTP_SyncPowerLoss	<p>Option to force NTP resynchronisation after a power failure.</p> <p>If this option is enabled, an NTP connection will be established after the gateway restarts following a power failure.</p> <p>0=Disabled; 1=Enabled</p>	0



All timestamping of data and events is carried out using GMT.

## 6.4 Connection Modes and Periods

There are four modes of connection to a remote server:

- Manual connection
- Periodic automatic connection
- Automatic connection at fixed times
- Automatic connection on data capture

In the case of automatic connection, the connection type is chosen depending on the prefixID\_var.ini configuration file.

The WebdynPulse always carries out the same tasks, regardless of the type of connection requested:

- NTP synchronization
- Connection to the remote FTP server
  - Alarm management
  - Command file management
  - Data management
    - Upload of input/output data files
    - Upload of electric meter files
  - Configuration file management
  - Definition file management
  - Log management
  - Firmware update management

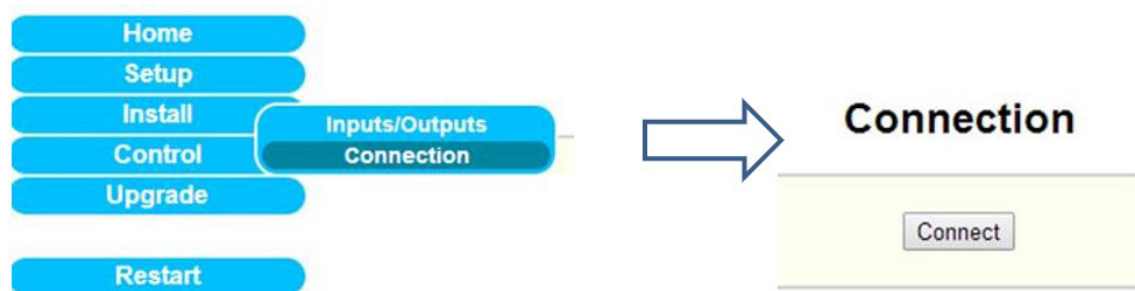
### 6.4.1 Manual Connection

- Connection by pressing the push-button:

You can force a connection manually by using a tool to press and hold the push-button labelled “INSTALL” until the “SERVICES” LED begins to flash rapidly.

- Connection via the built-in Web server:

You can force a connection manually via the built-in Web interface by going to the “Install/Connection” menu and clicking on the “Connect” button.



- Connection via SMS:

Send the SMS “connect” to the WebdynPulse to force immediate connection.

### 6.4.2 Periodic Automatic Connection

Periodic automatic connection consists of providing the WebdynPulse with a period for connection to the remote server. This period is expressed in hours and is repeated every day.

This is done by using the variables “Connection\_Period”, “Connection\_Hour” and “Connection\_Minute” in the configuration file prefixID\_var.ini.

VARIABLE	DEFINITION	DEFAULT VALUE
Connection_Period	Period for connection to the remote FTP server (in hours, range 0 to 23)  If >0: number of hours between two connections. The variable “Connection_Minute” is used to specify the minute number within the hour for the connection.  If =0: connection every day at the time specified by the variables “Connection_Hour” and “Connection_Minute”	0
Connection_Hour	Hour for connection to the remote FTP server	1
Connection_Minute	Minute for connection to the remote FTP server	0

Example:

Configuration:

```
Connection_Period=7  
Connection_Minute=25
```

Connection time:

```
Day d: 00:25, 07:25, 14:25, 21:25.  
Day d+1: 00:25, 07:25, 14:25, 21:25.
```

### 6.4.3 Automatic Connection at Fixed Times

Automatic connection at fixed times consists of programming the WebdynPulse with up to 5 times for connecting to the remote server per day.

This mechanism is taken into account only if the variable “Connection\_Period” is equal to 0.

Programming the connection times is carried out by updating the variables listed below in the configuration file prefixID\_var.ini.

VARIABLE	DEFINITION	DEFAULT VALUE
Connection_Hour	Hour for connecting to remote FTP server	1
Connection_Minute	Minute for connecting to remote FTP server	0
Connection_Hour1	Hour for connecting to remote FTP server	0
Connection_Minute1	Minute for connecting to remote FTP server	0
Connection_Hour2	Hour for connecting to remote FTP server	0
Connection_Minute2	Minute for connecting to remote FTP server	0
Connection_Hour3	Hour for connecting to remote FTP server	0
Connection_Minute3	Minute for connecting to remote FTP server	0
Connection_Hour4	Hour for connecting to remote FTP server	0
Connection_Minute4	Minute for connecting to remote FTP server	0

Example:

Configuration:

```
Connection_Hour=7
Connection_Minute=5
Connection_Hour1=12
Connection_Minute1=10
Connection_Hour2=18
Connection_Minute2=15
```

Connection times:

```
Day d: 07:05, 12:10, 18:15
Day d+1: 07:05, 12:10, 18:15
```

#### 6.4.4 Automatic Connection on Data Capture

Automatic connection on data capture consists of instructing the WebdynPulse to connect to the remote FTP server so as to upload the newly captured data as soon as it is available. This is configured by setting the variable “Connection\_OnDataAcquisition” in the configuration file prefixID\_var.ini to 1.

In this operating mode, configuration checking and time synchronization still take place according to the parameters for connecting periodically or at fixed times as shown in the foregoing chapters.

Example:

Configuration:

```
Connection_OnDataAcquisition=1
Connection_Period=0
Connection_Hour=23
Connection_Minute=0
```

And the data capture period is defined to be 15 minutes:

```
DAQ_Period=15
```

Connection times:

```
Every 15 minutes for uploading data  
At 23:00 for time synchronization and configuration checking
```

### 6.4.5 Keeping the Connection Open

With a view to optimizing the connection when automatic connection on data capture has been enabled, it is possible to keep the connection open to avoid pointless disconnections and reconnections.

This is carried out by correctly configuring the variable “Connection\_WaitBeforeCloseDelay” in the configuration file prefixID\_var.ini.

This delay, which is expressed in minutes, must be greater than the data acquisition time “DAQ\_Period” defined in the file prefixID\_daq.ini. The maximum authorized value is 59 minutes.

Example:

Configuration:

```
Connection_OnDataAcquisition=1  
Connection_WaitBeforeCloseDelay=5  
Connection_Period=0  
Connection_Hour=23  
Connection_Minute=0
```

And the data acquisition period is defined as 2 minutes:

```
DAQ_Period=2
```

Connection times:

```
Connection kept open with data being uploaded every 2 minutes  
Time synchronization and configuration checking occurs at 23:00 every  
day
```

### 6.4.6 Optimizing the Connection

To avoid excessive GPRS consumption, it is possible to enable an optimization option for FTP communications. This is specified through the variable Connection\_CheckConfigPeriod in the configuration file prefixID\_var.ini.

When this optimization is enabled, the gateway can be programmed not to analyse the configuration and definition directories on every connection.



VARIABLE	DEFINITION	DEFAULT VALUE
Connection_ CheckConfigPeriod	<p>0: Disabled</p> <p>n: Number of days between 2 analyses.</p> <p>Note: when the gateway processes a command file, it goes on to analyses the configuration and definition directories regardless of whether optimization has been enabled.</p>	0

Where the variable Connection\_Period is zero, the time for the analysis is defined by the variable Connection\_Hour. If it is not, the gateway will launch the analysis during the first connection of the day.

## 6.5 Acquisition Period and Time Slots

The role of the WebdynPulse is to collect data from different sources (inverters, meters, sensors, etc.), and then to write them periodically to CSV files for provision via a remote FTP server.

Data collection is scheduled using the variables DAQ\_Period and DAQ\_PeriodSec in the configuration file prefixID\_daq.ini.

VARIABLE	DEFINITION	COMMENTS	DEFAULT VALUE
DAQ_Period	Collection interval in minutes common to all data sources (Inverters, TIC, I/O, Modbus)	Possible value from 0 to 59 minutes	10
DAQ_PeriodSec	<p>Collection interval in seconds common to all data sources (Inverters, TIC, I/O, Modbus)</p> <p>Considered only if DAQ_Period is equal to 0</p>	Possible value from 0 to 59 seconds	0



If the collection period configured is less than the real data acquisition period, the data will be timestamped at the acquisition period.

A data acquisition time slot can be defined using the variables listed below, in the file prefixID\_var.ini.

VARIABLE	DEFINITION	DEFAULT VALUE
DAQ_ TimeZoneStartHour	Acquisition start hour	0
DAQ_ TimeZoneStartMinute	Acquisition start minute	0
DAQ_ TimeZoneStopHour	Acquisition end hour	0
DAQ_ TimeZoneStopMinute	Acquisition end minute	0

## 7. Inputs Management

This chapter describes the set of facilities that enables management of the meter inputs features of the WebdynPulse gateway.

The WebdynPulse has index inputs for pulse counting or relay switching detection.

The gateway manages Class A and B pulse outputs according to IEC 62053-31:1998 standard.

inputs can be configured as state reading 0s or 1s or they can be set as pulse counters with S0 A class or B class. Standard IEC 62053-31 is S0.

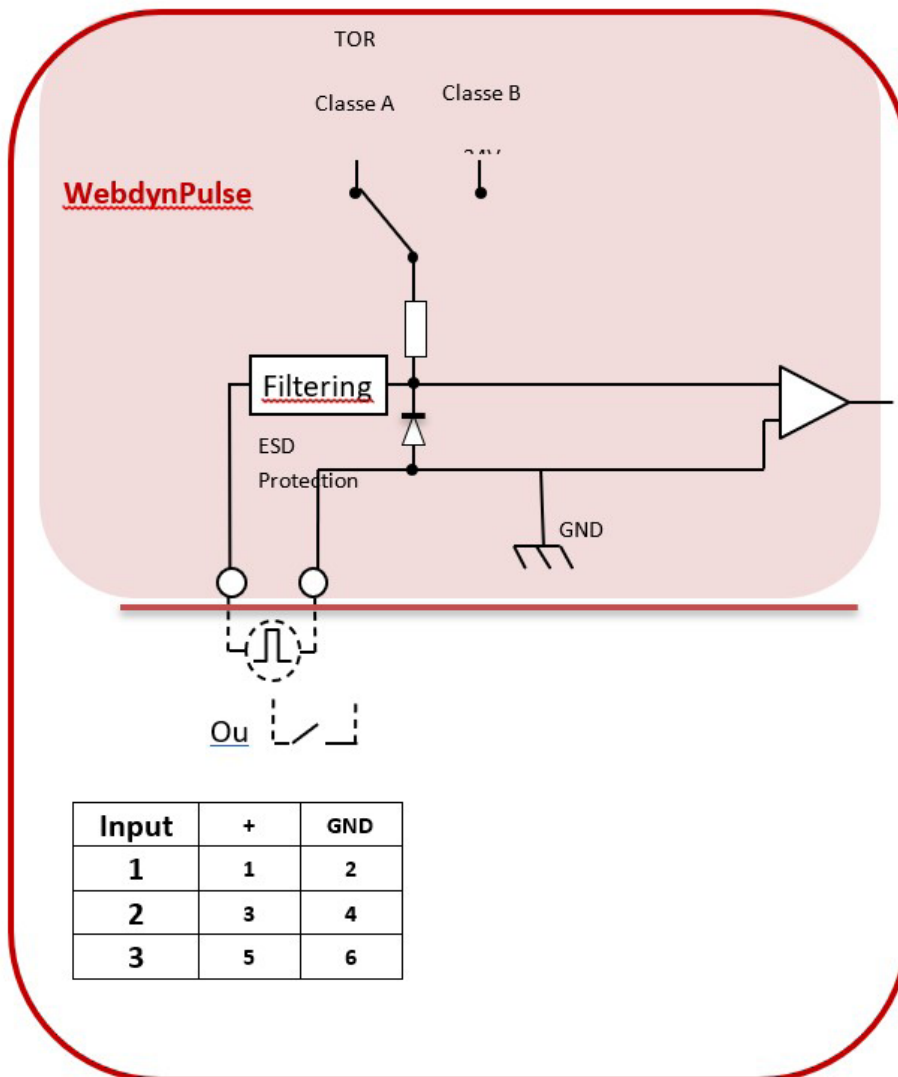
### 7.1 Wiring

The WebdynPulse has 3 index inputs for pulse counting or relay switching detection.

The gateway manages Class A and B pulse outputs according to IEC 62053-31:1998 standard.



To avoid damage to the gateway, do not inject current or tension on the inputs.



## 7.2 Declaring Input Ports

The use of the input ports must be declared in the configuration file `prefixID_daq.ini`.

This can be done automatically on generation of the file `prefixID_daq.ini`. It can also be modified manually by altering the fields listed below in the file `prefixID_daq.ini`.

Parameters that are common to all interfaces:

VARIABLE	DEFINITION	COMMENTS	DEFAULT VALUE
DAQ_Period	Collection interval in minutes common to all data sources (Inverters, TIC, I/O, Modbus)	Possible value from 0 to 59 minutes	10
DAQ_PeriodSec	Collection interval in seconds common to all data sources (Inverters, TIC, I/O, Modbus)  Considered only if DAQ_Period is equal to 0	Possible value from 0 to 59 seconds	0
DAQ_HeaderOption	Enable/Disable display of column headers in the data files  0= disabled  1= enabled		0

I/O parameters:

VARIABLE	DEFINITION	COMMENTS	DEFAULT VALUE
IO_FileDefName	Name of definition file for input/output ports (up to 59 characters)		empty

## 7.3 Input Definition Files

The three input ports available on the WebdynPulse are described in the definition file `prefixID_IO.ini`. This file respects the following syntax:

```
Index_IO_1;number_IO_1;type_IO_1;name_IO_1,coeffA_1;coeffB_1;action1  
Index_IO_N;number_IO_N;type_IO_N;name_IO_N,coeffA_N;coeffB_N;actionN
```

Where:

Index_IO_N	Unique index of the variable: 1 to N
number_IO_N	Number of the input/output: 1 to 4 for the analogue input type 1 to 4 for the bang-bang input type 1 to 2 for the output type 1 to 2 for the index type
type_IO_N	Type of input/output: 1: analogue input (0–10 V or 4–20 mA) 2: bang-bang input 3: switching relay output 4: pulse counting input
name_IO_N	Name of the input/output
coeffA_N and coeffB_N	Physical conversion coefficients
action_N	0: variable not collected 4: instantaneous variable 8: alarm

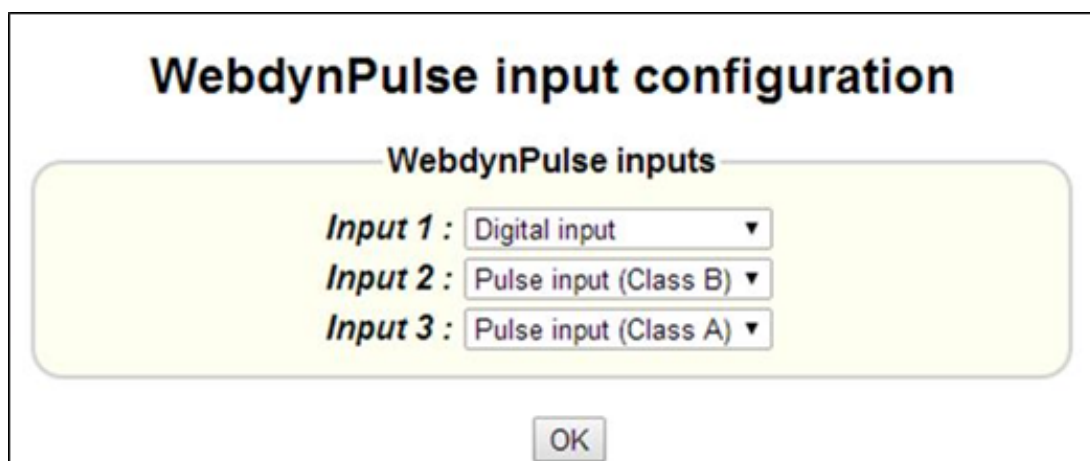
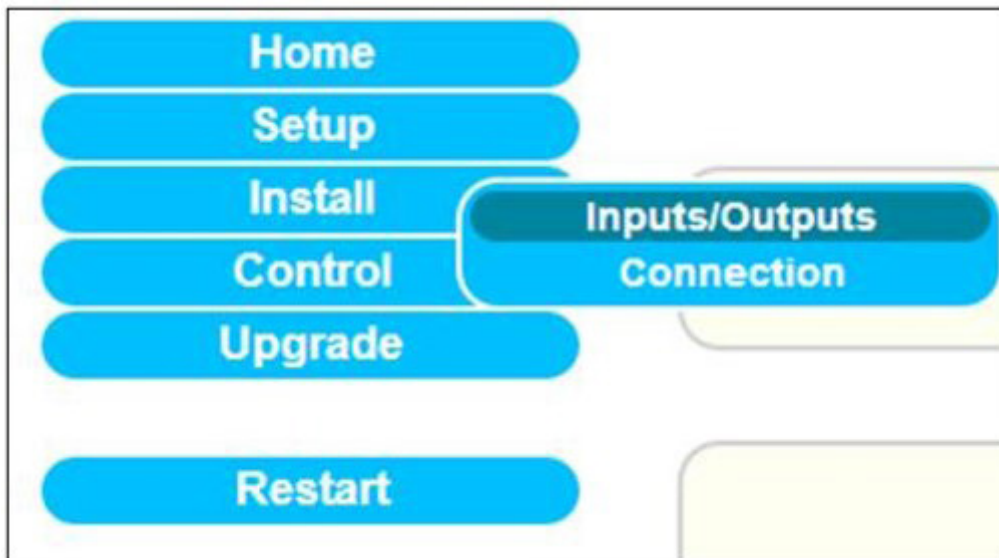
The file generated by default is: prefixID\_IO.ini

```
1;1;2;PULSE1;1;0;8  
2;2;5;PULSE2;1;0;4  
3;3;6;PULSE3;1;0;4
```

The definition file can only contain 3 lines, one per input.

## 7.4 Configuration via the Local Web Interface

Input configuration via the local web interface is accessible via the menu:



Each input can be configured:

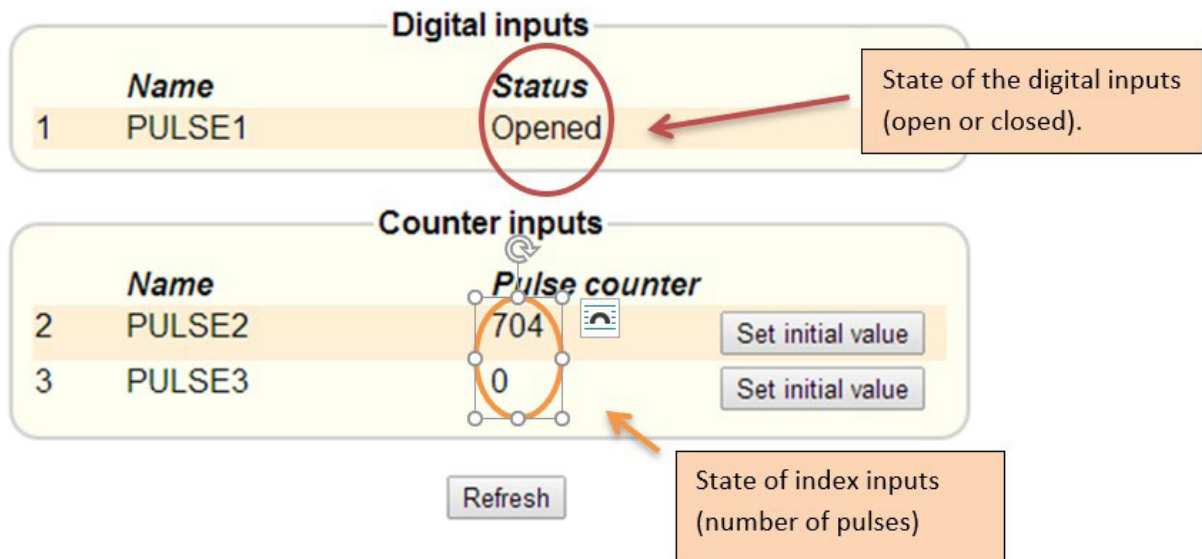
- Unused input
- Digital input
- Pulse input (Class A)
- Pulse input (Class B)

## 7.5 Checking that Input Ports are Operating Correctly

It is advisable to check that input ports are operating correctly after they have been installed and configured. This can be done via the built-in Web server by going to the “Control/Input-Output” menu:

This page enables consistency checks on the values and status flags read from the various input devices connected. It has the appearance shown below:

## IO control



Set initial value buttons permits to define the index values to the desired values:

The screenshot shows a web dialog box titled 'La page à l'adresse 192.168.1.12 indique :'. Inside the dialog, there is a label 'Set index initial value' followed by a text input field. At the bottom of the dialog, there are two buttons: 'OK' and 'Annuler'.

## 7.6 Input Data

Once it has been configured, the WebdynPulse constantly collects data from the input ports, then writes it to a text file in CSV format. This file is compressed in GZ format, then uploaded periodically to the FTP server for subsequent operations. The data file will only contain 3 columns after the timestamp one.

### 7.6.1 Filename Syntax

The data file uploaded to the FTP server complies with the following format:

```
prefixID_IO_YYMMDD_hhmmss.csv.gz
```

Where:

prefixID: gateway identifier.

YYMMDD\_hhmmss: timestamp for the archive in the format “year-month-day-hour-minute-second”

## 7.6.2 Format of Input Data

The file format is as follows: (fields in green are optional data that can be enabled or disabled in IDSite\_daq.ini).

```
TypeIO;fileDefinitionName  
  
nbVariableDevice1;indexIO_1_Device1;indexIO_2_Device1;indexIO_x_  
Device1  
  
date-time_1;IO_1_value_1_Device1;IO_2_value_1_Device1;IO_x_value_1_  
Device1  
  
date-time_2;IO_1_value_2_Device1;IO_2_value_2_Device1;IO_x_value_2_  
Device1  
  
date-time_n;IO_1_value_n_Device1;IO_2_value_n_Device1;IO_x_value_n_  
Device1
```

Where:

```
fileDefinitionName: name of the definition file associated with the input/  
output ports.  
  
nbVariableDeviceN: number of variables collected.  
  
Index_IO_x_DeviceN: index of the variable collected.  
  
date-time_n: timestamp of the data capture in YY/MM/DD-hh:mm:ss format.  
  
IO_x_value_n: value n of variable x captured at date-time n.
```

With the definition file being:

```
Index_IO_1;number_IO_1;type_IO_1;name_IO_1,coeffA_1;coeffB_1;action1  
Index_IO_2;number_IO_2;type_IO_2;name_IO_2,coeffA_2;coeffB_2;action2  
Index_IO_N;number_IO_N;type_IO_N;name_IO_N,coeffA_N;coeffB_N;actionN
```



The data values uploaded are different depending on the input type:

VARIABLE	DEFINITION
Dry loop (bang-bang) inputs	0 open, 1 closed
Index	0 to 4294967296

### 7.6.3 Example

Acquisition from the input/ ports with data being saved every 5 minutes:

- 1 bang-bang inputs connected to input 1
- 1 class A pulse meter connected to the input 2
- 1 class B pulse meter connected to the input 3

```
TypeIO;WD004DC2_IO.ini  
19/11/13-17:20:00;0;10;46
```

With the definition file: prefixID\_IO.ini:

```
1;1;2;PULSE1;1;0;4  
2;2;5;PULSE2;1;0;4  
3;3;6;PULSE3;1;0;4
```

On the server side, a link must be set up between the data received and the corresponding definition files.

**After the data are formatted, we obtain the following results:**

	CONTACT 1	METER 1	METER 2
19/11/13-17:20:00	Relay open	10 pulses	46 pulses

## 7.7 Alarms on the Digital Inputs

As an input is configured to digital input, it can be configured as alarm trigger. This is done via the input definition file, by setting the action field for the relevant inputs to 8.

In this case, a change to the input status causes an alarm to be triggered. This alarm is written to a file in CSV format. This file is compressed into GZ format, then uploaded to the FTP server at the next acquisition time.

### 7.7.1 Syntax of the Alarms File Name

The alarms file uploaded to the FTP server complies with the following format:

```
prefixID_AL_YYMMDD_hhmmss.csv.gz
```

Where:

prefixID: gateway identifier.

YYMMDD\_hhmmss: timestamp for the archive in the format “year-month-day-hour-minute-second”.

### 7.7.2 Format of Alarm File

The uploaded CSV alarm file can contain several alarms from different sources. It is in the following format:

```
date-time_1;AlarmSource1;fileDefinitionName_1;typeIO_1;indexIO_1,valueIO_1  
date-time_N;AlarmSourceN;fileDefinitionName_N;typeIO_N;indexIO_N,valueIO_N
```

Where:

date-time\_N: timestamp when the alarm was triggered, in the format YY/MM/DD-hh:mm:ss

AlarmSourceN: source that triggered the alarm: here, I/O.

fileDefinitionName\_N: name of the definition file associated with the trigger.

typeIO\_N: type of trigger: here, Input.

indexIO\_N: index of the input raising the alarm.

valueIO\_N: value of the input raising the alarm (0 open, 1 closed).

### 7.7.3 Example of an Alarm on a Digital Input

Reception of the alarm file prefixID\_AL\_130329\_132505.csv.gz after the “PULSE 2” digital input has closed. The file contains the following information:

```
29/03/13-13:21:01;IO;prefixID_IO.ini;Input;2;1
```

With the definition file: prefixID\_IO.ini:

```
1;1;5;PULSE1;1;0;4  
2;2;6;PULSE2;1;0;8  
3;3;0;PULSE3;1;0;0
```

## 8. Upgrading the Unit

The gateway can be updated locally via the built-in Web server, or remotely via the FTP server.

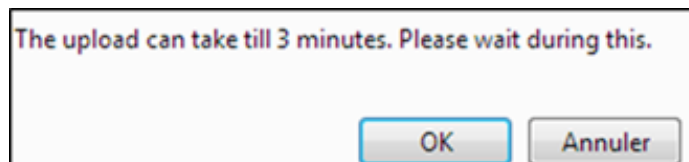
Only “.pak” files containing firmware supplied by Webdyn should be used.

### 8.1 Upgrading via the Web Server

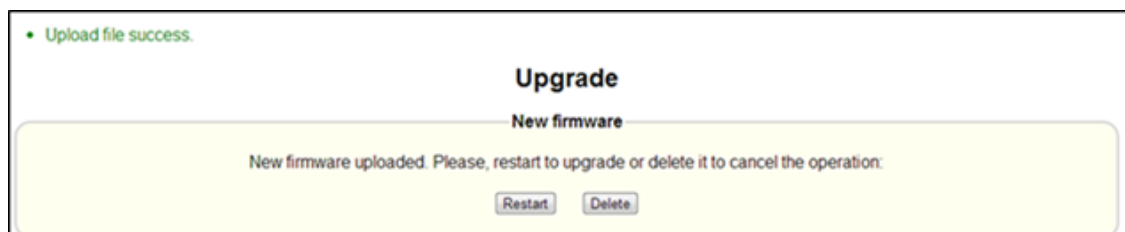
To upgrade your WebdynPulse gateway from the “Upgrade” menu of the built-in Web server, go through the following steps:



- Click on Choose file and select the “.pak” file provided by Webdyn.
- Click on OK.
- The following message is displayed.



- Click on “OK” and wait until the file download onto the gateway is complete.
- Once the download has finished, the following page is displayed:



- Click on “Restart”.
- The gateway should restart. After a few seconds, all the LEDs should flash, indicating that the update is in progress.

Warning: do not disconnect the unit from the power supply during this phase.

- Wait until the update has finished (10–15 minutes) and check the version number on the home page.

Your WebdynPulse gateway is now up to date.

## 8.2 Upgrading Remotely via the FTP Server

Proceed as follows for remote upgrading:

- Upload the new firmware supplied by Webdyn onto the FTP server.
- Modify the following variables in the configuration file `prefixID_config.ini` for the gateway to be updated:
  - `BIN_FileName`= name of the new firmware (supplied by Webdyn).
  - `BIN_Checksum`= checksum of the new firmware (supplied by Webdyn).
  - `FTP_DirBin`= name of the directory containing the new firmware.

The gateway will download its new configuration file, then its new firmware, when it next connects to the FTP server.

## 9. Using Web Services

The WebdynPulse can access the Web Services of an HTTP server in order to retrieve information or to inform the front-end application that an action has been performed on the FTP server, such as upload or download of files. These calls are optional.

### 9.1 Enabling and Configuring

The use of Web Services can be enabled via the variables “WebService\_Enable” and “WebService\_Url” in the configuration file `prefixID_config.ini`.

VARIABLE	DEFINITION	DEFAULT VALUE
WebService_Enable	Enable/Disable Web Services: 0=Disabled; 1=Enabled	0
WebService_Url	http address of the Web Service (up to 29 characters)	

### 9.2 Format of HTTP Requests

There are two types of Web Services:

- `initialisation.php` => called to obtain a site number, the site ID.
- `confirmation.php` => called to give notification that an action has been performed on the FTP server.

The POST method is used for requests to the HTTP server.

The format of requests for Web Services complies with the following syntax:

```
URL of HTTP server/name of Web Service
```

POST data: parameters of the Web Service in the format:

```
parameter1&parameter2... parameterN.
```

The URL is configured via the variable “WebService\_Url” in the configuration file.

The name of the Web Service can be “initialisation.php” or “confirmation.php”.

The possible parameters are:

```
MAC-ADR="MAC address of the gateway" in the format 00:05:F3:XX:XX:XX
NSITE="site number of the gateway"
ACTION="action performed"
ACTION-COMP="supplementary information about the action described by
ACTION"
RC="return code"
RC-COMP= "supplementary information in ASCII about the return code"
```

The list of Web Services and the available actions is described below:

Web Service "initialisation.php":

NAME	POST DATA	DESCRIPTION
initialisation.php	MAC-ADR=MAC address	Automatic attribution of the site number MAC address format: XX:XX:XX:XX:XX:XX

HTTP response:

ReturnCode##IDsite##

The return codes of the responses from the HTTP server may be:

```
00: OK
13: MAC-ADR absent
-1: Internal server problem
```

Web Service “confirm.php”:

NAME	POST DATA	DESCRIPTION
confirm.php	NSITE=IDsite& ACTION=UPLOADDATA& RC=0& RC-COMP=	Informs the HTTP server that a data file has been uploaded to the FTP server.
confirm.php	NSITE=IDsite& ACTION=UPLOADALARM& RC=0& RC-COMP=	Informs the HTTP server that an alarms file has been uploaded to the FTP server.
confirm.php	NSITE=IDsite& ACTION=UPLOADGLOBAL& ACTION-COMP=list of files involved& RC=0& RC-COMP=	Informs the HTTP server that configuration files have been uploaded to the FTP server.
confirm.php	NSITE=IDsite& ACTION=CONFIGGLOBAL& ACTION-COMP= list of files involved& RC=0& RC-COMP=	Informs the HTTP server that configuration files have been downloaded from the FTP server.
confirm.php	NSITE=IDsite& ACTION=UPLOADDEF& ACTION-COMP= list of files involved& RC=0& RC-COMP=	Informs the HTTP server that definition files have been uploaded to the FTP server.



confirm.php	NSITE=IDsite& ACTION=CONFIGDEF& ACTION-COMP= list of files involved& RC=0& RC-COMP=	Informes the HTTP server that definition files have been downloaded from the FTP server.
confirm.php	NSITE=IDsite& ACTION=CONFIGINV& RC=0& RC-COMP=	Informes the HTTP server that the file INV.ini has been uploaded to the FTP server.
confirm.php	NSITE=IDsite& ACTION=CMD& RC=0& RC-COMP=	Informes the HTTP server that a CMD file has been downloaded from the FTP server.
confirm.php	NSITE=IDsite& ACTION=CONFIGBIN& RC=0& RC-COMP=	Informes the HTTP server that a firmware file has been downloaded from the FTP server.
confirm.php	NSITE=IDsite& ACTION=VERSION& ACTION-COMP=2.03.01 Aug 1 2011& RC=0& RC-COMP=	Informes the HTTP server of the current ver-sion of the gateway firmware. This Web Ser-vice is sent on the first connection following a gateway restart.

HTTP response:

ReturnCode

The return codes of the responses from the HTTP server may be:

```
00: OK
10: Site unknown
11: Action code unknown
12: RC received unknown
13: MAC-ADR absent
-1: Internal server problem
```

## 9.3 Examples of Web Services Requests

Upload of a data file:

```
URL/confirm.php;NSITE=IDsite&ACTION=UPLOADDATA&RC=0&RC-COMP=
```

Download of the configuration files IDsite\_config.ini and IDsite\_var.ini:

```
URL/confirm.php;NSITE=IDsite&ACTION=CONFIGGLOBAL&ACTION-COMP=IDsite_
config.ini;IDsite_var.ini;&RC=0&RC-COMP=
```

Download of a new firmware release:

```
URL/confirm.php;NSITE=IDsite&ACTION=CONFIGBIN&RC=0&RC-COMP=
```

## 10. Tools and Diagnostics

### 10.1 Events Journal

On every connection, the gateway uploads a journal of events to the /LOG directory of the remote FTP server. This indicates the actions it has performed since the previous connection. It is compressed into GZ format GZ and bears the name prefixID\_YYMMDD\_hhmmss.log.gz.

**List of messages that can appear in the events journal:**

MESSAGE	DESCRIPTION
Error config file [filename] on variable [variable name]	Error in a variable in a configuration file
FTP connection failed	Error connecting to the FTP server
GPRS signal: [RSSI]	Level of the GSM signal (1 to 31)
Firmware version: [version]	Current version of the firmware
Restart Gateway	The gateway was restarted
WAN connection opened	Beginning of the WAN connection
WAN connection terminated	End of the WAN connection
FTP get command file OK: [filename]	Command file downloaded OK
FTP delete command file failed: [filename]	Deletion of command file failed
FTP send ack command file failed: [filename]	Command acknowledgement file upload failed
FTP get command file failed: [filename]	Command file download failed
FTP send config file OK: [filename]	Upload of configuration file [filename] successful
FTP send config file failed: [filename]	Upload of configuration file [filename] unsuccessful

FTP get config file OK: [filename]	Download of configuration file [filename] successful
FTP get config file failed: [filename]	Download of configuration file [filename] failed

FTP send definition file OK: [filename]	Upload of definition file [filename] successful
FTP send definition file failed: [filename]	Upload of definition file [filename] unsuccessful
FTP get definition file OK: [filename]	Download of definition file [filename] successful
FTP get definition file failed: [filename]	Download of definition file [filename] unsuccessful

FTP get firmware OK	Firmware successfully downloaded from FTP server.
FTP get firmware failed	Firmware not downloaded from FTP server

FTP send alarm file OK: [filename]	Upload of alarm file [filename] successful
FTP send alarm file failed: [filename]	Upload of alarm file [filename] unsuccessful

FTP send data file OK: [filename]	Upload of data file (Inverters, TIC, IO, MODBUS, etc.) named [filename] successful
FTP send data file failed: [filename]	Upload of data file (Inverters, TIC, IO, MODBUS, etc.) named [filename] unsuccessful

FTP send log file OK: [filename]	Upload of events journal [filename] successful
FTP send log file failed: [filename]	Upload of events journal [filename] unsuccessful

FTP send debug file OK: [filename]	Upload of debug trace file [filename] successful
FTP send debug file failed: [filename]	Upload of debug trace file [filename] unsuccessful

FTP send parameters file OK: [filename]	Upload of parameter file [filename] successful
FTP send parameters file failed: [filename]	Upload of parameter file [filename] unsuccessful

NTP synchronization OK	Synchronization of gateway time via Network Time Protocol successful
NTP synchronization failed	Synchronization of gateway time via NTP failed

SMS received:Request reboot	A restart command was received via SMS
SMS received:Request factory	A factory reset command was received via SMS
SMS received:Request connection	A connection request was received via SMS
SMS received:Request Version	A firmware version request was received via SMS
SMS received:Change FTP parameters Server: [server] Login: [login] Password:[password]	A request to change FTP parameters was received via SMS
SMS received:Change GPRS number [number]	A request to change the GPRS call number was received via SMS
SMS received:Change GPRS APN [apn]	A request to change the APN was received via SMS
SMS received:Change GPRS login [login]	An SMS to change the APN login was received
SMS received:Change GPRS password [password]	An SMS to change the APN password was received

Example:

```
<0>Apr 04 13:27:10 Application: FTP send debug file OK: /LOG/
prefixID_130404_132611_debug.log.gz

<0>Apr 04 14:26:16 Application: Firmware version: 2.05.10 Mar 25 2013

<0>Apr 04 14:26:16 Application: WAN connection opened

<0>Apr 04 14:26:17 Application: NTP synchronization OK

<0>Apr 04 14:26:17 Application: FTP send data file OK: /DATA/INV/
prefixID_INV_1_1_130404_142614.csv.gz

<0>Apr 04 14:26:17 Application: FTP send data file OK: /DATA/TIC/
prefixID_TIC_130404_142614.csv.gz

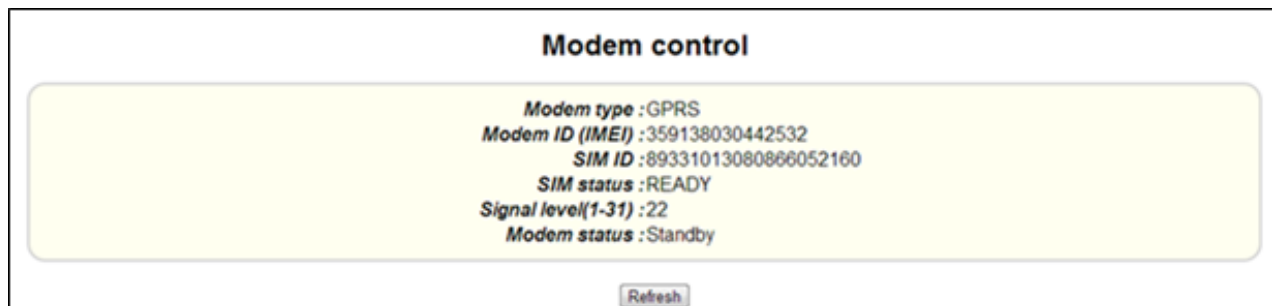
<0>Apr 04 14:26:18 Application: FTP send data file OK: /DATA/IO/prefixID_
IO_130404_142614.csv.gz
```

## 10.2 Modem Information

It is advisable to examine the information from the modem to check that it is operating correctly.

This is done by going to the page “Control/Modem” of the built-in Web server.

The following page is displayed:



The screenshot shows a web page titled "Modem control". Inside a yellow-bordered box, the following information is displayed:

- Modem type :GPRS
- Modem ID (IMEI) :359138030442532
- SIM ID :89331013080866052160
- SIM status :READY
- Signal level(1-31) :22
- Modem status :Standby

Below the yellow box is a "Refresh" button.

- Modem type: GPRS.
- Modem ID: IMEI number of the modem.
- SIM ID: ICCID number of the SIM card.
- SIM status: Status of the SIM card. The message may be:
  - READY: The SIM card has been inserted and the PIN code is correct. The gateway is ready to open a GPRS connection.
  - SIM PIN: The SIM card is waiting for a PIN code.
  - SIM PUK: The SIM card is waiting for a PUK code (after three unsuccessful attempts to enter a PIN code).
  - SIM ERROR: No SIM card has been inserted.
- Signal level: Quality of the GSM signal; range 1 to 31.

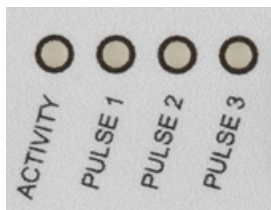


For an operational GPRS connection, this level must be at least 10.

- Modem status: The message may be:
  - Standby: modem not connected.
  - Initialization: modem establishing a connection.
  - Connected: modem connected.

## 10.3 LED Indicators

Activity LED can also flash slowly (1Hz) if the device is ready in ethernet mode or give a number of flash equivalent to the GPRS signal strength in modem mode.



LED	FUNCTION	STATUS	EXPLANATION
ACTIVITY	Operational status of the gateway	On continuously (hardware version V2)	Power on
		Flashing rapidly	Initialization
PULSE (x3)	Activity on Pulse inputs	Off continuously	No configuration
		On continuously	Initialization complete
		Impulsion	Pulse detected

Ethernet socket:

LED	FUNCTION	STATUS	EXPLANATION
Green LED: speed	Connection speed	Off	10 Mbps
		On	100 Mbps
Orange LED: link activity	Connection	Off	No connection
		On	Connection made
		Flickering	Data being sent or received

## 10.4 Installation Button

The INSTALL button, fitted on the front panel of the unit, enables forced connection or restart of the gateway as explained in the table:

ACTION	CONSEQUENCE
Press the INSTALL button for about 1 second until the SERVICE LED flashes	Besides the actions defined in §10.3.3 Connection, the gateway uploads the inverter parameter file.
Press the INSTALL button for about 10 seconds until all the LEDs on the gateway go out	The gateway restarts (the LEDs light up again about 1 minute after the restart begins)

## 10.5 Diagnostic SMS

Besides the configuration SMSs described in previous chapters, some SMSs can enable initial diagnosis of a problem with the WebdynPulse:

SMS	DESCRIPTION
connect	Requests a connection to the remote server
version (*)	Requests the current software version of the unit
reboot	Initiates a restart of the product



status (*)	Requests information on the current configuration of the unit: <ul style="list-style-type: none"> <li>• Unit type: WebdynPulse</li> <li>• Unit identifier (prefixID)</li> <li>• Software version</li> <li>• Connection mode (GPRS or LAN)</li> <li>• Information on the APN configured</li> <li>• SIM card identifier</li> <li>• GSM signal strength (RSSI)</li> <li>• Information on the Ethernet interface (IP, router, DNS, etc.)</li> <li>• Information on the remote FTP server</li> </ul>
diag (*)	Requests diagnostics on the unit interfaces: <ul style="list-style-type: none"> <li>• DI: status of the bang-bang inputs configured</li> <li>• DX: status of the index inputs configured</li> </ul>
factory	Initiates a factory reset of the unit

(\*) Operational only if the option to send SMSs is enabled.

## 10.6 Debug Traces

Occasionally, it is necessary to enable debug traces, so as to be able to diagnose a problem. This is done by providing values for the parameters listed below, in the configuration file `prefixID_config.ini`:

VARIABLE	DEFINITION	DEFAULT VALUE
Log_Enable	Enable/Disable debugging logs: 0=Disabled 1=Enabled Reserved for use by Webdyn in support mode	0

Log_Level	Level of detail in debugging logs: 0 Emerg (emergency) 1 Alert 2 Crit (critical) 3 Err (error) 4 Warning 5 Notice (default value) 6 Info (informational) 7 Debug Reserved for use by Webdyn in support mode	5
Log_RemoteIpAddr	Syslog destination address Reserved for use by Webdyn in support mode (up to 15 characters)	empty
Log_Port	Syslog destination port Reserved for use by Webdyn in support mode	2000
CFG_Debug	Enable/disable configuration traces: 0=Disabled 1=Enabled	0
IO_Debug	Enable/disable input/output traces 0=Disabled 1=Enabled	0
MODEM_Debug	Enable/disable modem traces. 0=Disabled 1=Enabled	0

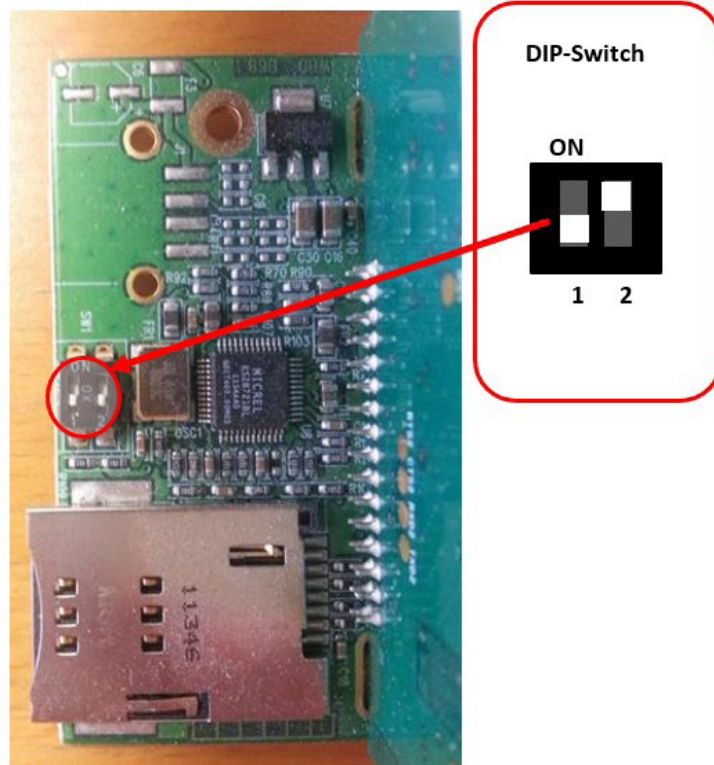


Enabling debug traces is likely to generate much greater GPRS traffic.

The traces are sent out via UDP and on every connection, stored in the directory /LOG of the remote FTP server in the form of a compressed file named prefixID\_YYMMDD\_hhmmss\_debug.log.gz.

## 10.7 Factory Reset Procedure

A mechanism to reset the gateway to its factory default parameter settings is provided to deal with problems of access to the WebdynPulse. To carry out this factory reset, please proceed as shown below:



- Turn off the power supply to the unit.
- Open the casing of the WebdynPulse to gain access to the configuration DIP switch.
- Set DIP switch 2 to ON.
- Turn on the power supply to the unit.
- Wait for the unit to restart automatically, after all the LEDs flash simultaneously (around 2 minutes).
- Reset DIP switch 2 to OFF.
- Close the unit.



A factory reset does not delete the collected data.

# Sales Contact

## SPAIN

C/ Alejandro Sánchez 109  
28019 Madrid

Phone 1: 902.19.81.46  
Phone 2: +34-91.560.27.37  
Email: [contact@webdyn.com](mailto:contact@webdyn.com)

## FRANCE

26 Rue des Gaudines  
78100 Saint-Germain-en-Laye

Phone: +33.139042940  
Email: [contact@webdyn.com](mailto:contact@webdyn.com)

## INDIA

803-804 8th floor, Vishwadeep Building  
District Centre, Janakpurt, 110058 New Delhi

Phone: +91.1141519011  
Email: [purchase-india@webdyn.com](mailto:purchase-india@webdyn.com)

## PORTUGAL

LusoMatrix Lda.  
Av. Coronel Eduardo Galhardo 7-1°C  
1170-105 Lisbon, Portugal

Phone: +351.218162625  
Email: [comercial@lusomatrix.pt](mailto:comercial@lusomatrix.pt)

## APAC

9F, No. 156, Sec. 3, Minsheng E. Rd.  
Songshan Dist., Taipei City 10596, Taiwan

Phone: +886.965333367  
Email: [ahsu@matrix.es](mailto:ahsu@matrix.es)

## AUE

Dubai

Phone: +34.915602737  
Email: [hperchin@matrix.es](mailto:hperchin@matrix.es)

## USA

Chicago

Phone: +34.915602737  
Email: [jcabezas@matrix.es](mailto:jcabezas@matrix.es)