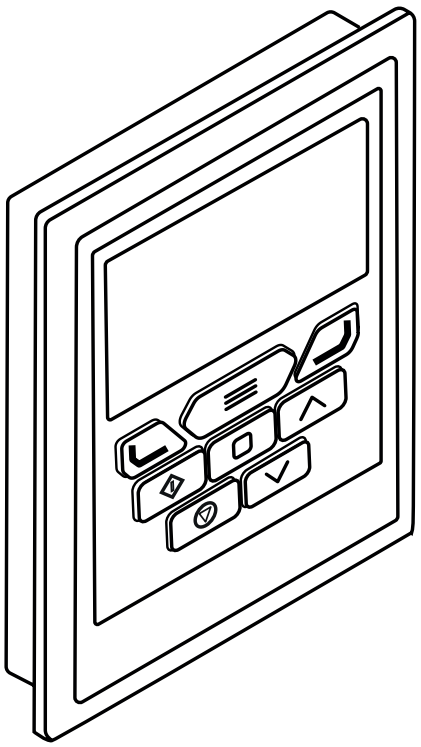
Invertek Drives.com

User Guide

OPTIPAD

TFT Remote Keypad

IP55

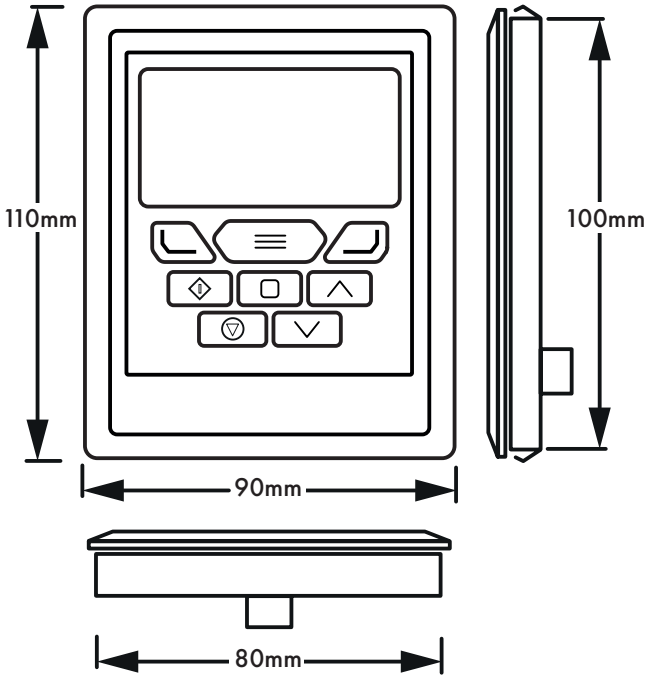


General Specification

Compatible Drives:	ODE-2, ODE-3, ODP-2, ODL-2, ODV-3, CV
Signal Interface:	Standard 8-way RJ45 connector
Supply Input:	24V + / - 10%, DC, 30mA
RS485 Signal:	Industry standard 2-wire +5V differential
Environmental:	Operational: -10 ... 50°C Storage: -40°C ... 60°C
Relative Humidity:	< 95% (non condensing)
Protection Rating:	IP55
Max Cable Length:	25m / 82.5ft shielded twisted pair

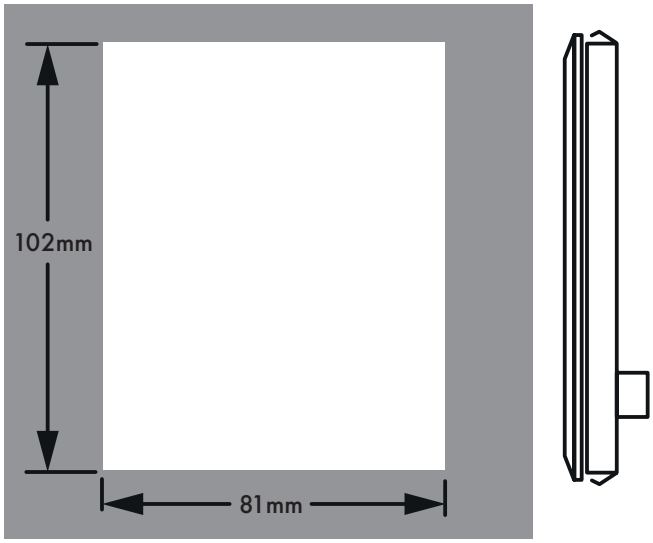
Mechanical Installation

Dimensions



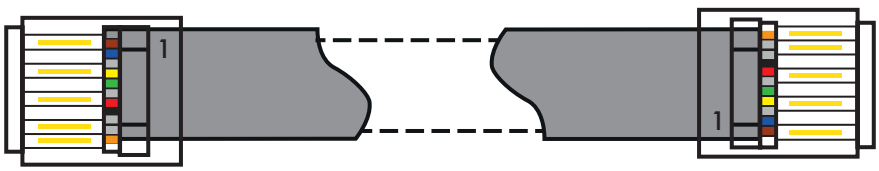
Through Panel Mount

The panel on to which the Optipad is to be mounted should be cut out in accordance with the diagram below.



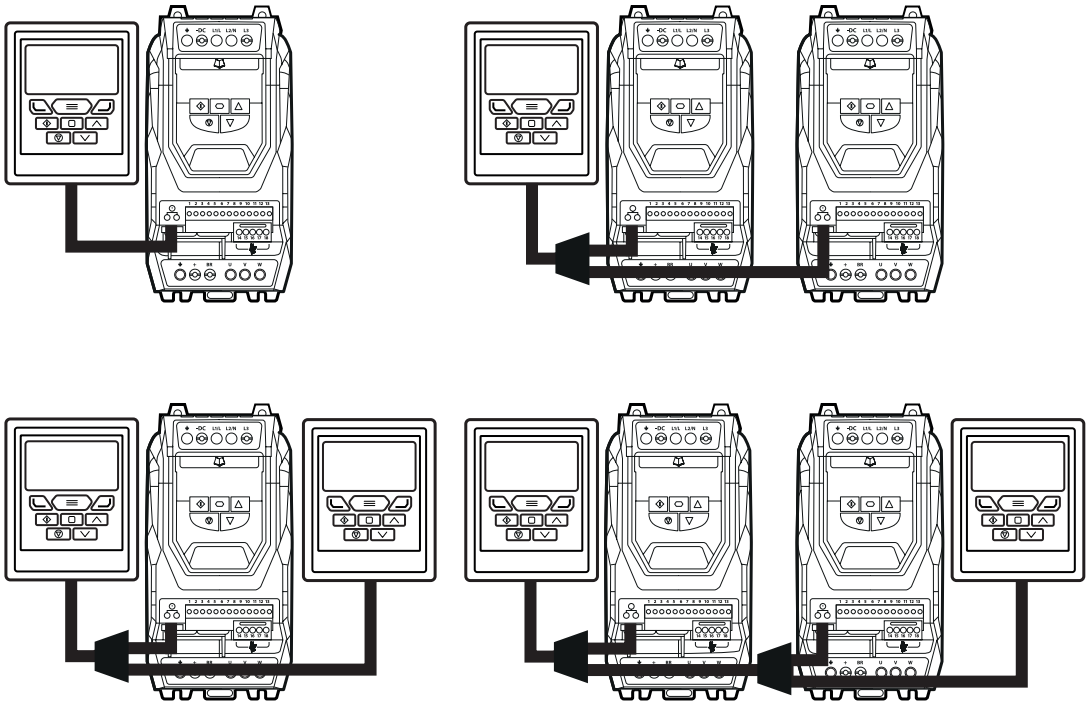
Electrical Installation

Cable Requirements



CAUTION! Incorrect cable connection may damage the drive. Extra care should be taken when using third party cable.

Allowed System Configurations



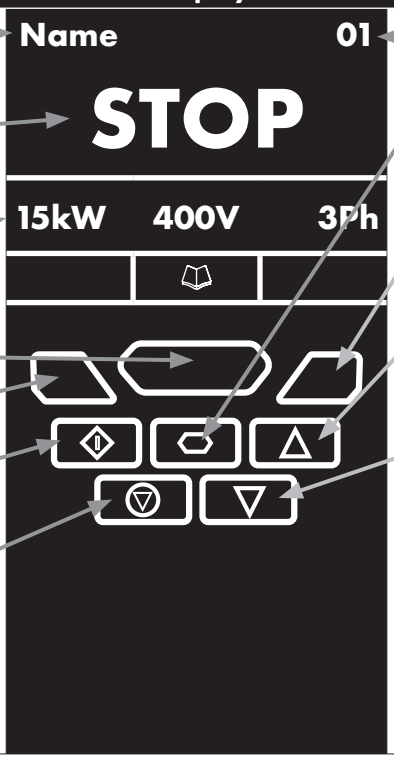
Different drive models can be used on the same Optipad network provided a unique communications address is assigned to each.

NOTE Cannot be used with Master – Slave or Cascade Control

Keypad and Display Layout

The illustration below explains the main features of the Optipad. Please note that some features and display messages are specific to certain variants of the Optidrive family.

TFT Display



Product Name
Shows the drive type that the Optipad is connected to.

Main Displayed Parameter
Shows which of the selectable parameters is currently being shown on the main display, e.g. Motor Speed, Motor Current etc.

Operating Information
Provides a real time display of key operating information, e.g. output current and power.

Quick Help Button
Provides access to short description of the displayed messages.

Function Button 1
See specific drive user guide for actual function.

Start Button
When in keypad mode (or HAND for Eco), used to start the drive.

Stop / Reset Button
Used to reset a tripped drive.
When in keypad mode (or HAND for Eco), used to stop the drive.

Drive Address
Drive serial communication address.

Navigate Button
Used to display real-time information, to access and exit parameter edit mode and to store parameter changes.

Function Button 2
See specific drive user guide for actual function.

Up Button
Used to increase speed in keypad mode or increase parameter values in parameter edit mode.

Down Button
Used to decrease speed in keypad mode or decrease parameter values in parameter edit mode.

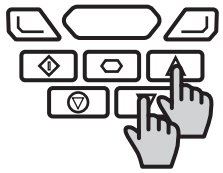
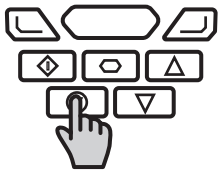
Easy Startup

To setup the Optidrive communication address

By default, the Optipad will try to communicate with the drive that has Address 1 in the network after powering up for the first time.

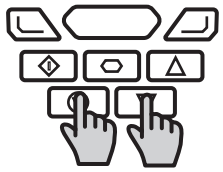
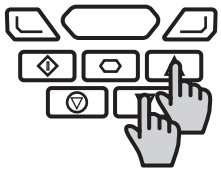
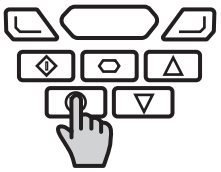
The Optipad will display **"Scanning for Drive 01."** after power up, which indicates that the Optipad is searching for the drive with the correct drive address in the network. Once the drive has been found, the message **"Load..."** will be displayed on the Optipad, which indicates that the Optipad is reading the configuration information from the drive. Usually it will take 1~2 seconds for the Optipad to read this information. After the data has been loaded, the Optipad will display the drive real time status.

NOTE In the case where the keypad is connected to a drive where the network address is not 1, the following steps can be used to set the address of the drive

Select Drive Address 01	**Select Drive Address 01**
	
Use the Up and Down arrows to select the address.	Press the Stop button once address has changed to match the connected drive.

Working with Multiple Drive Networks

When the Optipad is used on networks with multiple drives, the user can change the drive address to set up communication with another drive in the same drive network at anytime.

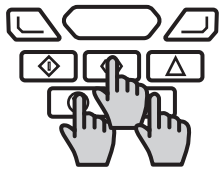
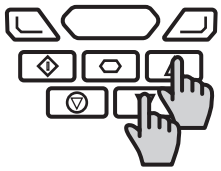
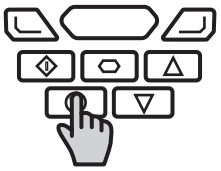
Select Drive Address xx	**Select Drive Address xx**	**Select Drive Address xx**
		
Briefly press the Stop and Down keys to display the above message.	Use the Up and Down arrows to select the desired address.	After selecting the new address, press the Stop key to establish communications with the drive.

NOTE For detailed parameter listing and functional setup, please refer to the corresponding Optidrive user guide

Networks with 2 Optipads connected

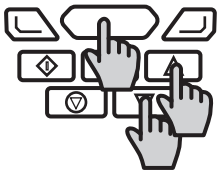
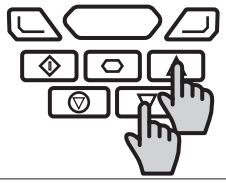
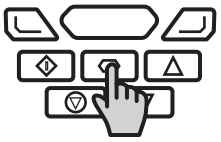
A maximum of 2 Optipads can be connected within the same drive network to communicate with the same drive or different drives.

When using two Optipads simultaneously on a network, the user must change the Optipad Device Number on the second Optipad to ensure correct operation. All Optipad units are set to Device Number 1 by default.

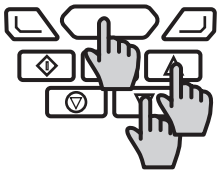
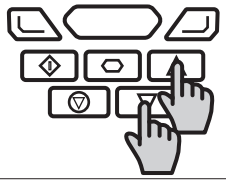
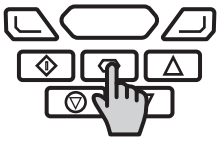
Select OptiPad ID xx	**Select OptiPad ID xx**	**Select OptiPad ID xx**
		
To change the Device Number, press the Navigate, Stop and Down keys together.	Use the Up and Down arrows to select the desired Optipad Number (1 or 2).	Press the Stop key to return to normal operation.

NOTE Once the User has set the Optipad as Device Number 2, OptiTools software cannot be used on the same drive network. The Optipad Device Address should only be changed to 2 if 2 Optipad units are connected on a network. An Optipad with Device Number 1 must always be present for the network to function correctly.

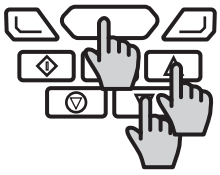
Changing the Display Language

STOP	**Display Setting** ▶ **Select Language** **Adjust brightness** **Display version & checksum**	**Select Language** **Español** **Deutsch** **English**	**Select Language** **Español** **Deutsch** **English**
			
Hold Quick Help Button for >2s	Use the Up and Down arrows to highlight an option, press Quick help button to select option.	Use the Up and Down arrows to select a language.	Press the Navigate button to select.

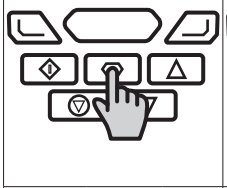
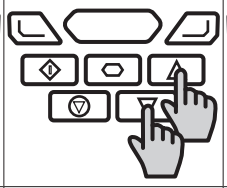
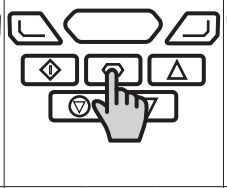
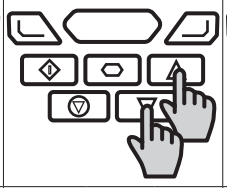
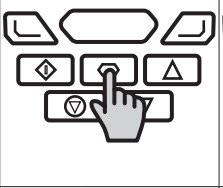
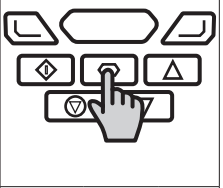
Adjusting Brightness

STOP	**Display Setting** **Select Language** ▶ **Adjust brightness** **Display version & checksum**	**Set brightness in sleep mode** **90%**	**Set brightness in sleep mode** **100%**
			
Hold Quick Help Button for >2s	Use the Up and Down arrows to highlight an option, press Quick help button to select option.	Use the Up and Down arrows to adjust the brightness.	Tap Navigate button to confirm change.

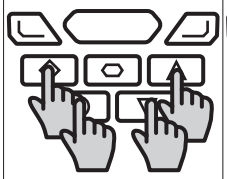
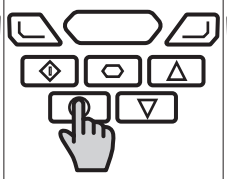
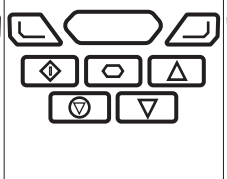
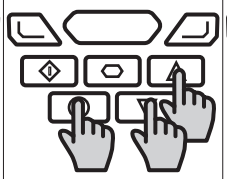
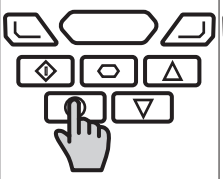
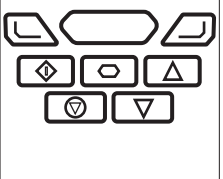
View TFT Firmware Version

STOP	**Display Setting** **Select Language** **Adjust brightness** ▶ **Display version & checksum**	**Display S/W: V.#.## / ####**
		
Hold Quick Help Button for >2s	Use the Up and Down arrows to highlight an option, press Quick help button to select option.	This displays the TFT firmware and checksum version. It will also display additional information about the drive it is connected to.

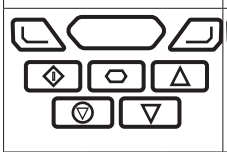
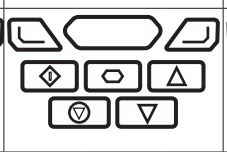
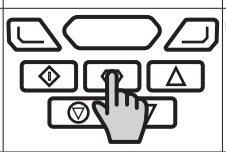
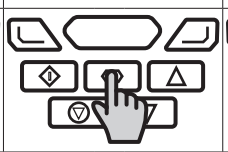
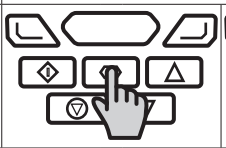
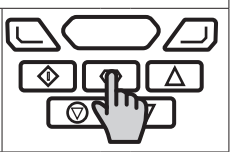
Changing Parameters

Stop	Name 01 P1-01	Name 01 P1-08	Name 01 30.0A ▲▼	Name 01 P1-08	Name 01 Stop
15kW 400V 3Ph	50.0Hz	30.0A	P1-08 ↑30.0 ↓3.0	30.0A	15kW 400V 3Ph
					
Press and hold the Navigate key > 2 seconds.	Use the Up and Down keys to select the required parameter. Display will show the present parameter value on the lower line of the display.	Press the Navigate key for < 1 second.	Adjust the value using the Up and Down keys. Display will show the maximum and minimum possible settings on the lower line of the display.	Press for < 1 second to return to the parameter menu.	Press for > 2 seconds to return to the operating display.

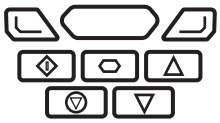
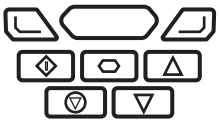
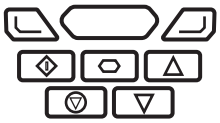
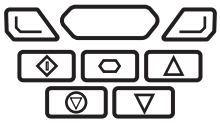
Parameter Factory Reset / User Reset

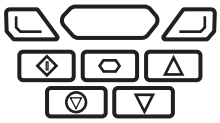
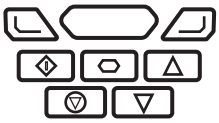
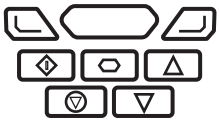
Factory Parameter Reset :			User Parameter Reset :		
Name 01 Stop	Name 01 P-Def	Name 01 Stop	Name 01 Stop	Name 01 U-Def	Name 01 Stop
15kW 400V 3Ph	50.0Hz	15kW 400V 3Ph	P1-08 ↑30.0 ↓3.0	30.0A	15kW 400V 3Ph
					
Press and hold the Up, Down, Start and Stop keys for >2s.	The display shows P-def. Briefly press the Stop key.	The display returns to Stop. All parameters are reset to Factory defaults.	Press and hold the Up, Down and Stop keys for >2s.	The display shows U-def. Briefly press the Stop key.	The display returns to Stop. All parameters are reset to User Defaults.

Operating Displays

Inhibit / STO Active	Drive Stopped	Drive Running Output Frequency Display	Drive Running Output Current Display	Drive Running Motor Power Display	Drive Running Motor Speed Display
Name 01 INHIBIT	Name 01 STOP	Output Frequency 01 23.7Hz	Motor Current 01 15.3A	Motor Power 01 6.9kW	Motor Speed 01 718rpm
15kW 400V 3Ph	15kW 400V 3Ph	15.3A 6.9kW	6.9kW 23.7Hz	23.7Hz 15.3A	23.7Hz 15.3A
					
Drive Inhibited. The STO connections are not made.	Drive Stopped / Disabled.	Drive is enabled / running, display shows the output frequency (Hz). Press the Navigate key to select alternative displays.	Press the Navigate key for < 1 second. The display will show the motor current (Amps).	Press the Navigate key for < 1 second. The display will show the motor power (kW).	If P1-10 > 0, pressing the Navigate key for < 1 second will display the motor speed (Rpm).

Additional Display Messages

Auto Tuning in Progress	External 24VDC Supply	Overload	Fire Mode
Auto-tuning	Name 01 **Ext 24V** External 24V mode	Name 01 OL 23.7Hz 15.3A 6.9kW	**Fire Mode**
			
Auto tune in progress.	The drive control board is powered only from an external 24 Volt source, with no mains power applied.	Indicates an Overload condition. Output current exceeds the motor rated current.	Display shows 'Fire Mode'.

Switching Frequency Reduction	Mains Loss	Maintenance Time Elapsed
Name 01 SF↓ 23.7Hz 15.3A	Name 01 ML 23.7Hz 15.3A 6.9kW	Name 01 23.7Hz 15.3A 6.9kW
		
Switching frequency is reduced, due to high heatsink temperature.	The incoming mains power supply has been disconnected or is missing.	The user programmable maintenance reminder time has elapsed.

NOTE Tapping the quick help button will display a short description of the addition display messages.
If the drive is in a trip condition tapping the quick help button will give a brief description of the trip.

Locked Parameters

The E3, P2, and Eco has a function that permits the locking of parameters to prevent unwanted or accidental changes in the settings.

NOTE If the parameters are locked using this function, the OptiPad will only be able to show drive status, and not be able to change or view any parameters. It will still be possible to cycle through the operating displays on the OptiPad when the drive is running. The Hand/Auto function keys normally visible on the OptiPad when connected to an Optidrive Eco will also be disabled when the parameter lock is active.

The parameters can be unlocked again by setting P-38 to 0 on the E3, and P2-39 to 0 on the P2/Eco either directly from the drive keypad, over fieldbus or using OptiTools Studio. See specific drive user guide for details.

Drive Fault Messages and Trip Codes

See Optidrive User Guide for further information.

Further Status Messages and Troubleshooting

Optipad uses various display messages to indicate different working status. See the following table for more information.

Status Messages

Message	Explanation
Scanning for Drive xx	The Optipad is searching for the drive with address 'xx' in the network.
Load...	The Optipad has found the drive in the network and is loading the initialisation information from the drive.
SC-OBS	The communication link between the Optidrive and Optipad has failed.
Select Language	Displayed in the language selection screen, with a list of available languages. Press the Navigate key to select a language
Select drive address xx	Displayed when selecting the address of the Optidrive that the Optipad should try to communicate with. Press the Stop key to select the drive address.
Select OptiPad ID	Displayed when selecting the Optipad ID (1 or 2) so that two Optipads can be connected to a single drive, or network of multiple drives.

Troubleshooting

Symptom	Explanation
Select drive address xx displayed after 'SCAN..' message	The Optipad failed to successfully communicate with the specified drive address in the network. Check that the RJ45 data cable connection is correct. Check that the drive with address XX is available in the network. If XX > 1 and only one Optipad is connected, then check the Optipad device number, make sure the number is 1.
Display 'Err-id' on power up	This normally occurs when there are two Optipad units in the same drive network and both of them have the same device number. Check and change the device number of one Optipad.
Display 'Err-id' during normal operation	This normally occurs when the user plugs a second Optipad into the drive network. Change the device number of one of the Optipad units.
Display 'SC-OBS'	Communication link between the Optipad and Optidrive has failed during operation. Check the electrical connection, and make sure the cable is connected correctly between the Optipad and the drive. Press 'STOP' button to enable the Optipad to search for the drive again.

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