



**Motor Limit Tool
Part # C202.047**

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Overview

The Motor Limit Tool uses an LCD display as an interface for the functions described in this document. The four buttons along the bottom of the device are used to navigate the menus and set the required configuration options.

The diagram shows the IntelliFlex I/O Motor Limit Tool control panel. It features a central LCD display with the DRAPER logo above it. The panel is equipped with several buttons: 'Open', 'Upper Limit', 'Close', 'Lower Limit', 'Back', 'Up' (triangle up), 'Enter', 'Down' (triangle down), 'Prev Stop', 'Add Stop', 'Next Stop', and 'Remove Stop'. Callout boxes provide detailed instructions for each button's function.

MOTOR LIMITS
ONLY AVAILABLE FOR
IntelliFlex I/O

Upper Limit & Lower Limit
Hold for 2 seconds to set the corresponding limit to current shade position.

Hold for 5 seconds to clear the corresponding limit.

MOTOR OPERATION

Open & Close
Tap to jog the motor open or closed a small distance.

Hold to move the motor until released.

PRESET STOPS

Prev & Next Stop
Tap to move to the previous/next preset stop.

Hold for 2 seconds to move to the shade limit in that direction.

ADD/REMOVE STOPS

Add Stop
Hold for 2 seconds to set a preset stop at the current location.

Remove Stop
Hold for 2 sec to remove the nearest preset stop.

Hold for 7 seconds to clear all preset stops.

Back
Used to navigate back in a menu or to stop editing a value and cancel the change.

Enter
Used to navigate to the selected menu item, or to begin editing a value and accept the value after editing.

Up & Down
Used to select the previous/next menu item or to edit a value.

Section 1 - Connecting to Devices

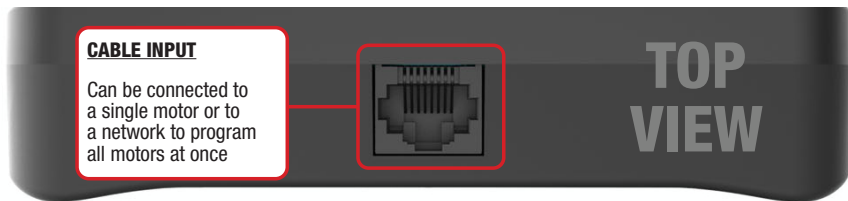
The Motor Limit Tool (MLTI) can be used in two ways:

Section 1.1 - Direct Connection

The Motor Limit Tool can be plugged directly into the data cable from an IntelliFlex I/O motor to configure each motor individually. When directly connected, only the motor configuration screen is available.

Section 1.2 - Networked Connection

The Motor Limit Tool can connect to an I/O network through the device port of a Network Device Connector (NDC) on the network. When connected in this way, any motor or device in network can be configured and all functions of the Motor Limit Tool are available. **Please Note:** Some sections only apply to a network connection as indicated.



Section 2 - Shade Properties

The Motor Limit Tool can be used to program both intelligent IntelliFlex I/O motors and standard motors connected to the I/O network using either 1 or 4 motor controllers (1MC or 4MC). The following properties can be configured using the MLT:

Section 2.1 - General Properties *(Available for All Shade and Motor Types)*

NAME

Default shade name is a unique identifier. This can be changed to a more descriptive name to make programming easier.

The naming convention supported by the Motor Limited Tool has 3 parts to the name:

BASE NAME – Can be blank or one of the following: Motor, North, South, East, West, Floor, Room.

NUMBER – Can be blank or any number up to 5 digits.

EXTENSION – Can be blank or any 2-digit number.

Some of the possible names using this convention include “Motor 15-2”, “South 15”, “Room 3452-5”, or something as simple as “5” if the base name and extension are omitted.

DIRECTION

Can be set to run in the normal or reversed direction.

PRESET STOPS

Up to 64 preset stops can be defined. Stops are a % between fully open (0%) and fully closed (100%).

Section 2.2 - Properties Specific to IntelliFlex I/O Motors

UPPER & LOWER LIMITS

Upper & Lower limits define the range that intelligent motors are able to move.

Section 2.3 - Properties Specific to Standard Motors

SHADE TYPE

Standard motors can be configured to be a Roller, Venetian Blind or Louver shade.

CALIBRATION

Standard motors must be calibrated to determine the run time for the motor as it moves between the mechanical limits that are set on the motor. This can be detected automatically or entered manually.

Section 2.4 - Properties Specific to Venetian Blinds

TILT TIME

The time required to tilt the blind from the fully closed position to the fully open position.

TILT STOPS

Up to 64 tilt stops can be defined. Shown as a percentage between tilted fully open (0%) and tilted fully closed (100%).

Section 3 - **Shade Group Properties**

IntelliFlex I/O control devices (*switches, sensors, contact closures, etc.*) are used to operate the shades on the network in various ways.

By default, all control devices operate as master controls, operating all motors on the network when activated.

The Motor Limit Tool allows up to 64 groups to be created for networks when control over specific shades is required.

Each shade can be assigned to any number of these groups.

For each group that a device controls, the following properties can be set:

PRIORITY

The default priority, Normal, can be changed to Low or High.

Higher priority devices will override the control of lower priority devices until the override is cleared.

PROFILE

Some control devices can operate with different profiles to perform different types of control.

OVERRIDE TIME

When a device operates a shade, it will override any lower priority devices until the override is cleared.

Override Time for the device can be set to automatically clear the override after the specified number of minutes.

Section 4 - Commissioning Process

The Motor Limit Tool can be used to program I/O networks of any size. This section outlines a process that can be followed to ensure this is done as quickly and easily as possible.

Section 4.1 - Preparation

Before programming the system, a drawing should be made of the network including the following information:

1. A name for each shade. See *Section 2 - Shade Properties* for a description of the types of names supported. Alternatively, the default unique identifier for each shade can be noted on the drawing during commissioning.
2. The groups that will be used by control devices to control the shades. Number the groups starting at 1, up to a maximum of 64.

This can be a simple hand-drawn sketch or an electronic drawing depending on the project.

Section 4.2 - Setting Limits, Direction, Name and Groups (I/O Motors Only)

The limits and direction for I/O motors are normally set as the shades are installed using a Direct Connection to the motor (see *Section 1 - Connecting to Devices*). At the same time the limits are set, the shade name and groups should be programmed as shown in the network drawing.

Alternatively, the default unique identifier for each shade can be noted instead of changing the name of the shade.

Section 4.3 - Verify Network

Once all shades and devices have been networked together and powered on, the Motor Limit Tool is used to verify the network is functioning correctly, and all devices are communicating.

Do not move on to further steps until all network issues have been resolved.

Section 4.4 -Setting Name, Groups and Calibrating *(Standard Motors Only)*

When standard motors are used, the setting of names and groups is done by using the Networked Connection method *(see Section 1 - Connecting to Devices)*.

All shades should be calibrated, then identified one at a time to set the name, type, groups, and direction for the shade *(see Section 2 - Shade Properties)*.

Section 4.5 - Program Groups into Control Devices

While connected to the network, program the correct group number into each control device *(switch, sensors, contact closures, etc.)*.

Section 4.6 - Verify Operation

Once complete, verify that all control devices correctly operate shades. Use the Motor Limit Tool to make any adjustments needed.

Section 5 - Operating Instructions

This section details how operate the Motor Limit Tool to perform each of its functions.

A Networked Connection (see Section 1 - Connecting to Devices) is needed for all functions, except where noted.

Section 5.1 - Verifying the Network

The network can be verified by selecting **CHECK NETWORK** from the **MAIN MENU**.

The screen will display the total number of devices.

A detailed list of device quantities and firmware versions is shown below the total.



The Up & Down buttons can be used to scroll through the list.
Back button returns to the main menu.

Note: All devices must be at firmware version 1.8.X or higher to be compatible with all functions described in this document.

Section 5.2 - Configuring Motors

All motor functions are accessed by selecting **MOTOR SETTINGS** from **MAIN MENU**.

Motors can be configured all at once, or individually. The eight (8) command buttons will be active on certain screens in this section. While active, these eight (8) buttons have the following functions:

The diagram shows a control panel with a central screen and the following buttons: Open, Upper Limit, Close, Lower Limit, Back, Enter, Prev Stop, Add Stop, Next Stop, and Remove Stop. Callouts provide detailed functions for these buttons.

MOTOR LIMITS ONLY AVAILABLE FOR IntelliFlex I/O

Upper Limit & Lower Limit
Hold for 2 seconds to set the corresponding limit to current shade position.

Hold for 5 seconds to clear the corresponding limit.

MOTOR OPERATION

Open & Close
Tap to jog the motor open or closed a small distance.

Hold to move the motor until released.

PRESET STOPS

Prev & Next Stop
Tap to move to the previous/next preset stop.

Hold for 2 seconds to move to the shade limit in that direction.

ADD/REMOVE STOPS

Add Stop
Hold for 2 seconds to set a preset stop at the current location.

Remove Stop
Hold for 2 sec to remove the nearest preset stop.

Hold for 7 seconds to clear all preset stops.

Section 5.3 - Configuring Individual Motors

Individual motors can be configured two ways:

1. **Direct Connection** - Navigate to the **MOTOR CONFIGURATION** (see Section 1.1 - Direct Connection).
2. **Networked Connection** - Navigate to the **SELECT MOTOR** menu (see Section 1.2 - Networked Connection).

The top section of this screen shows the name of the motor, the limits that have been set (*IntelliFlex I/O motors only*), and the current position of the shade.

PROPERTIES

While on the motor configuration screen, the eight command buttons are active and can be used to perform the functions outlined in Section 5.2 - Configuring Motors.

In addition to these functions, the properties described in Section 2 - Shade Properties can be set on this screen by selecting the property and adjusting the value.

COPY & PASTE

Once configured, all settings for the shade can be copied into the Motor Limit Tool to be pasted into another shade later. This is done by selecting **COPY SETTINGS** from the menu.

If a shade was previously copied, it can be pasted to the currently selected shade by selecting **PASTE SETTINGS**.

GROUPS

Select **SET GROUPS** from the menu to set which groups the shade should belong to.

FACTORY RESET

Select **FACTORY RESET** to erase programming for the shade and return to the default settings. Optionally, just the preset stops or groups can be erased.

Section 5.4 - Configuring All Motors

Some properties of the motors can be configured all at once by selecting **ALL MOTORS** from the **MOTOR SETTINGS** menu.

COMMANDS

From this screen the eight command buttons are active and can be used to configure all shades on the network at once.

There is also the option to automatically calibrate all standard motors, clear any overrides so the system will operate in automatic control, or to set the override time for all devices.

PASTE SETTINGS

Select **PASTE SETTINGS** to paste the copied shade settings to all motors on the network.

FACTORY RESET

Select **FACTORY RESET** to erase programming for all shades and return them to the default settings. Optionally, just the preset stops or groups can be erased.

Section 5.5 - Configuring Shade Groups

All group settings are accessed by selecting **GROUP SETTINGS** from the **MAIN MENU**.

Section 5.6 - Assigning Motors to Groups

In addition to setting the groups for individual motors as described in the *Section 5.2 - Configuring Motors*, motors can be assigned to each of the 64 shade groups from the **SET GROUP** menu.

Once selected, the 64 groups are listed on the screen and can be selected to configure the motors that belong to it. As each group is highlighted, the shades currently assigned to the group will identify.

Section 5.7 - Configuring Control Device Groups

The control device groups and properties, as described in *Section 3 - Shade Group Properties*, can be configured by selecting **MAP TO DEVICES** from the **GROUP SETTINGS** menu.

Select the type of device to configure, then select the individual device from the network.

Each device will identify by flashing lights on the front of the device as they are highlighted in the list.

Once selected, the group number and properties for the device can be modified using the on screen menu.

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**Motor Limit Tool
Part # C202.047
USER MANUAL**