The Draper Digital Network IP Interface is a serial device server used to connect the RS485 SDN BUS consisting of ILT2 motors and control devices to a managed LAN network. The firmware of the IP Interface is remotely upgradeable over the Internet. The SDN IP Interface contains an internal Web server with configuration software that is accessed via any standard Web browser. The IP Interface is compatible with both the PC and the Mac platforms.

**Main software features:**

An almost unlimited number of personalized GUls can be configured and created, remotely deployed and then accessed from a link on the individual users desktop allowing personal solar shading control. The Graphical User Interface actions have associated URL commands for interfacing with 3rd party IP control systems. Remote access to the IP Interface for configuration and remote diagnostics is available through HTTP port 80, un-proxied. Completely automated shade movements can be programmed via internal time scheduling and solar angle utility.

**LAN:**

Ethernet: 10/100 Mbps, RJ45
Protection: Built-in 1.5 KV magnetic isolation

**Serial Interface:**

Interface: RS-232 (Half duplex RS-485 with adapter)
No. of Ports: 1
Port Type: DB9 (Male)
Transmission Speed: 1.2 -115 Kbps
Signals: Tx, Rx, RTS, CTS, DTR, DSR, DCD, GND
Serial Line Protection: 15 KV ESD for all signals

**Serial Communication Parameters:**

Parity: None, Even, Odd, Space, Mark
Data Bits: 5,6,7,8

**Power Requirements:**

Power Input: 9 to 18 VDC
Power Consumption: 300 mA@12V

**Mechanical:**

Casing: Steel case (1 mm)
Dimensions (w x H x D): 2.87 x 1.00 x 3.75 in
Gross Weight: 0.580 kg

**Software Features:**

Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Configuration: Web console, Telnet console

**Environment:**

Operating Temperature: 0 to 55°C (32 to 131OF), 5 to 95%RH, non-condensing
Storage Temperature: -20 to 85°C (-4 to 185°F), 5 to 95%RH, non-condensing

**Regulatory Approvals:**

EMC FCC Class A, CE Class A, Safety UL, CUL, TÜV

**Warranty:**

5 years
The Draper Digital Network which is run from the IP interface mentioned on the previous page is programmed through a series of actions. These actions and items used to program the system are constantly changing so it is required to contact Draper before programming a Digital Network. Here are the items that you will currently need to program a Draper Digital Network.

1. Laptop Computer
2. RS 485 adaptor cable - Draper can direct you where to buy.
3. DB9 to Cat 5 convertor - Draper can direct you where to buy.
4. Cat 5 patch cord at least 3' long
5. ILT TAP - Buy from Draper
6. 9V battery
7. GUI for programming - Draper will provide GUI

With these items, you will be able to obtain motor addresses and set group address to operate shades in the desired groups, up to 16 groups per motor.

The first part of installing a Draper Digital Network is to obtain the address of each motor and note the address on a planning sheet or building floor plan. To obtain a motor address, you will need to do the following.

1. Power must be on to the shade.
2. You will need the GUI installed on your laptop.
3. You will connect the laptop to the low voltage line on the motor. This is done by connecting the RS 485 adaptor cable to the laptop, the DB9 adaptor to the RS 485 cable, a Cat 5 cable from the DB9 to the ILT tap, and then you plug the motor into the ILT tap. A 9V battery or transformer will need to be supplying power to the tap to work.
4. You will then bring up the motor GUI and hit the “GET ADDRESS” button to retrieve the motor address.
5. You will then need to mark down the address on a planning sheet or floor plan.

The next part of the install is the planning out of groups for operating the shades. You have the motor address, but you need to decide what groups you want the motor to belong to by assigning like group addresses with different motors. If two motors have the same address in any group, then they will run together when that address is told to go up or down. Steps to consider in grouping shades are:

1. Each motor address must be 6 characters long using numbers 0-9 and A-F.
2. You have 16 group addresses per motor.
3. Any two shades with the same address in them, whether it is a group 1 or group 5 or group 16 address, will work together.
4. If using smart switches or virtual switches, you will want to program an individual address to each motor to make motor changes easier.
The next part of the install is to program the group addresses. For this you will have to check several different things:

1. Are the low voltage lines from the motors going to an ILT Tap? Are the ILT Taps connected together with Cat 5? Do you have a 12V transformer feeding power to every 40 ILT Taps?
2. You may use a splitter to put up to 3 motors in an ILT Tap, but a motor cannot have more than 30' of cable between it and an ILT Tap even with a splitter.
3. If the Draper Digital Network is programmed and powered, then you may plug your computer into an ILT Tap on the network and program.
4. The laptop will plug in as before, but the ILT Tap that it now plugs into will be on the network.
5. You will pull up the GUI that you used to get the motor address.
6. You will type in a motor address that you wish to program and hit the “GET DATA” button.
7. The motor will talk back. If you get an error, then you need to check your set-up as communication is not getting to the motor.
8. You will then change the group addresses to be as you want them and hit “Compute IP Range”, then hit the “Send Data” button. This will program the motor with the addresses that you want.
9. You will then proceed back to step 6 for the next motor address until all motors are programmed.

Lastly, you will program smart switches and the IP interface to the switch configuration that you want. You program the IP interface and smart switch as follows.

1. A smart switch is programmed with the same set-up as you used to get a motor address. Except, you will plug in a smart switch not a motor, but you will plug a smart switch into the ILT Tap by connecting the Cat 5 to the switch.
2. You will pull up a GUI on your laptop for programming the switch and you will determine what addresses you want the switch to send when buttons are pressed.
3. To program the IP interface, you will need to connect to the server. You will type in the IP address of the interface and access the settings on the interface.
4. At the settings page, you will set up virtual buttons and what actions you want behind each button.

Programming switches, motor, and IP interface will have more details than this so please use these pages as a reference for the amount of work done to program the system.
RS485-ILT Link

DESCRIPTION
The RS485-ILT Link will enable third party communication to Somfy's line of intelligent (ILT) motors, and for programming and receiving addresses from intelligent motors.

MECHANICAL SPECIFICATIONS
Overall Dimensions: L: 3\(\frac{1}{8}\) in. W: 2\(\frac{3}{8}\) in. H: \(\frac{3}{4}\) in.

CONNECTION DIAGRAM
A termination resistor of at least 120ohms should be placed only at the extreme ends of the data line, and no more than two resistors should be placed in any system that does not use repeaters.

ORDERING INFORMATION
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<th>Description</th>
<th>Part Number</th>
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<tr>
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</table>
Draper Digital Network (DDN)—Sample Configuration

Control Room

Draper Digital Network IP Interface
Part No. C156.115

To LAN

12V DC Power Supply
Part No. C215.018

Part No. C216.118

6-Button Smart DDN Switch
Part No. C112.111

Part No. C112.112

Part No. C112.109

Part No. C112.114

Part No. C156.111

Part No. C156.112

Part No. C156.114

Control Tap
Part No. C156.111

256 Max. Nodes (tap or DDN switches)
4000 Feet Max. Network Cable Length
30 Feet Max. Tap-to-Motor Cable Length

Projection Screen

Window Shade

Window Shade

Window Shade

Window Shade

Projection Screen

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