

Keypads & Displays

OPTIPORT 2

Remote Keypad & LED Display

OPT-2-OPORT-IN



OPTIPAD

Remote Keypad & TFT Display



Optipad Language Support

OPT-3-OPPAD-IN

English
German
Spanish
Italian
French
Swedish
Russian
Polish
Portuguese
Finnish

OPT-3-OPPAD-TU

English
German
Turkish

Optiport 2 and Optipad units act as the remote keypad and display for the Optidrive on the network which has the same serial address. The physical layout and the operation of the Optiport keypad and display mimic the Optidrive exactly.

Specification

OPTIPORT 2

- Real-time keypad and display operation mimics Optidrive
- Single electrical interface for power and data
- Communicates with any compatible drive across a network
- Easy keypad switching to other network addresses
- IP54 rated when through panel mounted
- Bright LED Display
- Membrane keypad
- Parameter lock function available
- 3m Data Cable included

OPTIPAD

In addition to Optiport 2 features, Optipad benefits from:

- Multi-language TFT Display
- IP55 rated

- Simple plug in RJ45 connection
- 24 Volt DC Power provided directly by the Optidrive
- RS485 2 Wire Signal Interface
- Operating Temperature: -10°C to +50°C
- Storage Temperature: -40°C to +60°C

Compatible with:

Optidrive E3
Optidrive P2
Optidrive Eco

Configuration

Depending on the requirement of the application, Optiport 2 and Optipad keypads can be used in the following different ways:

1 keypad with 1 drive



1 keypad with multiple Optidrives (up to 63 max)



2 keypads with 1 drive



2 keypads with multiple Optidrives (up to 63 max)



Add a communication interface or extend functionality

Opldrive Compatibility

			Opldrive Compatibility	
			P2	Eco
Field Bus		 OPT-2-PROFB-IN Supports PROFIBUS DPV1 Automatic Baud rate detection from 9.6kbps to 12mbps	•	•
		 OPT-2-DEVNT-IN Galvanically isolated bus electronics Automatic baud rate detection CIP Parameter Object Support	•	•
		 OPT-2-ETHNT-IN Two Ethernet /IP ports 10/100Mbit half duplex operation Supports DLR (Device Level Ring) and Linear network topology CIP Parameter object support	•	•
		 OPT-2-MODIP-IN Two Ethernet /IP ports 10/100Mbit half duplex operation Modbus TCP with IT functionality	•	•
		 OPT-2-ETCAT-IN Two Ethernet /IP ports 10/100Mbit half duplex operation EtherCAT slave device	•	•
		 OPT-2-PFNET-IN Two Ethernet /IP ports 10/100Mbit half duplex operation	•	•
		 OPT-2-BNTIP-IN Two Ethernet /IP ports 10/100Mbit half duplex operation Supports Linear network topology		•
Encoder Feedback		OPT-2-ENCOD-IN Suitable for standard TTL type encoders Up to 4096ppr 5 Volt Power Supply on board Maximum Input Frequency up to 500kHz	•	
		OPT-2-ENCHT-IN Suitable for 24 Volt HTL type encoders Up to 4096ppr Up to 500kHz input frequency	•	
Extended I/O		OPT-2-EXTIO-IN Provides an additional 3 Digital Inputs 2 Relay (Volt Free) Outputs	•	•
		OPT-2-CASCD-IN Provides an additional 3 Relay (Volt Free) Outputs Typical usage: Cascade control of Booster Pump sets	•	•
External I/O		OPT-2-CANIO-IN Standalone external I/O module Additional 5 digital inputs Additional 3 relay outputs Connects via RJ45 socket	•	

OptiTools Studio

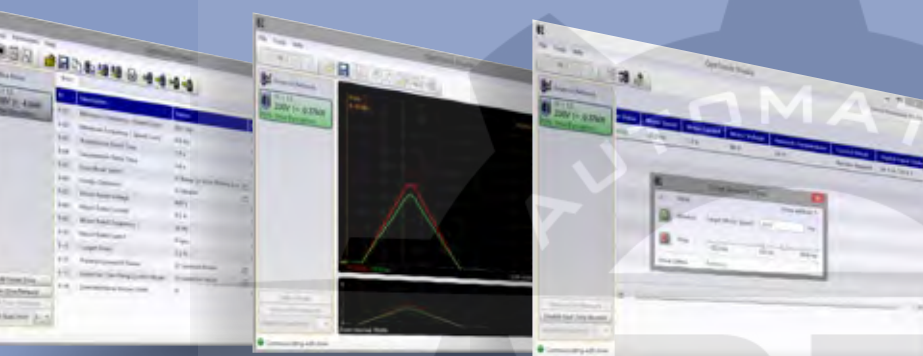
OPTISTICK Smart

Rapid Commissioning Tool

OPT-3-STICK-IN

Powerful PC Software

Drive commissioning and parameter backup



- Powerful PC based commissioning and programming software
- Multi Drive Network Support

Supports two key functions:

- Drive Programming & Commissioning
 - Parameter Upload, Download & Storage
 - Changed Parameter Highlighting
 - Parameter List Printing
- Provides Access to Optidrive P2 & Eco PLC programming function
 - Function Blocked Based PLC Logic Programming
 - Advanced Drive Control Functions
 - Multiple Functions can be easily combined to produce powerful solutions
 - Program protection to prevent unauthorised copying
- Real-time scope function and data logging
- Real-time data monitoring

- Allows copying, backup and restore of drive parameters
- Provides Bluetooth interface to a PC running OptiTools Studio or the OptiTools Mobile app on a smartphone
- Onboard NFC (Near Field Communication) for rapid data transfer

Compatible with:

Optidrive E3, Optidrive P2, Optidrive Eco

Compatible with:

Windows Vista, Windows 7,
Windows 8, Windows 8.1 & Windows 10



PC Connection Kit

OPT-2-USB-OBUS



OPT-2-USB-OBUS is a dedicated PC connection kit for all Optidrive models, allowing direct connection from the PC USB port to the drive RJ45 communication connection for use with Optitools studio software.

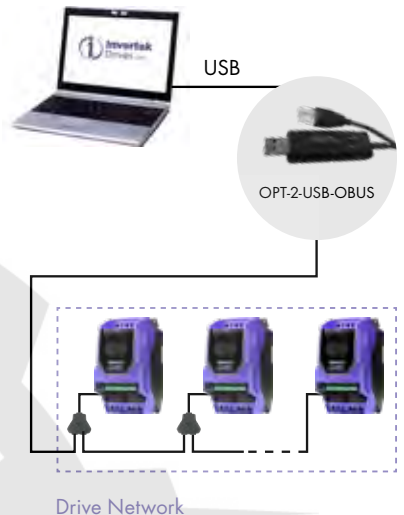
Key Benefits

- To provide interface between PC and drive
- For use with OptiTools Studio PC software
- Provides electrical isolation between PC and drive network

Features

- Isolated USB - RS485 connection adaptor
- USB2.0
- Compatible with Windows XP, Vista, 7, 8, 8.1, 10
- Supports Optitools Studio PC software connection to the drive
- 1.5 metre cable lengths

Configuration



RS485 Data Cable Splitter

OPT-J45SP (RJ45 1 - 2 way)

RS485 data cable splitter is an RJ45 1 to 2-way connection block



RJ45 Data Cables

RJ45 to RJ45 RS485 Data Cable, 0.5m length, Blue
OPT-J4505

RJ45 to RJ45 RS485 Data Cable, 1.0m length, Blue
OPT-J4510

RJ45 to RJ45 RS485 Data Cable, 3.0m length, Blue
OPT-J4530



EtherNet Module

OPT-2-ETHEG-IN

- ODVA compliant EtherNet/IP Modbus Translator Device
- Compatible with all drive platforms: P2, E3 & Eco
- Integrated network switch: simplifying network architecture
- Compatible with RSLogix and CoDeSys PLCs



RJ45 8 Way Network Hub

OPT-2-RJHUB-IN

RJ45 Terminator

OPT-2-RJTRM-IN



Input Chokes

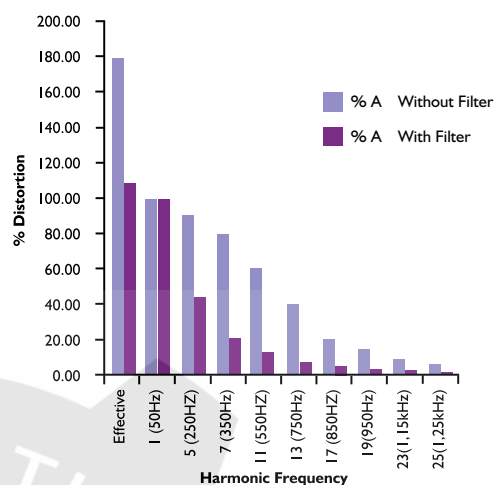
Reduce supply harmonic current distortion and increase protection against mains voltage spikes and notches

Input chokes can be used to reduce the supply line harmonic currents and voltage distortion generated by almost all inverter drives on the market today. Invertek Drives have selected a range of chokes matched to the Optidrive range to provide the best reduction in supply current harmonics whilst also providing enhanced protection for the Optidrive against transient voltages ('spikes') or other mains borne interference.

Input chokes are available for the complete range of Optidrive products, and are recommended for use in all installations and in particular:

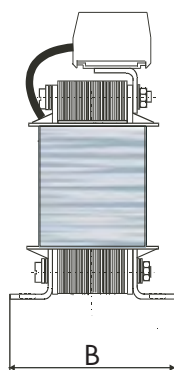
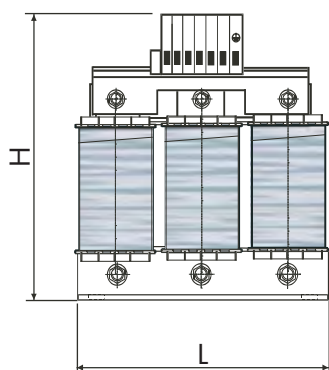
- where the local mains supply quality may be poor or unknown
- where high current switching loads such as large DC drives or soft starts are operating
- where the mains supply impedance is low
- in remote areas prone to lightening strikes

Fourier Analysis of Harmonic Distortion



The graph shows the effect of using an input choke on typical 4kW/ 5HP drive. The 50Hz current is used as a reference and is the current which delivers the useful power to the motor. The reduction in the total effective (RMS) current is clear.

Part Number	Phases	Optidrive Size	Enclosure IP	Connection (mm ²)	L (mm)	H (mm)	B (mm)	Rated Volts	Rated Amps	Inductance (mH)	Weight (kg)
OPT-2-L1016-20	1	1	20	4	78	80	78	230 Max	16	1.8	1.1
OPT-2-L1025-20	1	2	20	10	85	158	76		25	1.1	1.8
OPT-2-L1016-66	1	1	66	4	82	70	70	230 Max	16	1.83	1.0
OPT-2-L1025-66	1	2	66	10	90	75	84		25	1.17	1.3
OPT-2-L3006-20	3	1	20	2.5	95	107	56	500 Max	6	4.8	1.3
OPT-2-L3010-20	3	2	20	2.5	125	127	71		10	2.9	2.5
OPT-2-L3036-20	3	3	20	10	190	205	82		36	0.81	7.2
OPT-2-L3050-20	3	4	20	16	190	220	102		50	0.58	8.7
OPT-2-L3090-20	3	5	20	35	240	280	107		90	0.32	16
OPT-2-L3006-66	3	1	66	2.5	115	88	74	600 Max	6	4.8	1.6
OPT-2-L3010-66	3	2	66	2.5	175	137	99		10	3.86	3.5
OPT-2-L3018-66	3	3	66	10	175	137	114		18	2.04	7
OPT-2-L3200-00	3	6	00	9	310	260	180	500	200	73.5	35
OPT-2-L3300-00	3	7	00	9	370	310	180		300	49.0	48



Output filters improve the quality of the output waveform

In most applications, the unfiltered output from an inverter drive gives satisfactory performance but to improve system functionality, reliability and longevity, output filtering is strongly recommended in some applications, including:

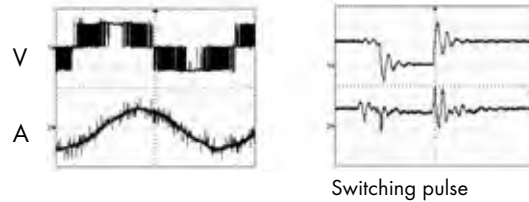
- Long motor cables, up to 200m
- High capacitance motor cables (i.e. typical "pyro" wire, used for fire protection)
- Multiple motors connected in parallel
- Motors without inverter grade insulation (typically older motors)

Key Features

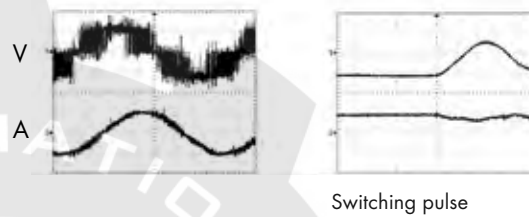
- Limits output voltage gradient, typically $<200V/\mu s$
- Limits transient over voltages at the motor terminals, typically $<1000V$
- Suppression of mains conducted interference in lower frequency ranges
- Compensation of capacitive load currents
- Reduction of RFI emissions from the motor cable
- Reduction of motor losses and audible noise caused by ripple

Comparison of Characteristics

Without filter

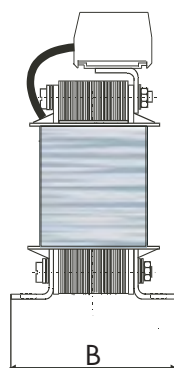
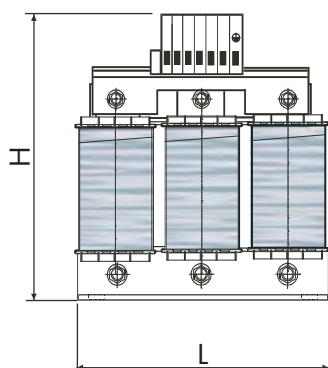


With filter



Note: Switching pulse rises slower and to a lower amplitude with filter.

Part Number	Optidrive Size	Enclosure IP	Connection (mm ²)	L (mm)	H (mm)	B (mm)	Rated Volts	Rated Amps	Inductance (mH)	Weight (kg)
OPT-2-M3008-20	1	20	2.5	95	107	61	500 Max	8	2.0	1.5
OPT-2-M3012-20	2	20	4	125	158	76		12	1.7	2.8
OPT-2-M3030-20	3	20	10	155	185	66		30	0.5	4.2
OPT-2-M3075-20	4 & 5	20	35	190	223	92		75	0.22	8.6
OPT-2-M3180-00	5 & 6	00	11	360	263	180	400 Max	180	0.09	30
OPT-2-M3300-00	7	00	9	380	310	180		300	0.053	48
OPT-2-M3008-66	1	66	2.5	115	85	74	600 Max	8	2.0	1.7
OPT-2-M3012-66	2	66	2.5	140	110	87		12	1.2	3.2
OPT-2-M3018-66	3	66	10	140	110	87		18	0.9	3.2

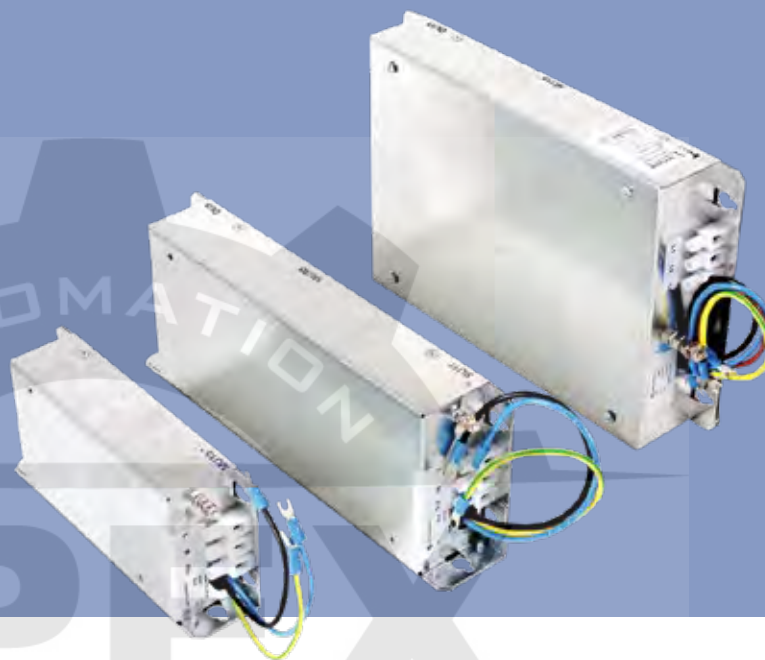


OPTIFILTER

RFI Line Filters

All Optidrive products are manufactured as standard with an internal EMC filter, unless specified by the customer. In general, this internal filter will provide compliance with international standard requirements for the majority of industrial installations and applications.

Where a higher standard of EMC compliance is desired or required, Invertek Drives can provide a range of suitable filters to ensure that an EMC compliant solution for all possible applications can be realised.



Part Number	Supply Phases	Optidrive Size	Enclosure IP	Length (mm)	Width (mm)	Depth (mm)	Rated Amps	Weight (kg)
OPT-2-E1010-20	1	1	20	180	70	65	10	1.5
OPT-2-E1025-20	1	2	20	250	70	65	25	2.8
OPT-2-E1010-66	1	1	66	180	70	65	10	1.5
OPT-2-E1025-66	1	2	66	250	70	65	25	2.8
OPT-2-E3006-20	3	1	20	210	85	60	6	2.7
OPT-2-E3016-20	3	2	20	230	120	65	16	2.7
OPT-2-E3025-20	3	3	20	230	120	65	25	2.7
OPT-2-E3050-20	3	4	20	115	150	65	50	TBC
OPT-2-E3080-20	3	5	20	373	170	65	80	TBC
OPT-2-E3180-20	3	6	20	470	180	115	180	TBC
OPT-2-E3300-00	3	7	0	660	260	130	300	TBC
OPT-2-E3006-66	3	1	66	210	85	60	6	2.7
OPT-2-E3016-66	3	2	66	230	120	65	16	2.7
OPT-2-E3025-66	3	3	66	200	150	65	25	2.7

OPTIBRAKE

Dynamic Braking Resistors

Optibrake dynamic braking resistors are designed specifically for the Optidrive range. For use with high inertia loads which need to be stopped rapidly. Optibrake dynamic braking resistors assist the Optidrive in managing the electrical energy returned from the motor during braking by converting it to heat energy.



Part Number	Optidrive Size	Resistance	Rated Voltage	Rated Power (W)	
				Continuous	Peak
OD-BR100-IN	2, 3	100	900 VDC	200	12000
OD-BRES4-IN	4, 5	22	900 VDC	500	21000



Local Isolator



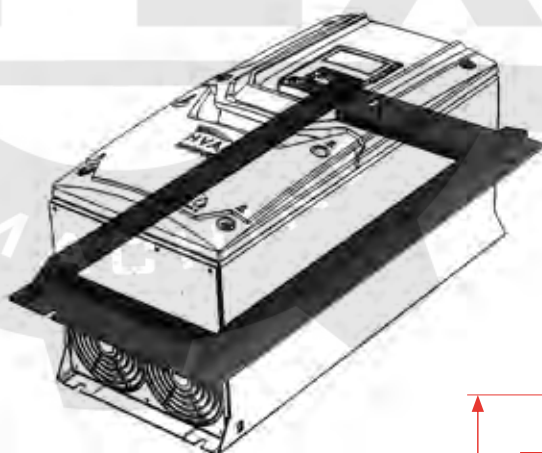
Local isolator option allows complete disconnection of the incoming AC power to the drive. The isolator mounts directly to the drive, and provides a local disconnect option. The handle can be padlocked in the off position for safe maintenance.

Part Number	Optidrive Size	H (mm)	W (mm)	D (mm)
OPT-2-ISOLO-S4	4	170	173	80
OPT-2-ISOLO-S5	5	230	235	100

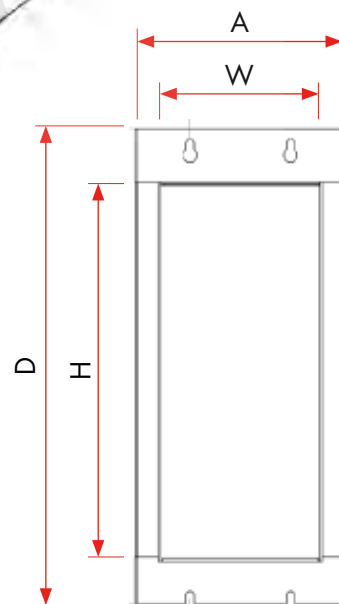
Through Hole Mount Kit

Through hole mount kits allow optidrive to be mounted through panel, ensuring that the heat from the drives heat sink is kept spate from the control electronics. This allows the optimum panel cooling arrangement to be used, with best possible separation of hot and cold air.

Through panel mounting kits can be used with all IP55 frame size 4–7 units.



Part Number	Optidrive Size	Panel Cut Out Dimensions		Mount Dimensions	
		H mm (in)	W mm (in)	A mm (in)	D mm (in)
OPT-2-THMT04	4	425 (17.3)	180 (7.09)	228 (8.98)	521.5 (20.53)
OPT-2-THMT05	5	515 (21.26)	240 (9.65)	292 (11.5)	612.5 (24.11)
OPT-2-THMT06	6	815 (34.06)	335 (13.39)	398 (15.67)	924 (36.38)
OPT-2-THMT07	7	1230 (50.4)	335 (13.39)	398 (15.67)	1342 (52.83)



	Part Number	Description	E3	P2	Eco
Braking Resistors	OD-BR100-IN	Brake Resistor, Size 2, 100R, 200W	•	•	
	OPT-BR050-IN-155	Brake Resistor, IP55, Size 2, 200W, 50R	•	•	
	OD-BRES4-IN	Brake Resistor, Size 4, 33R, 500W		•	
Communication Interfaces	OPT-2-ETCAT-IN	EtherCAT Plug In Interface Module		•	•
	OPT-2-PROFB-IN	Profibus DPV-1 Plug In Interface Module		•	•
	OPT-2-PFNET-IN	Profinet IO Plug In Interface Module		•	•
	OPT-2-ETHNT-IN	Ethernet/IP Plug In Interface Module		•	•
	OPT-2-DEVNT-IN	DeviceNet Plug In Interface Module		•	•
	OPT-2-BNTIP-IN	Bacnet IP Plug in Interface			•
	OPT-2-MODIP-IN	Modbus TCP Plug In Interface Module		•	•
	OD-PROFB-IN	Profibus External Gateway & Cables	•	•	•
	OD-DEVNET-IN	DeviceNET External Gateway & Cables	•	•	•
	OPT-2-ETHEG-IN	EtherNet Module	•	•	•
Communications Options	OPT-2-STICK-IN	Optistick with Bluetooth Interface	•	•	•
	OPT-2-USB-OBUS	USB PC Connection Kit	•	•	•
Encoder Feedback Interfaces	OPT-2-ENCHT-IN	Incremental Encoder Feedback Plug In Option Module (12 - 30Volt)		•	
	OPT-2-ENCOD-IN	Incremental Encoder Feedback Plug In Option Module (5Volt)		•	
External EMC Filters	OPT-2-E1010-20	Optifilter EMC Input Filter, 1 Phase, 10 Amp, IP20	•	•	•
	OPT-2-E3006-20	Optifilter EMC Input Filter, 3 Phase, 6 Amp, IP20	•	•	•
	OPT-2-E1025-20	Optifilter EMC Input Filter, 1 Phase, 25 Amp, IP20	•	•	•
	OPT-2-E3016-20	Optifilter EMC Input Filter, 3 Phase, 16 Amp, IP20	•	•	•
	OPT-2-E3025-20	Optifilter EMC Input Filter, 3 Phase, 25 Amp, IP20	•	•	•
	OPT-2-E3050-20	Optifilter EMC Input Filter, 3 Phase, 50 Amp, IP20	•	•	•
	OPT-2-E3080-20	Optifilter EMC Input Filter, 3 Phase, 80 Amp, IP20	•	•	•
	OPT-2-E3180-20	Optifilter EMC Input Filter, 3 Phase, 180 Amp, IP20	•	•	•
	OPT-2-E3300-00	Optifilter EMC Input Filter, 3 Phase, 300 Amp, IP00	•	•	•
External EMC Filters IP66	OPT-2-E1010-66	Optifilter EMC Input Filter, 1 Phase, 10 Amp, IP66	•	•	•
	OPT-2-E3006-66	Optifilter EMC Input Filter, 3 Phase, 6 Amp, IP66	•	•	•
	OPT-2-E1025-66	Optifilter EMC Input Filter, 1 Phase, 25 Amp, IP66	•	•	•
	OPT-2-E3016-66	Optifilter EMC Input Filter, 3 Phase, 16 Amp, IP66	•	•	•
	OPT-2-E3025-66	Optifilter EMC Input Filter, 3 Phase, 25 Amp, IP66	•	•	•
Frame Size 8 Accessories	OPT-2-L31500-00	Frame Size 8 AC Line Choke 500A, 1%		•	
	OPT-2-M3500-00	Frame Size 8 Output Choke 500A		•	
	OPT-2-L3500-00	Frame Size 8 AC Line Choke 500A, 4%		•	
	OPT-2-E3500-00	Frame Size 8 EMC Filter		•	
I/O Options	ODP-2ROUT-IN	Dual Relay Output Card	•		
	OPT-HVACO-IN	HVACO Drive Running & Tripped Relay Output Card	•		
	OPT-2-CASCD-IN	Cascade Control Plug In Option Module		•	•
	OPT-2-EXTIO-IN	Extended I/O Plug In Option Module		•	•
	OPT-LOGIP-11	110V Logic Input Card	•		
	OPT-LOGIP-23	230V Logic Input Card	•		
	OPT-2-LOCMO-IN	Optidrive P2 / HVAC Local Mouse		•	•
	OPT-2-CANIO-IN	External Remote I/O Interface		•	
Input Chokes	OPT-2-L1016-20	Input Choke, 1 Phase, 16 Amp, IP20	•	•	•
	OPT-2-L1025-20	Input Choke, 1 Phase, 25 Amp, IP20	•	•	•
	OPT-2-L3006-20	Input Choke, 3 Phase, 6 Amp, IP20	•	•	•
	OPT-2-L3010-20	Input Choke, 3 Phase, 10 Amp, IP20	•	•	•
	OPT-2-L3036-20	Input Choke, 3 Phase, 36 Amp, IP20	•	•	•
	OPT-2-L3050-20	Input Choke, 3 Phase, 50 Amp, IP20	•	•	•
	OPT-2-L3090-20	Input Choke, 3 Phase, 90 Amp, IP20	•	•	•
	OPT-2-L3200-00	Input Choke, 3 Phase, 200 Amp, IP00	•	•	•
	OPT-2-L3300-00	Input Choke, 3 Phase, 300 Amp, IP00	•	•	•
Input Chokes IP66	OPT-2-L1016-66	Input Choke, 1 Phase, 16 Amp, IP66	•	•	•
	OPT-2-L1025-66	Input Choke, 1 Phase, 25 Amp, IP66	•	•	•
	OPT-2-L3006-66	Input Choke, 3 Phase, 6 Amp, IP66	•	•	•
	OPT-2-L3010-66	Input Choke, 3 Phase, 10 Amp, IP66	•	•	•
	OPT-2-L3018-66	Input Choke, 3 Phase, 18 Amp, IP66	•	•	•
Local Isolator	OPT-2-ISOLO-S4	Local Isolator, Frame Size 4		•	•
	OPT-2-ISOLO-S5	Local Isolator, Frame Size 5		•	•
Output Filters	OPT-2-M3008-20	Output Filter, 8 Amp, IP20	•	•	•
	OPT-2-M3012-20	Output Filter, 12 Amp, IP20	•	•	•
	OPT-2-M3030-20	Output Filter, 30 Amp, IP20	•	•	•
	OPT-2-M3180-00	Output Filter, 180 Amp, IP20	•	•	•
	OPT-2-M3075-20	Output Filter, 75 Amp, IP20	•	•	•
	OPT-2-M3300-00	Output Filter, 300 Amp, IP00	•	•	•
Output Filters IP66	OPT-2-M3008-66	Output Filter, 8 Amp, IP66	•	•	•
	OPT-2-M3012-66	Output Filter, 12 Amp, IP66	•	•	•
	OPT-2-M3018-66	Output Filter, 18 Amp, IP66	•	•	•
PLC Licence	OPT-STUDIO-IN	Optitools Studio PLC Function Single PC Licence		•	•
Remote Keypads	OPT-2-OPORT-IN	Optiport 2 with RJ45 Cable	•	•	•
	OPT-2-OPPAD-IN	Optipad Remote OLED Keypad with RJ45 Cable	•	•	•
	OPT-2-OPDTK-IN	Optipad Remote OLED Keypad with RJ45 Cable (Turkish)	•	•	•
RJ45 Accessories	OPT-J4505-IN	RS485 Data Cable, 0.5M RJ45	•	•	•
	OPT-J4510-IN	RS485 Data Cable, 1.0M RJ45	•	•	•
	OPT-J4530-IN	RS485 Data Cable, 3.0M RJ45	•	•	•
	OPT-J45SP-IN	RS485 3 Way Data Cable Splitter RJ45	•	•	•
	OPT-3-BNTSP-IN	RJ45 BacNet connector			•
	OPT-2-RJHUB-IN	RS485 8 Way Network Hub RJ45	•	•	•
	OPT-2-RJTRM-IN	RJ45 Terminator	•	•	•
Through Hole Mount Kits	OPT-2-THMT04	Through Hole Mount Kit Frame Size 4		•	•
	OPT-2-THMT05	Through Hole Mount Kit Frame Size 5		•	•
	OPT-2-THMT06	Through Hole Mount Kit Frame Size 6		•	•
	OPT-2-THMT07	Through Hole Mount Kit Frame Size 7		•	•