WeOS

FDV-206-1D1S

FALCON SERIES
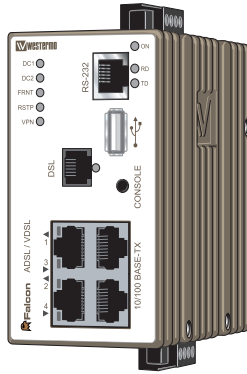
Falcon

The Industrial Broadband Router

WESTERMO

www.westermo.com

Software tools

Related software tools are available in the folder software tools under technical support on the Westermo website.

License Information

This device contains public available software which is under the GPL license.
For more information see legal.pdf included with all firmware releases.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. http://www.openssl.org

Legal information

The contents of this document are provided "as is". Except as required by applicable law, no warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy and reliability or contents of this document. Westermo reserves the right to revise this document or withdraw it at any time without prior notice.

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More information about Westermo can be found at the following Internet address:

http://www.westermo.com

Safety

⚠️ **Before installation:**

Read this manual completely and gather all information on the unit. Make sure that you understand it fully. Check that your application does not exceed the safe operating specifications for this unit.

This unit should only be installed by qualified personnel.

This unit should be built-in to an apparatus cabinet, or similar, where access is restricted to service personnel only.

The power supply wiring must be sufficiently fused, and if necessary it must be possible to disconnect manually from the power supply. Ensure compliance to national installation regulations.

This unit uses convection cooling. To avoid obstructing the airflow around the unit, follow the spacing recommendations (see Cooling section).

⚠️ **Before mounting, using or removing this unit:**

Prevent access to hazardous voltage by disconnecting the unit from power supply. Warning! Do not open connected unit. Hazardous voltage may occur within this unit when connected to power supply.

Care recommendations

Follow the care recommendations below to maintain full operation of unit and to fulfil the warranty obligations.

This unit must not be operating with removed covers or lids.

Do not attempt to disassemble the unit. There are no user serviceable parts inside.

Do not drop, knock or shake the unit, rough handling above the specification may cause damage to internal circuit boards.

Do not use harsh chemicals, cleaning solvents or strong detergents to clean the unit.

Do not paint the unit. Paint can clog the unit and prevent proper operation.

Do not expose the unit to any kind of liquids (rain, beverages, etc). The unit is not waterproof. Keep the unit within the specified humidity levels.

Do not use or store the unit in dusty, dirty areas, connectors as well as other mechanical part may be damaged.

If the unit is not working properly, contact the place of purchase, nearest Westermo distributor office or Westermo Tech support.

Fibre connectors are supplied with plugs to avoid contamination inside the optical port.

As long as no optical fibre is mounted on the connector, e.g. for storage, service or transportation, should the plug be applied.

Maintenance

No maintenance is required, as long as the unit is used as intended within the specified conditions.

Agency approvals and standards compliance

Type	Approval / Compliance
EMC	EN 55024, EN 55024 A1, EN 55024 A2, Electromagnetic compatibility – Immunity IT equipment
	EN 55022, EN 55022 A1, Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement
	EN 61000-6-2, Immunity industrial environments
	EN 61000-6-4, Emission industrial environments
	EN 61000-6-3, Emission residential, commercial and light-industrial environments
	FCC part 15 Class A and Class B
	EN 50121-4, Railway signalling and telecommunications apparatus
Safety	EN 60950-1, IT equipment

FCC Part 15.105 Notice: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

⠿ Reorient or relocate the receiving antenna

⠿ Increase the separation between the equipment and receiver

⠿ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

⠿ Consult the dealer or an experienced radio/TV technician for help.

Declaration of Conformity

Westermo
Westermo Teleindustri AB

Declaration of conformity

The manufacturer   Westermo Teleindustri AB
                        SE-640 40 Stora Sundby, Sweden

Herewith declares that the product(s)

Type of product	Model		Art no
Industrial ADSL/VDSL router	FALCON	FDV-206-1D1S	3660-0100

is in conformity with the following EC directive(s).

No	Short name
2004/108/EC	Electromagnetic Compatibility (EMC)
1999/5/EC	Radio equipment and Telecommunications terminal equipment (R&TTE)

References of standards applied for this EC declaration of conformity.

No	Title	Issue
EN 50121-4	Railway applications – Electromagnetic compatibility – Emission and immunity of the signalling and telecommunications apparatus	2006
EN 55022	Information technology equipment - Emission	2006 +A1:2007
EN 55024	Information technology equipment - Immunity	1998 +A1:2001 +A2:2003
EN 61000-6-1	Electromagnetic compatibility – Immunity for residential environments	2007
EN 61000-6-2	Electromagnetic compatibility – Immunity for industrial environments	2005
EN 61000-6-4	Electromagnetic compatibility – Emission for industrial environments	2007
EN 60950-1	Information technology equipment - Safety	2006 +A11:2009

The last two digits of the year in which the CE marking was affixed: 10

_____
Signature

Pierre Öberg
Technical Manager
1st September 2010

Postadress/Postal address	Tel.	Telefax	Postgiro	Bankgiro	Org.nr/ Corp. identity number	Registered office
S-640 40 Stora Sundby Sweden	016-428000 Int+46 16428000	016-428001 Int+46 16428001	52 72 79-4	5671-5550	556361-2604	Eskilstuna

Type tests and environmental conditions

Phenomena	Test	Description	Test levels
ESD	EN 61000-4-2	Enclosure contact	± 6 kV
		Enclosure air	± 8 kV
RF field AM modulated	EN 61000-4-3	Enclosure	20 V/m 80% AM (1 kHz), 80 – 2 700 MHz
Fast transient	EN 61000-4-4	Signal ports	± 2 kV
		Power ports	± 2 kV
Surge	EN 61000-4-5	Signal ports unbalanced	± 2 kV line to earth, ± 2 kV line to line
		Signal ports balanced	± 2 kV line to earth, ± 1 kV line to line
		Power ports	± 2 kV line to earth, ± 2 kV line to line
RF conducted	EN 61000-4-6	Signal ports	10 V 80% AM (1 kHz), 0.15 – 80 MHz
		Power ports	10 V 80% AM (1 kHz), 0.15 – 80 MHz
Pulse magnetic field	EN 61000-4-9	Enclosure	300 A/m, 6.4 / 16 µs pulse
Voltage dips and interruption	EN 61000-4-29	DC power ports	10 & 100 ms, interruption 10 ms, 30% reduction 10 ms, 60% reduction +20% above & −20% below rated voltage
Radiated emission	EN 55022	Enclosure	Class A
	FCC part 15		Class A
Conducted emission	EN 55022	AC power ports	Class B
	FCC part 15	AC power ports	Class B
	EN 55022	DC power ports	Class B
Dielectric strength	EN 60950	Signal port to other isolated ports	1.5 kVrms 50 Hz 1 min
		Power port to other isolated ports	3 kVrms 50 Hz 1 min 2 kVrms 50 Hz 1 min (@ rated power <60 V)
Temperature		Operating	−20 to +70°C
		Storage & Transport	−40 to +85°C
Humidity		Operating	5 to 95% relative humidity
		Storage & Transport	5 to 95% relative humidity
Altitude		Operating	2000 m / 70 kPa
Reliability prediction (MTBF)	MIL-HDBK- 217F	Operating	580 000 hours @ 25°C
Service life		Operating	10 year
Vibration	IEC 60068-2-6	Operating	5 – 20 Hz: 2 m²/s³ 20 – 200 Hz: − 3 dB/oct 3 axis = 3 * 30 min
Shock	IEC 60068-2-27	Operating	6 ms 1000 m/s² 6 directions, 3 shocks / direction
Enclosure	UL 94	PC / ABS	Flammability class V-1
Dimension W x H x D			52.5 x 100 x 101 mm
Weight			0.6 kg
Degree of protection	IEC 529	Enclosure	IP 40
Cooling			Convection
Mounting			Horizontal on 35 mm DIN-rail

Description

Falcon, The Industrial Broadband Router. Falcon is the first purpose built INDUSTRIAL VDSL2 router and delivers secure, high-speed access to vital remote assets.

Many broadband circuits are still using ADSL and the Falcon has therefore been designed to operate on ADSL / ADSL2 / ADSL2+ lines as well.

Incredibly compact and built into a purpose designed case with an integrated DIN rail clip, the Falcon has an operational temperature between −20 to +70°C and is designed to operate in industrial EMC levels. High MTBF figures lead to an expected service life of more than 10 years.

The Falcon comes equipped with a built in 4 port layer 3 routing switch and can cope with older legacy devices running RS-232 with its built in device server interface, making it perfect for analogue modem replacement projects.

The Westermo Operating System (WeOS) is a feature rich operating system designed for the industrial markets. It provides the Falcon with cyber security functionality, such as DMZ, IPsec VPNs and a stateful inspection firewall configured to be secure by default.

Interface specifications

Power	
Rated voltage	24 to 48 VDC
Operating voltage	19 to 60 VDC
Rated current	460 mA @ 24 VDC 220 mA @ 48 VDC
Rated frequency	DC
Inrush current, I^2t	1 mA²s @ 24 VDC 3 mA²s @ 48 VDC
Startup current*	760 mApeak @ 24 VDC 500 mApeak @ 48 VDC
Polarity	Reverse polarity protected
Redundant power input	Yes
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 12)
Shielded cable	Not required

* With fully loaded USB port. External supply current capability for proper startup

RS-232	
Electrical specification	EIA RS-232
Data rate	300 bit/s – 115.2 kbit/s
Data format	7 or 8 data bits, Odd, even or none parity, 1 or 2 stop bits
Protocol	Transparent, optimised by packing algorithm
Circuit type	SELV
Transmission range	15 m / 49 ft
Isolation to	Power, DSL, Ethernet
Galvanic connection to	USB, Console
Connection	RJ-45*
Shielded cable	Not required
Conductive housing	Yes
Number of ports	1

* RJ-45 to RS-232 converter cable included.

| Ethernet TX	
Electrical specification	IEEE std 802.3. 2005 Edition
Data rate	10 Mbit/s, 100 Mbit/s, manual or auto
Duplex	Full or half, manual or auto
Transmission range	150 m, according to long cable specification
Isolation to	All other
Connection	RJ-45 auto MDI/MDIX
Shielded cable	Not required, except when installed in Railway applications as signalling and telecommunications apparatus and located close to rails.*
Conductive housing	Yes
Number of ports	4

* To minimise the risk of interference, a shielded cable is recommended when the cable is located inside 3 m boundary to the rails and connected to this port.
The cable shield should be properly connected (360°) to an earthing point within 1 m from this port.
This earthing point should have a low impedance connection to the conductive enclosure of the apparatus cabinet, or similar, where the unit is built-in. This conductive enclosure should be connected to the earthing system of an installation and may be directly connected to the protective earth.

Console	
Electrical specification	TTL-level
Data rate	115.2 kbit/s
Data format	8 data bits, none parity, 1 stop bit, no flow control
Circuit type	SELV
Transmission range	15 m
Isolation to	Power, DSL, Ethernet
Galvanic connection to	Serial, USB
Connection	2.5 mm jack, use Westermo cable 1211-2027

USB	
Electrical specification	USB 2.0 host interface
Data rate	Up to 12 Mbit/s (full-speed mode)
Circuit type	SELV
Maximum supply current	500 mA
Isolation to	Power, DSL, Ethernet
Galvanic connection to	Serial, Console
Connection	USB receptacle connector type A

I/O / Relay output	
Connect resistance	30 Ω
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 -12)
Maximum voltage/current	60 VDC / 80 mA

I/O / Digital input	
Voltage levels	Logic one >12V, Logic zero <1V
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 -12)

DSL	
Electrical specification	See standard table below
Data rate	250 Mbit U/D, limited to 100 Mbit
Protocol	EFM (VDSL2), LLC/VC-MUX encap Ethernet (ADSL), PPPoE (ADSL / VDSL2)
Isolation to	All other
Connection	RJ-11
Shielded cable	Not required, except when installed in Railway applications as signalling and telecommunications apparatus and located close to rails.*
Number of ports	1

Standard	Annex
ETSI TS 101 270	N/A
ITU-T 993.2 (VDSL2)	A, B
T1.424	N/A
ITU-T G.992.1 (ADSL)	A, B (non overlap)
ITU-T G.992.2 (ADSL lite)	A (non overlap)
ITU-T G.992.3 (ADSL2)	A, B, I, L, M (non overlap)
ITU-T G.992.5 (ADSL2+)	A, B, I, M (non overlap)
ANSI T1.413	N/A

* To minimise the risk of interference, a shielded cable is recommended when the cable is located inside 3 m boundary or the cable is longer than 30 m and inside 10 m boundary to the rails and connected to this port.

Location of interface ports and LED's

LED Indicators (for details see page 14)

Power Connection (for details see page 8 and 12)
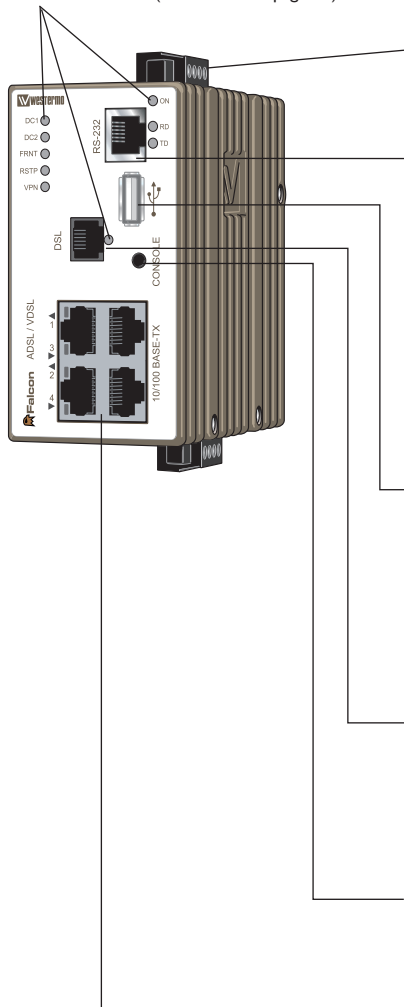
RS-232

Position	Direction*	Description
No. 1	Out	DSR (Data Set ready)
No. 2	Out	DCD (Data Carrier Detect)
No. 3	In	DTR (Data Terminal ready)
No. 4	In/Out	SG (Signal Ground)
No. 5	Out	RD (Receive Data)
No. 6	In	TD (Transmit Data)
No. 7	Out	CTS (Clear To Send)
No. 8	In	RTS (Request To Send)

USB

Position	Direction*	Description
No. 1	Out	VBUS
No. 2	In/Out	D–
No. 3	In/Out	D+
No. 4	Out	GND
Shield	In/Out	Connected to protective earth

DSL

Position	Direction*	Description
No. 1	–	
No. 2	In/Out	2-wire Receive/Transmit DSL
No. 3	In/Out	2-wire Receive/Transmit DSL
No. 4	–	
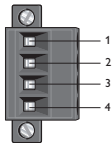
Console
(for details see page 9 and 13)

Ethernet TX

Position	Direction*	Description
No. 1	In/Out	TD+
No. 2	In/Out	TD–
No. 3	In/Out	RD+
No. 4	–	Not connected
No. 5	–	
No. 6	In/Out	RD–
No. 7	–	Not connected
No. 8	–	Not conneced
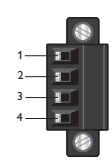
* Direction relative this unit.

Power connection

| 4-position	Product marking	Direction	Description
No. 1	+DC1	Input	Supply voltage input DC1
No. 2	+DC2	Input	Supply voltage input DC2
No. 3	-COM	Input	Common
No. 4	-COM	Input	Common

Falcon supports redundant power connection. The positive inputs are +DC1 and +DC2, the negative input for both supplies are –COM. Connect the primary voltage (e.g. +24 VDC) to the +DC1 pin and return to one of the –COM pins on the power input.
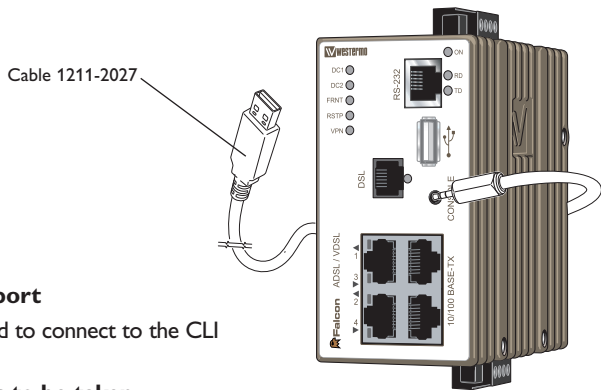
I/O connection

4-position	Product marking	Direction	Description
No. 1	Status +	Output	Alarm relay (status) contact
No. 2	Status −	Output	Alarm relay (status) contact
No. 3	Digital in +	Input	Digital in +
No. 4	Digital in −	Input	Digital in −

The Status output is a potential free, opto-isolated normally closed solid-state relay.
This can be configured to monitor various alarm events within the Falcon unit, see WeOS Management Guide.
An external load in series with an external voltage source is required for proper functionality.
For voltage/current ratings, see Interface Specification section.

The Digital in is an opto-isolated digital input which can be used to monitor external events. For voltage/current ratings, see Interface Specification section:
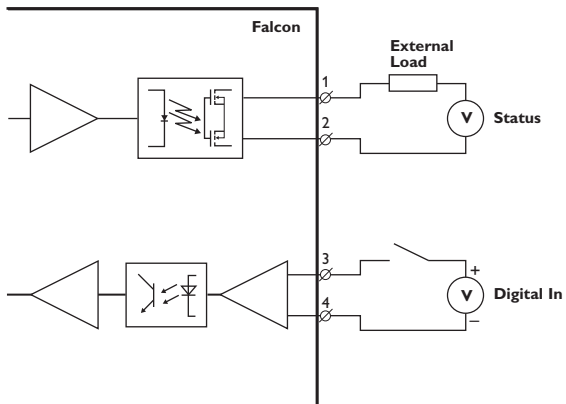
Cable 1211-2027

Connection to console port

The console port can be used to connect to the CLI (Command Line Interface).

The following steps needs to be taken

1. Connect the serial diagnostic cable to the console port (use only Westermo cable 1211-2027).
2. Connect cable to your computer (USB port, if drivers are needed they can be downloaded from our Web page).
3. Use a terminal emulator and connect with correct speed and format (115200, 8N1) to the assigned port.

For more information about the CLI, see the WeOS management guide.

LED indicators

LED	Status	Description
ON	OFF	Unit has no power
	GREEN	All OK, no alarm condition.
	RED	Alarm condition, or until unit has started up. (Alarm conditions are configurable, see "WeOS Management Guide")
	FLASH	Location indicator ("Here I am!"). Activated when connected to IPConfig Tool, or upon request from Web or CLI.
DC1	OFF	Unit has no power
	GREEN	Power OK on DC1.
	RED	Power failure on DC1.
DC2	OFF	Unit has no power
	GREEN	Power OK on DC2.
	RED	Power failure on DC2.
VPN	OFF	VPN disabled.
	GREEN	(Configurable) Default: At least one VPN tunnel up and OK
	RED	(Configurable) Default: All VPN tunnels down.
RSTP	OFF	RSTP disabled.
	GREEN	RSTP enabled.
	BLINK	Unit elected as RSTP/STP root switch.
FRNT	OFF	FRNT disabled.
	GREEN	FRNT OK.
	RED	FRNT Error.
	BLINK	Unit configured as FRNT focal point.
DSL	OFF	No xDSL link
	GREEN	xDSL link established
	GREEN BLINK	xDSL link negotiation
RD	OFF	No serial data transmitted
	GREEN FLASH	Serial data transmitted
TD	OFF	No serial data received
	GREEN FLASH	Serial data received
Copper ports Port 1-4	OFF	No link
	GREEN	Link established
	GREEN FLASH	Data traffic indication
	YELLOW	Port alarm and no link. Or if FRNT or RSTP mode, port is blocked.
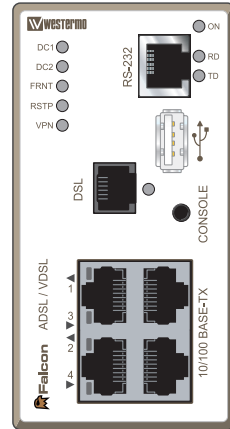
Mounting

This unit should be mounted on 35 mm DIN-rail, which is horizontally mounted inside an apparatus cabinet or similar. It is recommended that the DIN-rail is connected to ground. Snap on mounting, see figure.
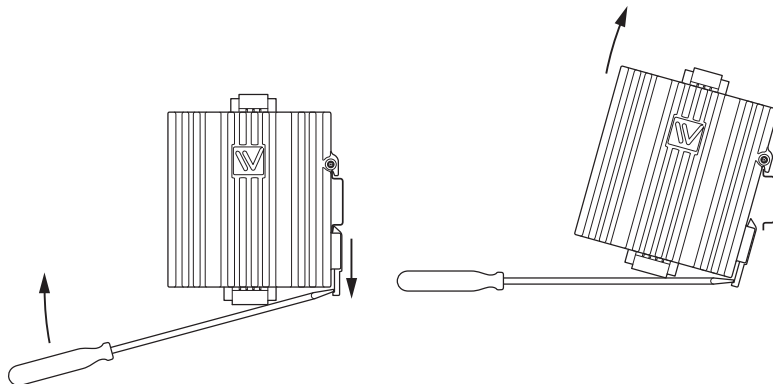
Mounting Falcon with integrated DIN-clip:

CLICK!
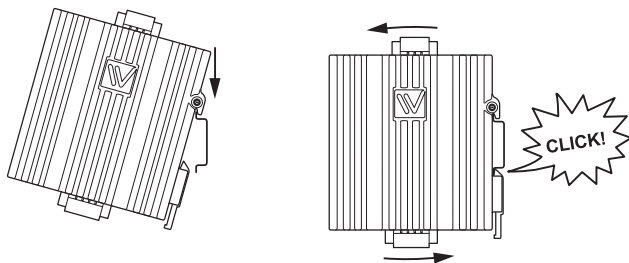
Removal

Removing Falcon with integrated DIN-clip:
Press down the support at the back of the unit using a screwdriver. See figure.

Cooling

This unit uses convection cooling. To avoid obstructing the airflow around the unit, use the following spacing rules. Minimum spacing 25 mm (1.0 inch) above / below and 10 mm (0.4 inches) left / right the unit. Spacing is recommended for the use of unit in full operating temperature range and service life.

10mm   10mm
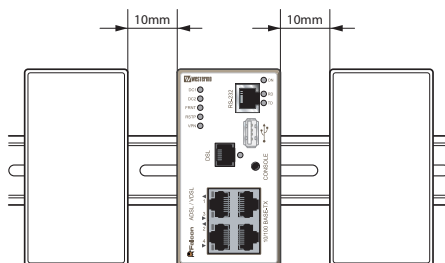
Factory default

It is possible to set the unit to factory default settings by using two standard Ethernet RJ-45 cables.

1. Power off the switch and disconnect all Ethernet cables (copper and fibre).
2. Connect one Ethernet cable between Ethernet ports 1 and 4, and the other between Ethernet ports 2 and 3.
   The ports need to be connected directly by an Ethernet cable, i.e., not via a hub or switch. Use a straight cable – not a cross-over cable – when connecting the ports.
3. Power on the unit.
4. Wait for the unit to start up. Control that the ON LED is flashing red.

The ON LED flashing indicates that the unit is now ready to be reset to factory default. You now have the choice to go ahead with the factory reset, or to skip factory reset and boot as normal.

- Go ahead with factory reset:
  Acknowledge that you wish to conduct the factory reset by unplugging the Ethernet cables. The ON LED will stop flashing.
  This initiates the factory reset process*, and after approximately 1 minute the unit will restart with factory default settings. When the switch has booted up, the ON LED will show a green light, and is now ready to use.
- Skip the factory reset:
  To skip the factory reset process, just wait for approximately 30 seconds (after the ON LED starts flashing RED) without unplugging the Ethernet cables. The switch will conduct a normal boot with the existing settings.

* **Note** Do not power off the unit while the factory reset process is in progress.

Default Network Settings

IP address (Ethernet ports)	192.168.2.200
Netmask (Ethernet ports)	255.255.255.0
Gateway	Acquired from the provider via DHCP
Username	admin
Password	westermo

Default DSL Settings

|	
DSL Connection type	ADSL/ADSL2/ADSL2+ on Annex A
VPI / VCI	8 / 35
Authentication	Routed / DHCP acquired IP

Getting Started

Westermo Operating System (WeOS) provides several different ways to configure a unit:

Web	Configuration of the unit using the Made Easy Web Interface.
Command Line Interface (CLI)	Configuration of the unit via the Command Line Interface. Provides the most advanced settings and diagnostics tools. Accessible via SSH or the console cable, Westermo article number 1211-2027.
IPConfig tool	Discover your Westermo devices and configure basic settings, mainly the IP address. Use this tool if you cannot connect to the unit with it's current IP address. For more information about the IP Config Tool and how to use it, see chapter 4 in the Management Guide. **Note! IP** Config Tool version must be **10.4.0** or higher.

The recommended and most easy to use selection is the web-based management tool.

Step-by-step guide to configure a DSL-connection using the web interface

Power Connection

ADSL/VDSL2
connection (RJ-11)

PC/Ethernet
connection (RJ-45)
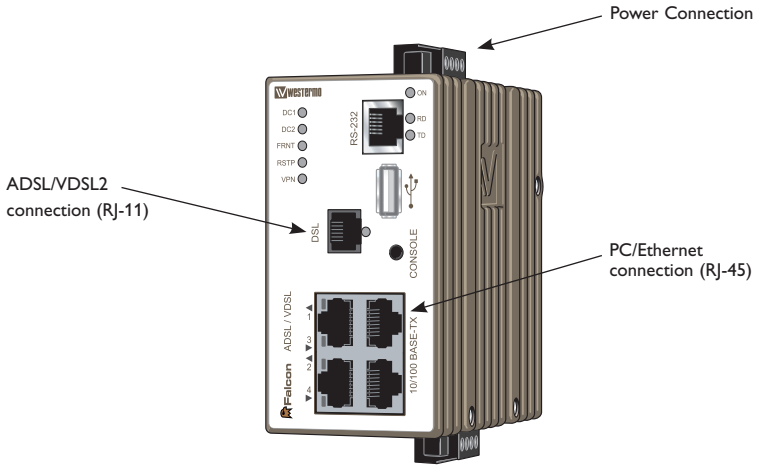
Step 1 – Power-up the unit and wait for it to become ready

Connect the Falcon to the DSL-network using the RJ-11, connect an RJ-45 cable from one of the four Ethernet-ports to your PC, and then connect the unit to an appropriate PSU and power it up.

The unit will start to negotiate the DSL-connection after approximately 15 – 20 seconds, please note that the default settings might not be appropriate for your specific connection. Continue reading in order to assure that you have a valid setup.

Step 2 – Configure your PC

Make the following changes in your PC.

IP address	192.168.2.100*
Netmask (Ethernet ports)	255.255.255.0
Gateway	192.168.2.200
Preferred DNS server	192.168.2.200

* Can be any address in the 192.168.2.0-255-range except 192.168.2.200.

Note! If you are unsure or unable to change the above – consult your network administrator.

Step 3 – Accessing the unit
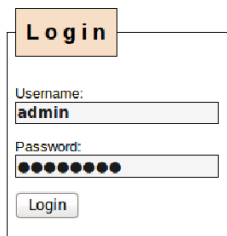
Start a web browser on your PC and type in the following address
http://192.168.2.200

Step 4 – Login screen

After step 3 you will be presented with a login
screen which asks for a username and a
password. Please type in the following

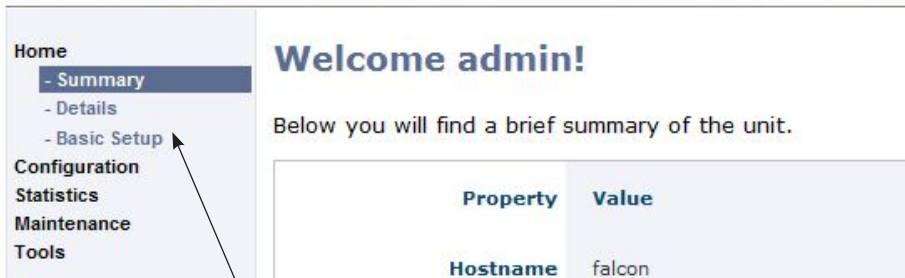Username   **admin**
Password   **westermo**

Step 5 – Welcome screen

You have now successfully logged into the unit and are ready to set up your DSL-
connection using the simplified Basic setup-page

Please click on **Basic Setup** under the **Home**-menu item.

Step 6 – Basic Setup

The Falcon comes pre-configured to match connections using ADSL with VPI/VCI set to 8/35, no authentication and acquiring the IP via DHCP. Should the default settings not match your connection you can always change the parameters to match your specific details.

In the Basic Setup screen you configure the DSL-broadband connection according to the information you received from your service provider.

ADSL Settings per country					
Country	Provider	Annex	Mode	ATM Enc.	VPI / VCI
Sweden	TeliaSonera	A	DHCP	LLC	8/35
Germany	Deutsche Telekom (DT)	B	PPPoE	LLC	1/32
United Kingdom	British Telecom (BT)	A	PPPoE	LLC	0/38

In the screen below the Falcon is reconfigured to use PPPoE with a username and a password as authentication, typically you would receive these details from your service provider.
The unit is also changed from Annex A (PSTN) to Annex B (ISDN) and the VPI/VCI settings have been set to match a Deutsche Telekom connection in Germany.

WAN profile	Router
Router Mode	○ DHCP ⦿ PPPoE ○ Static address
PPPoE Settings	For advanced setup enter configuration context.
Username	username
Password	password

DSL Port Settings

Mode	ADSL
ADSL	
ATM Encapsulation	LLC Bridged
ATM PVC Framing	
VPI	8
VCI	35
Annex A=POTS B=ISDN	⦿ A ○ B
Filter (External Splitter)	⦿ Yes ○ No

Apply   Cancel

Press **Apply** when you have configured the unit according to your provider details.

Step 7 – Unit ready and online

The Falcon will immediately start to negotiate the DSL-connection with the new details after Step 6. To monitor the connection progress, navigate to Statistics → DSL.
Under Negotiated State you see the status of the DSL-connection, if it reads Sync State it means you have a successful connection.

Step 8 – Verify that you have a WAN IP Address

Verify that you have a received an IP address for the WAN connection by navigating to Configuration → Network (IP) → Interface. Look at the column under Address.
In the example below the address on the WAN-interface, vlan1006, is **78.72.35.169**.

Step 9 – Verify that you have a default gateway address

Your Falcon now have a WAN IP-address assigned to it from the service provider, next step is to verify that there is a default gateway address. Navigate to Configuration → Network (IP) → Global settings and verify that you have an address in the Default Gateway-field.

Step 10 – Test your connection

In your Internet browser type in www.westermo.com and test your connection, you should be able to see the Westermo website.

You are now ready to use the Falcon Industrial Broadband Router!

Common questions

Q: What is this vlan1006 that I see, can I delete it?

A: Generally, no you can't. Vlan1006 is your WAN-interface, i.e. your DSL-connection.

Q: I can't access the unit on the WAN-IP-address, is there a firewall?

A: Yes, the unit is configured with a default firewall that won't let you in unless you open the firewall.
Navigate to Network (IP) → Interface → Click on the little pen-icon next to vlan1006.
Under Management Services please open up for the services you want to access. Then press **Apply**.

Q: I don't want any firewall but when I disable the firewall I cannot access the Internet anymore. Why?

A: There are certain rules in the firewall that needs to be enabled in order for the routing between the WAN-interface (DSL) and the LAN-interface (Ethernet) to work correctly. If you disable the firewall those rules are removed. For more information read Chapter 23 in the Management Guide.

Referring documents

Type	Description	Document number
Management Guide	Westermo OS management guide	6101-3201

Westermo • SE-640 40 Stora Sundby, Sweden
Tel +46 16 42 80 00 Fax +46 16 42 80 01
E-mail: info@westermo.com
www.westermo.com

Sales Units
Westermo Data Communications

China
sales.cn@westermo.com
www.cn.westermo.com

France
infos@westermo.fr
www.westermo.fr

Germany
info@westermo.de
www.westermo.de

North America
info@westermo.com
www.westermo.com

Singapore
sales@westermo.com.sg
www.westermo.com

Sweden
info.sverige@westermo.se
www.westermo.se

United Kingdom
sales@westermo.co.uk
www.westermo.co.uk

Other Offices

For complete contact information, please visit our website at www.westermo.com/contact or scan the QR code