

Application Note	AN-ODE-03		
Title	Switching Frequency Derating Curves		
Revision History			
Version	Comments	Author	Date
1.00	Initial Release	PAE	09/03/09

Overview

The Optidrive E2 IP20 product range has been designed to operate in an ambient temperature up to 50°C at default switching frequency and drive rated current. Operating at higher switching frequencies sometimes results in the drive output current needing to be reduced. This document provides tables of derating currents for each drive depending upon its switching frequency and ambient temperature.

The derating curves are based on the results obtained from extensive internal tests that are carried out to measure the temperatures of various components at the various operating conditions.

The limiting factor is not always the heatsink temperature of the drive that can be observed in the parameter P00-09, but can be one or more of the following internal components:

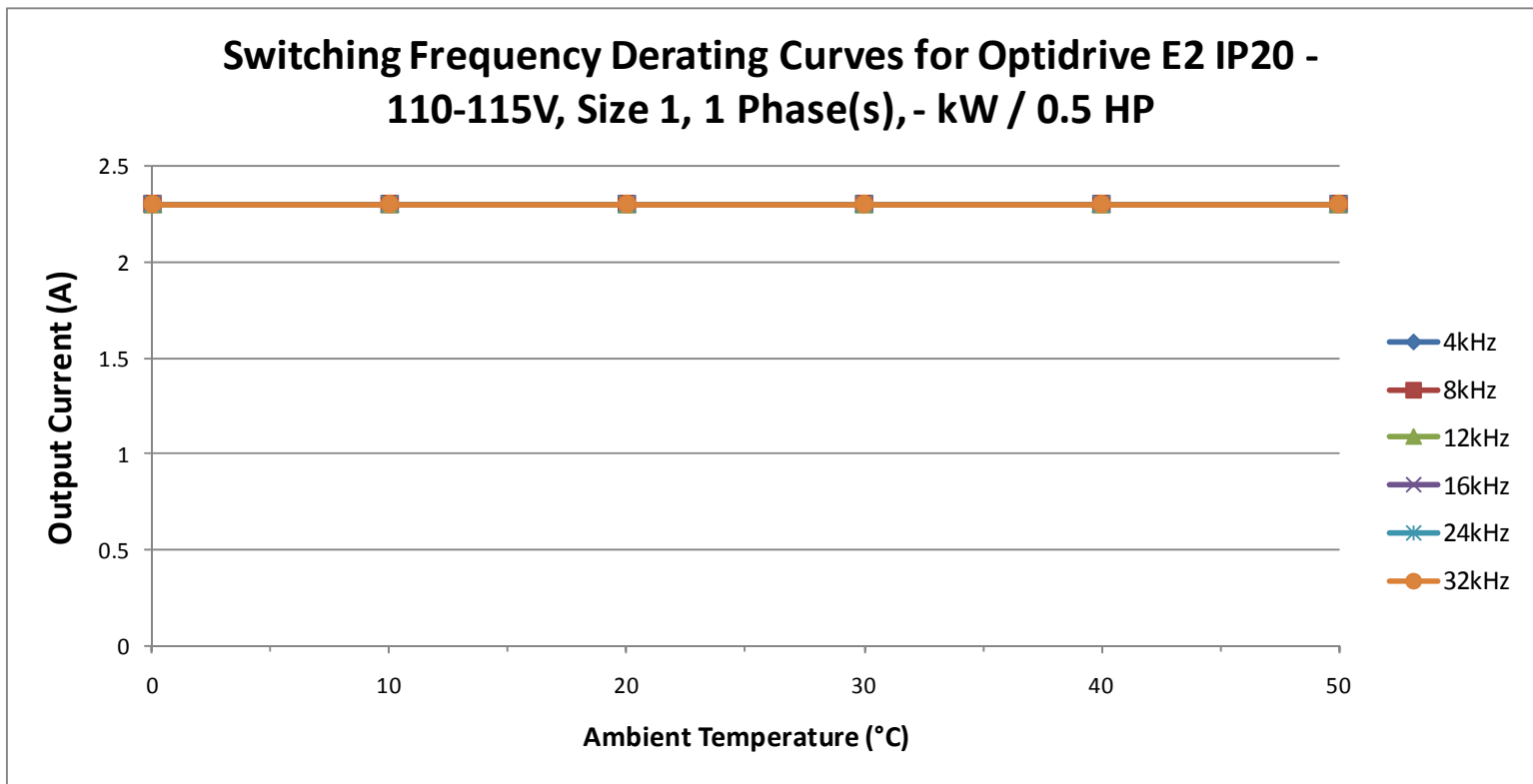
- Aluminium Heatsink
- Input Bridge rectifier
- IGBT module
- DC bus capacitors
- Various capacitors, resistors and semiconductor components

For this reason it is important that these de-rating curves are observed.

The default drive switching frequency is highlighted in **BOLD** on the following rating tables.

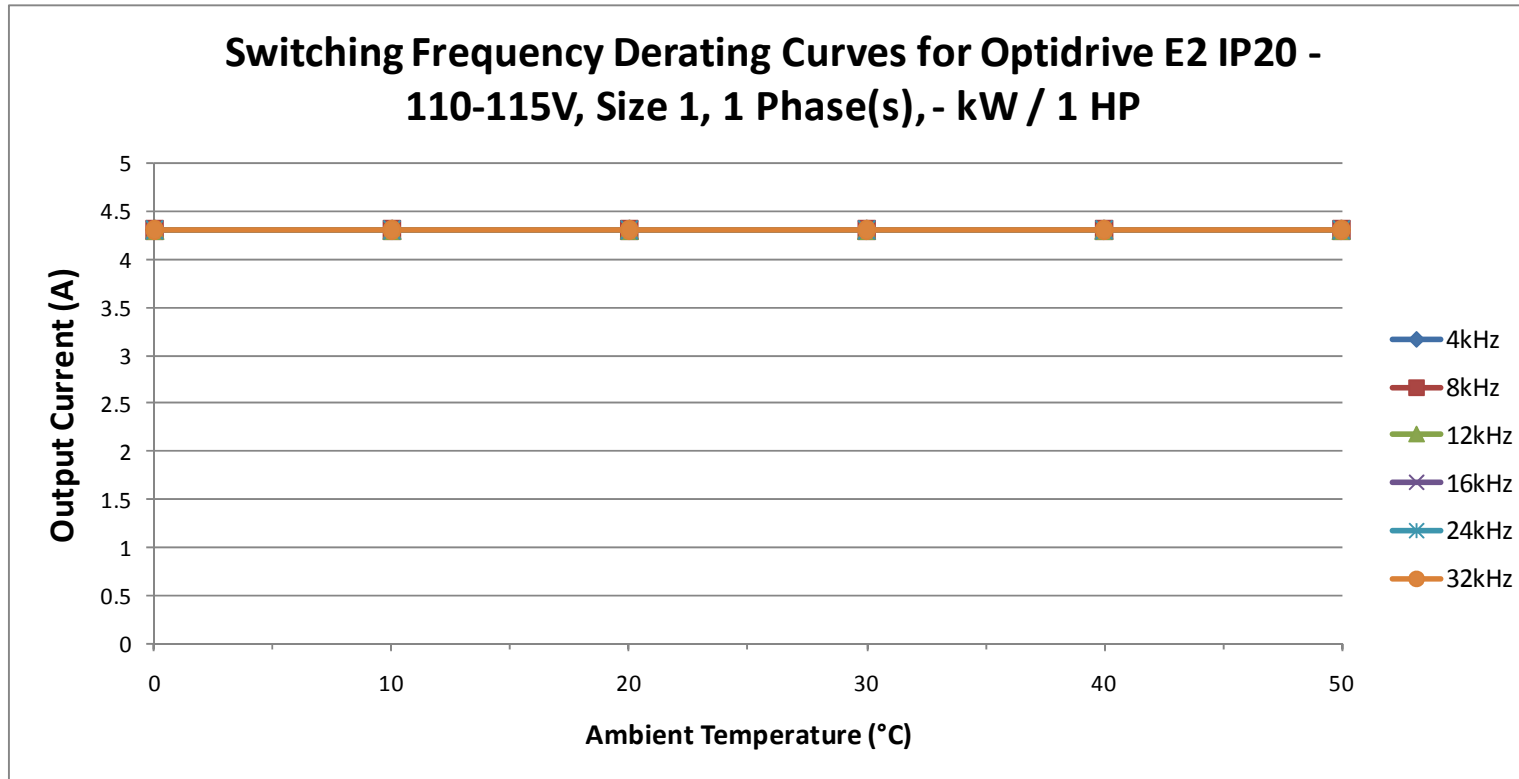
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	4kHz	2.3	2.3	2.3	2.3	2.3	2.3
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	8kHz	2.3	2.3	2.3	2.3	2.3	2.3
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	12kHz	2.3	2.3	2.3	2.3	2.3	2.3
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	16kHz	2.3	2.3	2.3	2.3	2.3	2.3
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	24kHz	2.3	2.3	2.3	2.3	2.3	2.3
110-115V, Size 1, 1 Phase(s), - kW / 0.5 HP	110-115V	1	-	0.5	2.3	1	32kHz	2.3	2.3	2.3	2.3	2.3	2.3



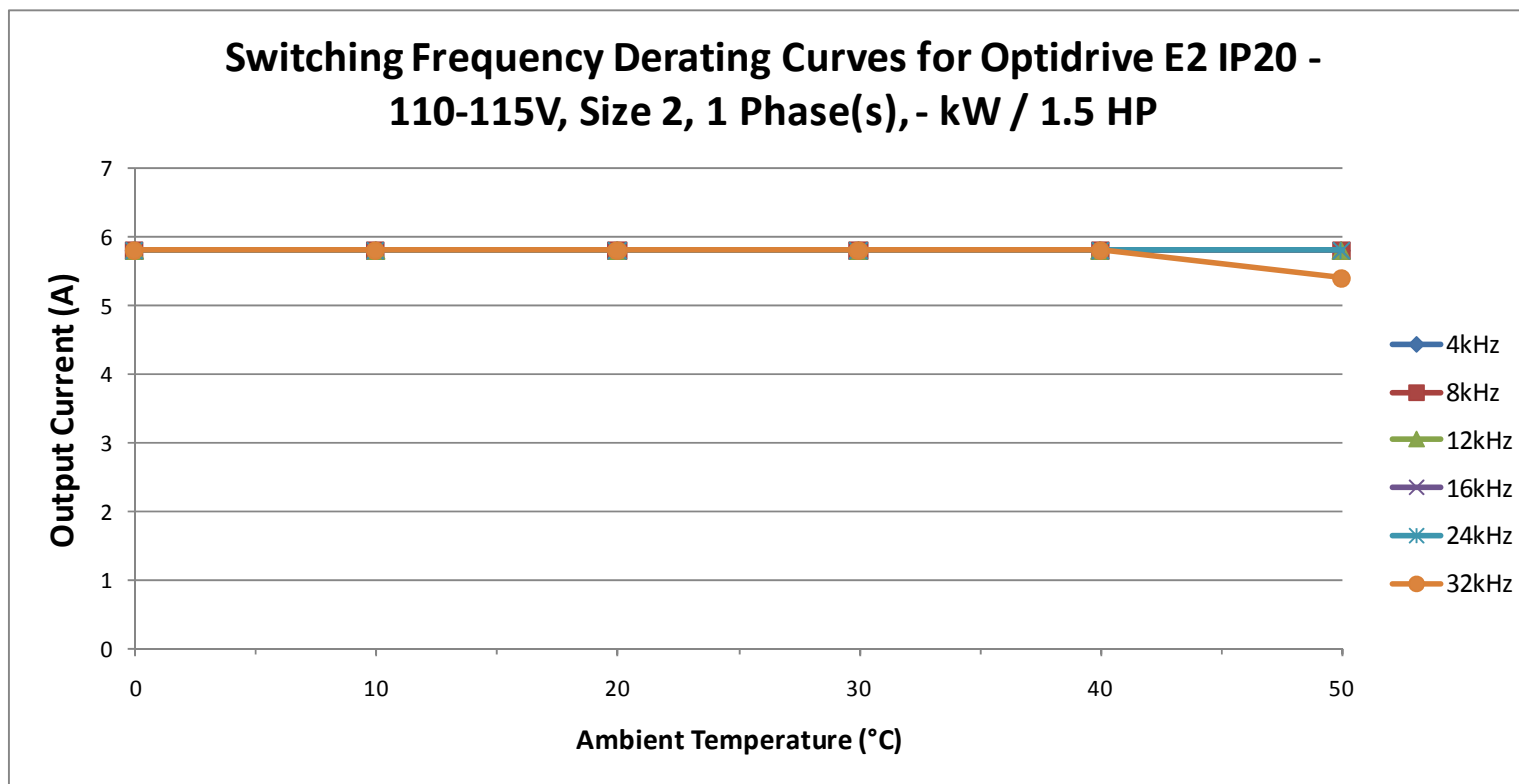
110-115V, Size 1, 1 Phase(s), - kW / 1 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	4kHz	4.3	4.3	4.3	4.3	4.3	4.3
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	8kHz	4.3	4.3	4.3	4.3	4.3	4.3
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	12kHz	4.3	4.3	4.3	4.3	4.3	4.3
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	16kHz	4.3	4.3	4.3	4.3	4.3	4.3
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	24kHz	4.3	4.3	4.3	4.3	4.3	4.3
110-115V, Size 1, 1 Phase(s), - kW / 1 HP	110-115V	1	-	1	4.3	1	32kHz	4.3	4.3	4.3	4.3	4.3	4.3



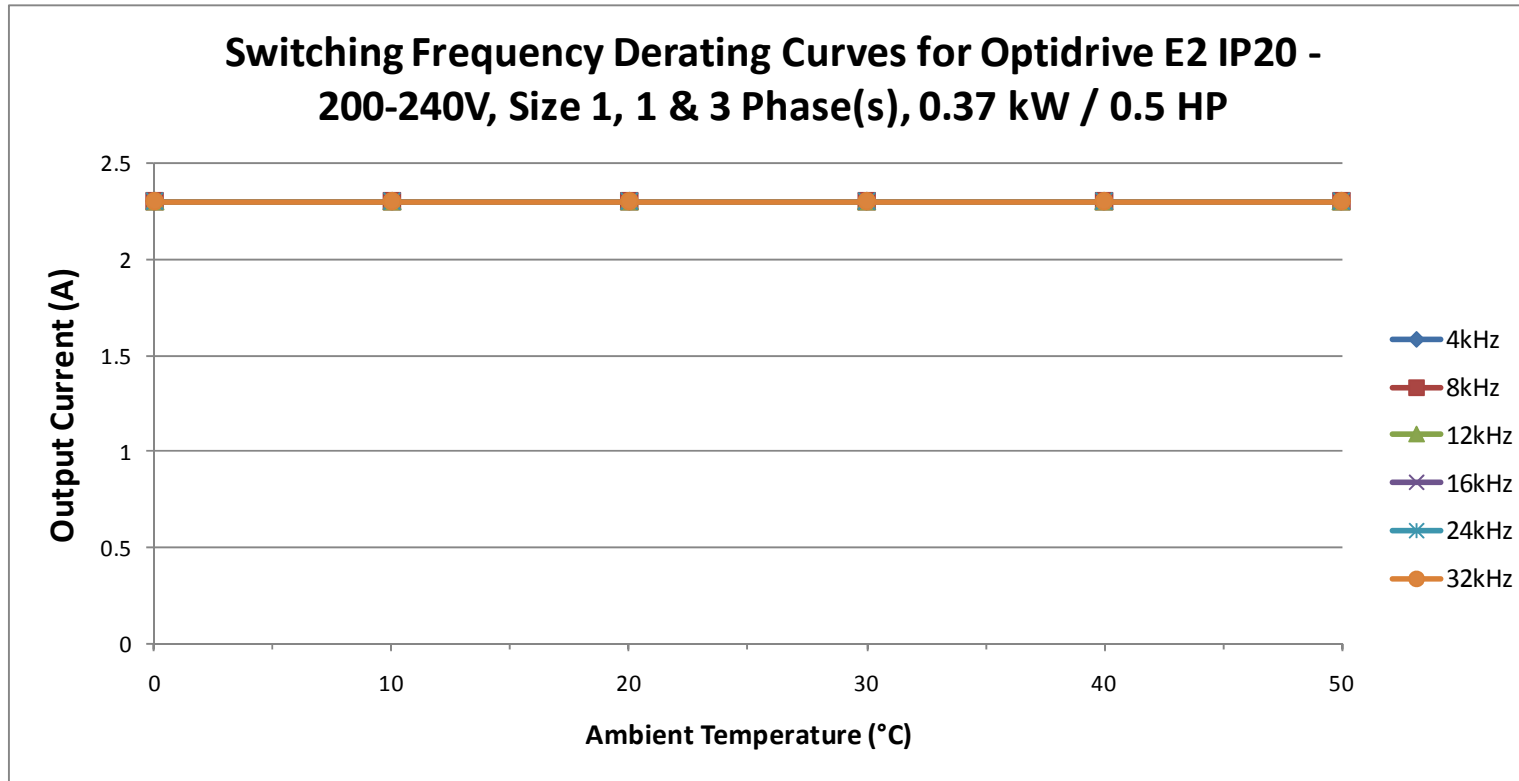
110-115V, Size 1, 1 Phase(s), - kW / 1.5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	4kHz	5.8	5.8	5.8	5.8	5.8	5.8
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	8kHz	5.8	5.8	5.8	5.8	5.8	5.8
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	12kHz	5.8	5.8	5.8	5.8	5.8	5.8
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	16kHz	5.8	5.8	5.8	5.8	5.8	5.8
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	24kHz	5.8	5.8	5.8	5.8	5.8	5.8
110-115V, Size 2, 1 Phase(s), - kW / 1.5 HP	110-115V	1	-	1.5	5.8	2	32kHz	5.8	5.8	5.8	5.8	5.8	5.4



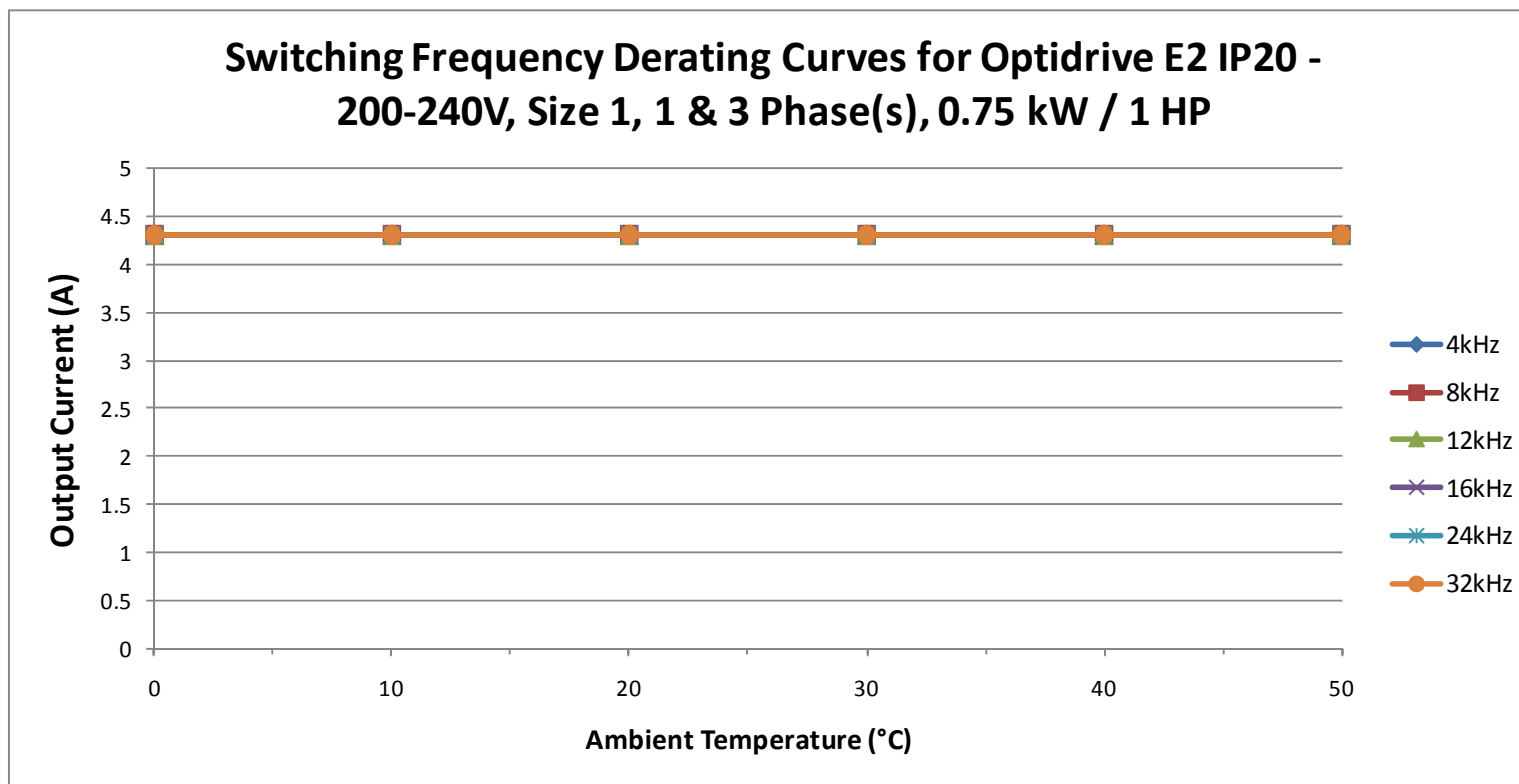
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	4kHz	2.3	2.3	2.3	2.3	2.3	2.3
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	8kHz	2.3	2.3	2.3	2.3	2.3	2.3
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	12kHz	2.3	2.3	2.3	2.3	2.3	2.3
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	16kHz	2.3	2.3	2.3	2.3	2.3	2.3
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	24kHz	2.3	2.3	2.3	2.3	2.3	2.3
200-240V, Size 1, 1 & 3 Phase(s), 0.37 kW / 0.5 HP	200-240V	1 & 3	0.37	0.5	2.3	1	32kHz	2.3	2.3	2.3	2.3	2.3	2.3



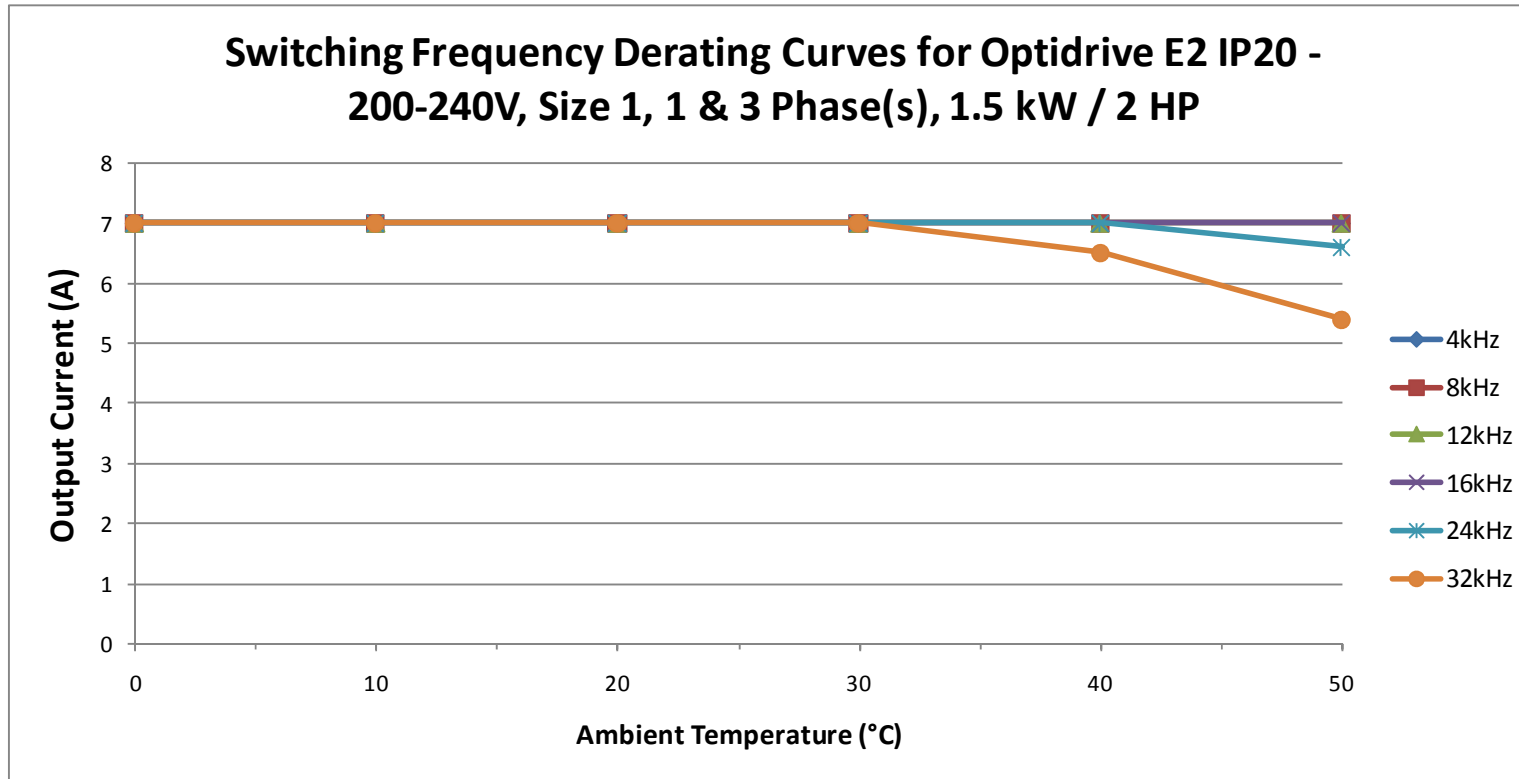
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	4kHz	4.3	4.3	4.3	4.3	4.3	4.3
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	8kHz	4.3	4.3	4.3	4.3	4.3	4.3
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	12kHz	4.3	4.3	4.3	4.3	4.3	4.3
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	16kHz	4.3	4.3	4.3	4.3	4.3	4.3
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	24kHz	4.3	4.3	4.3	4.3	4.3	4.3
200-240V, Size 1, 1 & 3 Phase(s), 0.75 kW / 1 HP	200-240V	1 & 3	0.75	1	4.3	1	32kHz	4.3	4.3	4.3	4.3	4.3	4.3



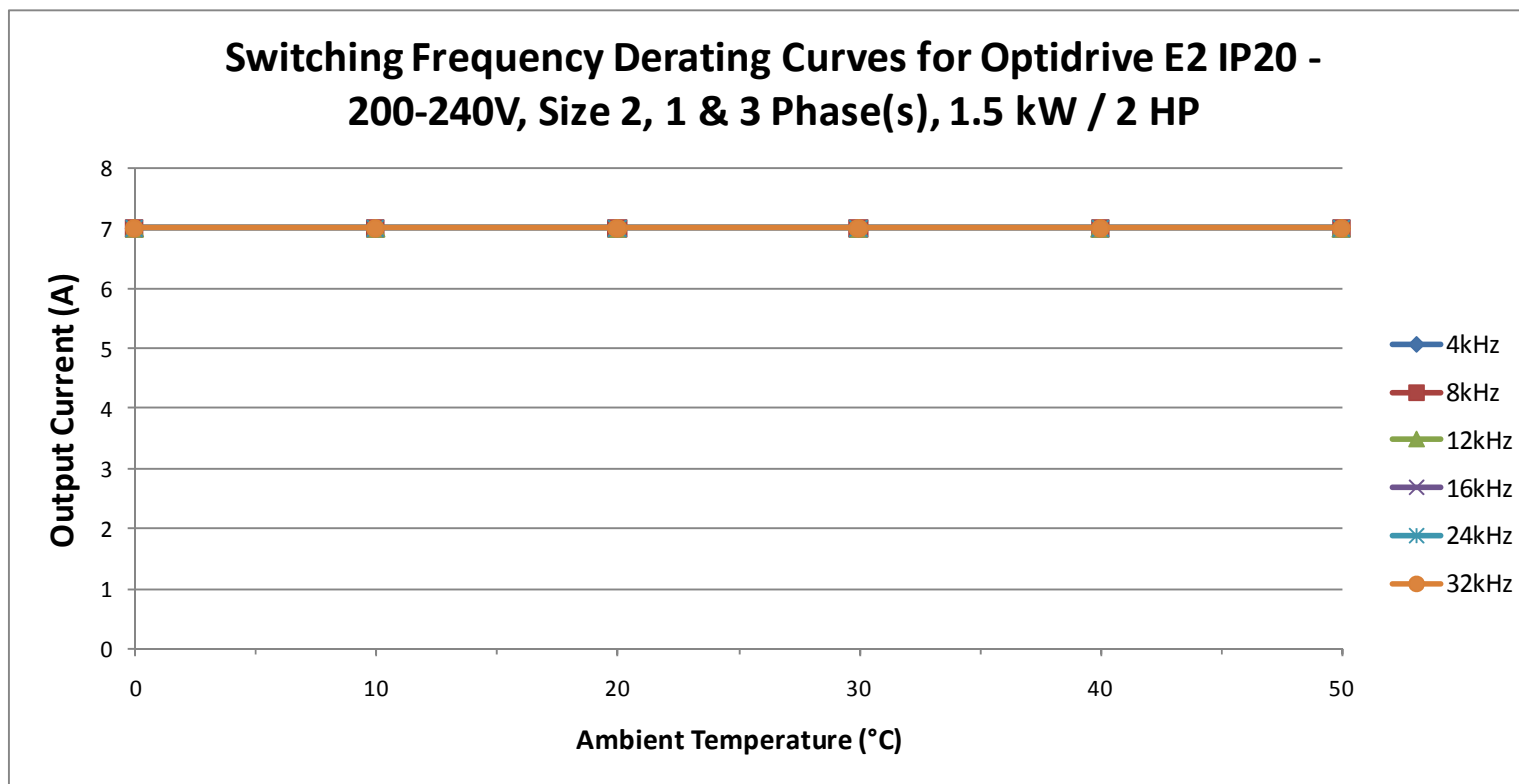
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	4kHz	7	7	7	7	7	7
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	8kHz	7	7	7	7	7	7
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	12kHz	7	7	7	7	7	7
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	16kHz	7	7	7	7	7	7
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	24kHz	7	7	7	7	7	6.6
200-240V, Size 1, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	1	32kHz	7	7	7	7	6.5	5.4



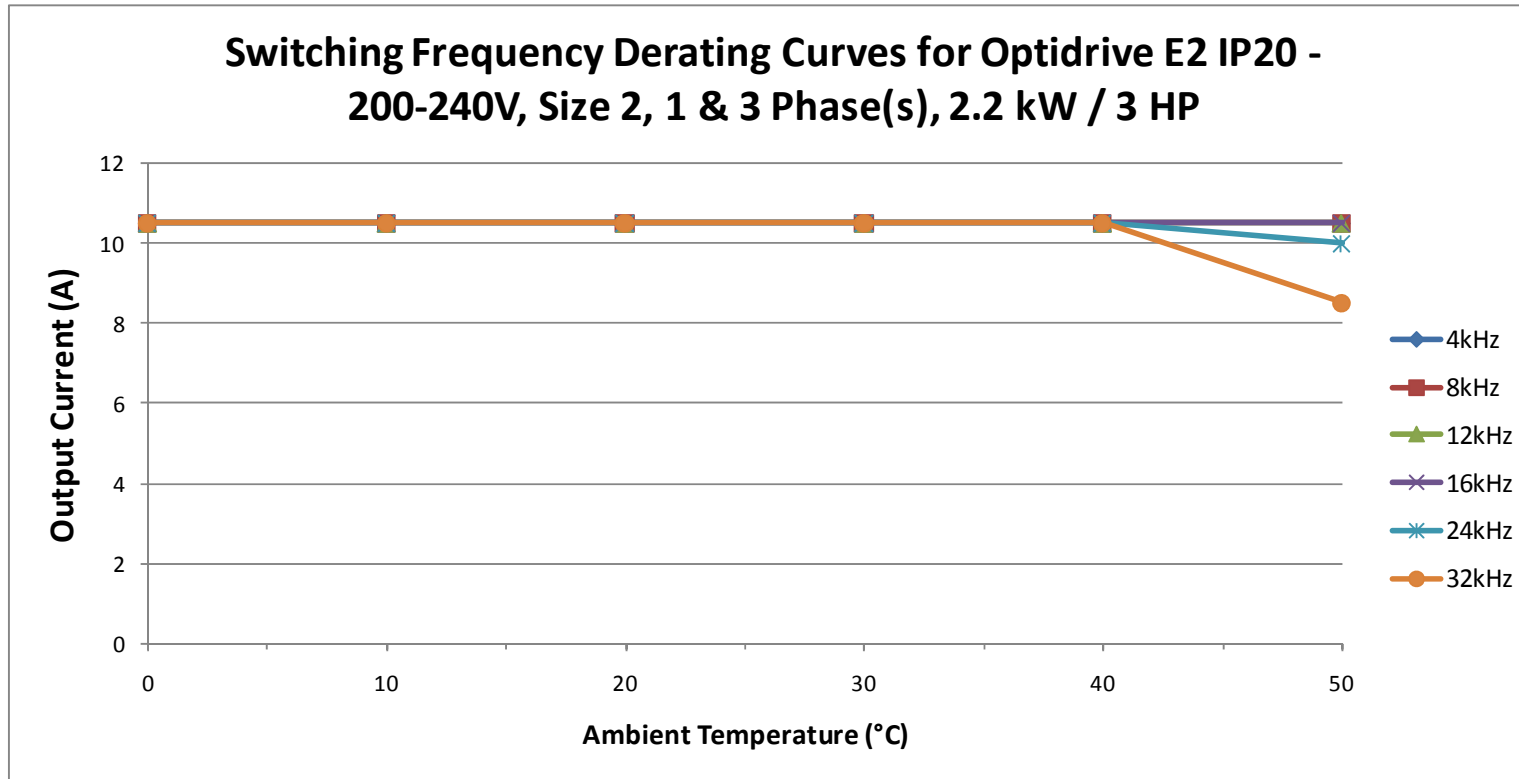
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	4kHz	7	7	7	7	7	7
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	8kHz	7	7	7	7	7	7
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	12kHz	7	7	7	7	7	7
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	16kHz	7	7	7	7	7	7
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	24kHz	7	7	7	7	7	7
200-240V, Size 2, 1 & 3 Phase(s), 1.5 kW / 2 HP	200-240V	1 & 3	1.5	2	7	2	32kHz	7	7	7	7	7	7



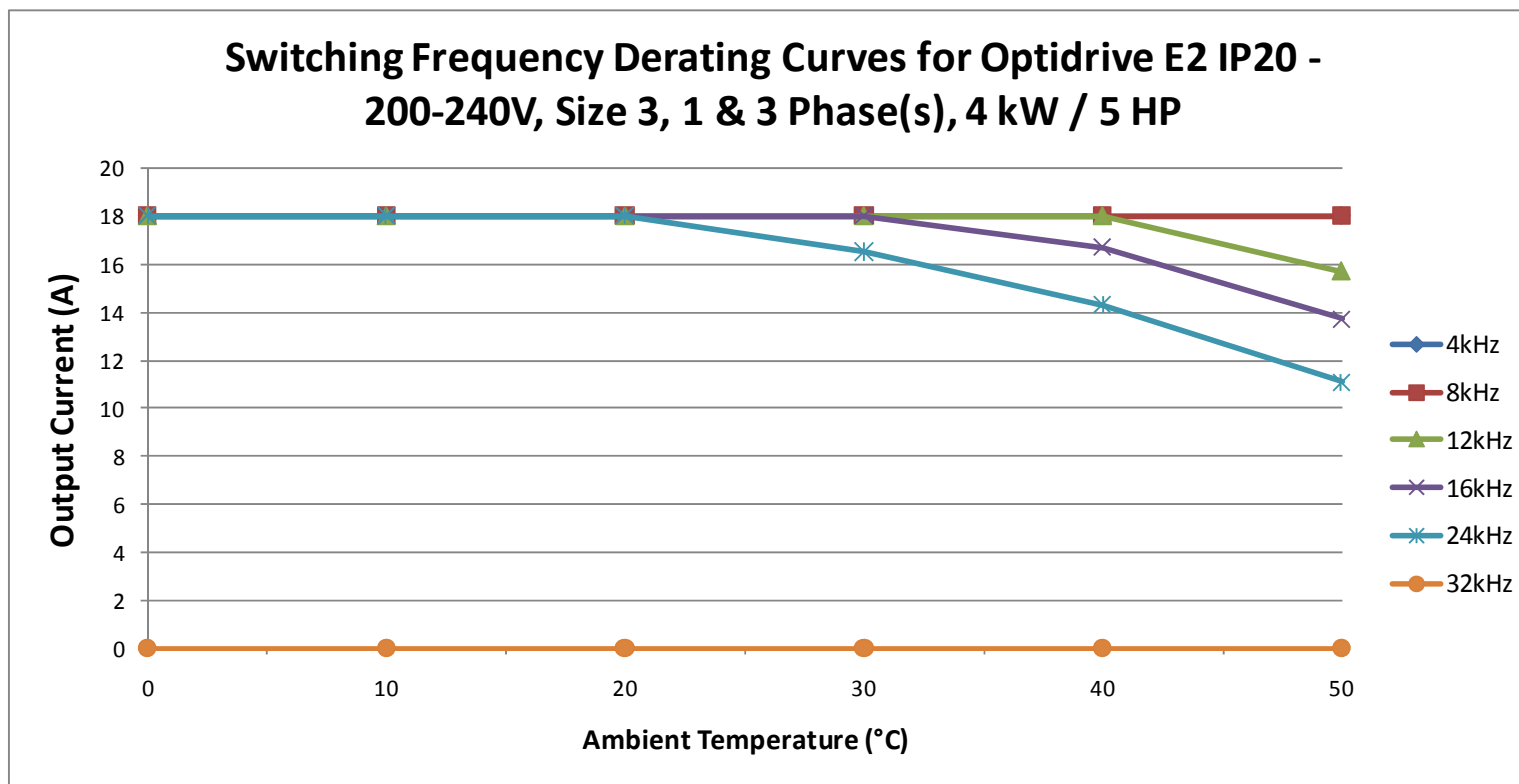
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	4kHz	10.5	10.5	10.5	10.5	10.5	10.5
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	8kHz	10.5	10.5	10.5	10.5	10.5	10.5
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	12kHz	10.5	10.5	10.5	10.5	10.5	10.5
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	16kHz	10.5	10.5	10.5	10.5	10.5	10.5
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	24kHz	10.5	10.5	10.5	10.5	10.5	10
200-240V, Size 2, 1 & 3 Phase(s), 2.2 kW / 3 HP	200-240V	1 & 3	2.2	3	10.5	2	32kHz	10.5	10.5	10.5	10.5	10.5	8.5



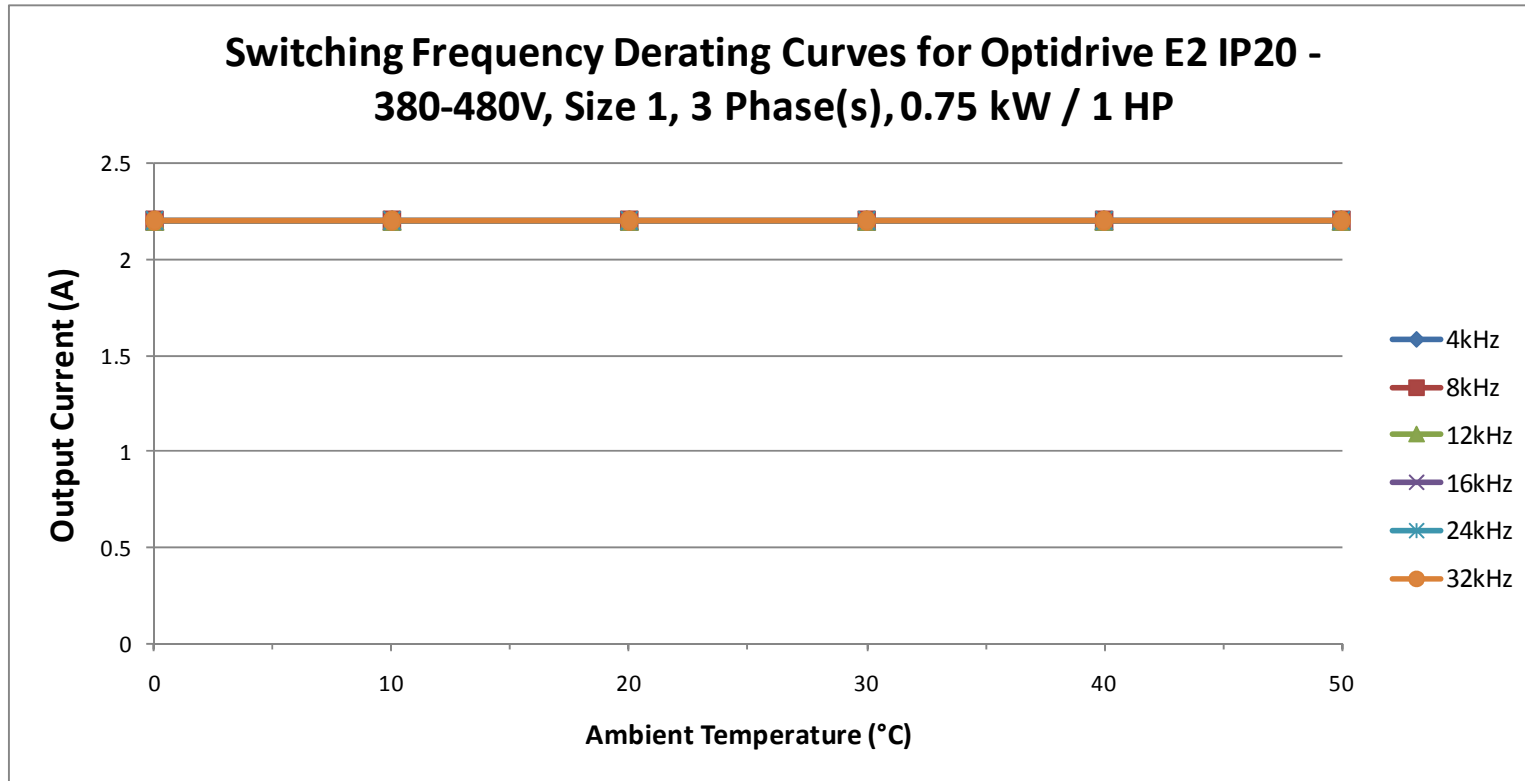
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	4kHz	18	18	18	18	18	18
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	8kHz	18	18	18	18	18	18
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	12kHz	18	18	18	18	18	15.7
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	16kHz	18	18	18	18	16.7	13.7
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	24kHz	18	18	18	16.5	14.3	11.1
200-240V, Size 3, 1 & 3 Phase(s), 4 kW / 5 HP	200-240V	1 & 3	4	5	18	3	32kHz	-	-	-	-	-	-



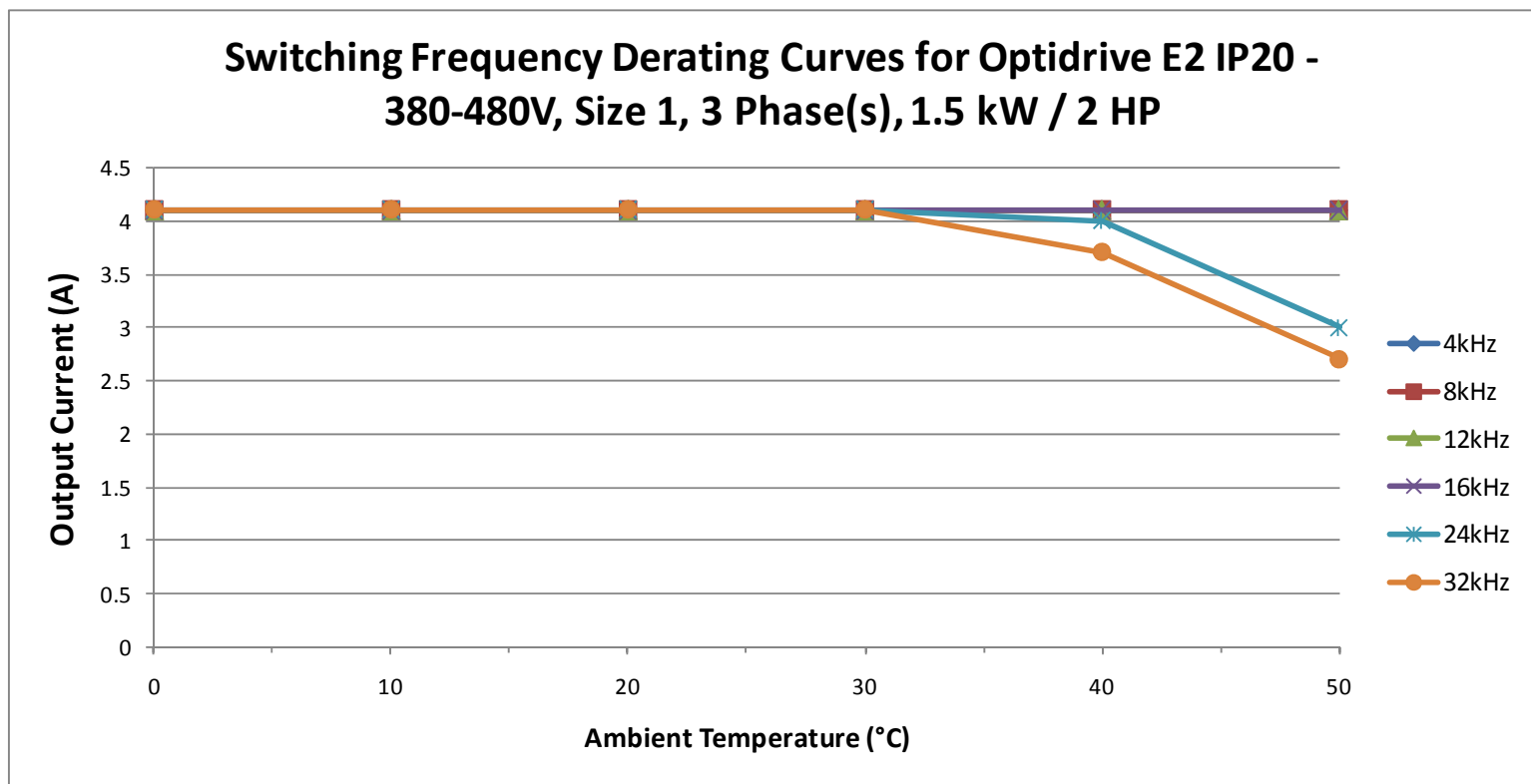
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	4kHz	2.2	2.2	2.2	2.2	2.2	2.2
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	8kHz	2.2	2.2	2.2	2.2	2.2	2.2
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	12kHz	2.2	2.2	2.2	2.2	2.2	2.2
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	16kHz	2.2	2.2	2.2	2.2	2.2	2.2
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	24kHz	2.2	2.2	2.2	2.2	2.2	2.2
380-480V, Size 1, 3 Phase(s), 0.75 kW / 1 HP	380-480V	3	0.75	1	2.2	1	32kHz	2.2	2.2	2.2	2.2	2.2	2.2



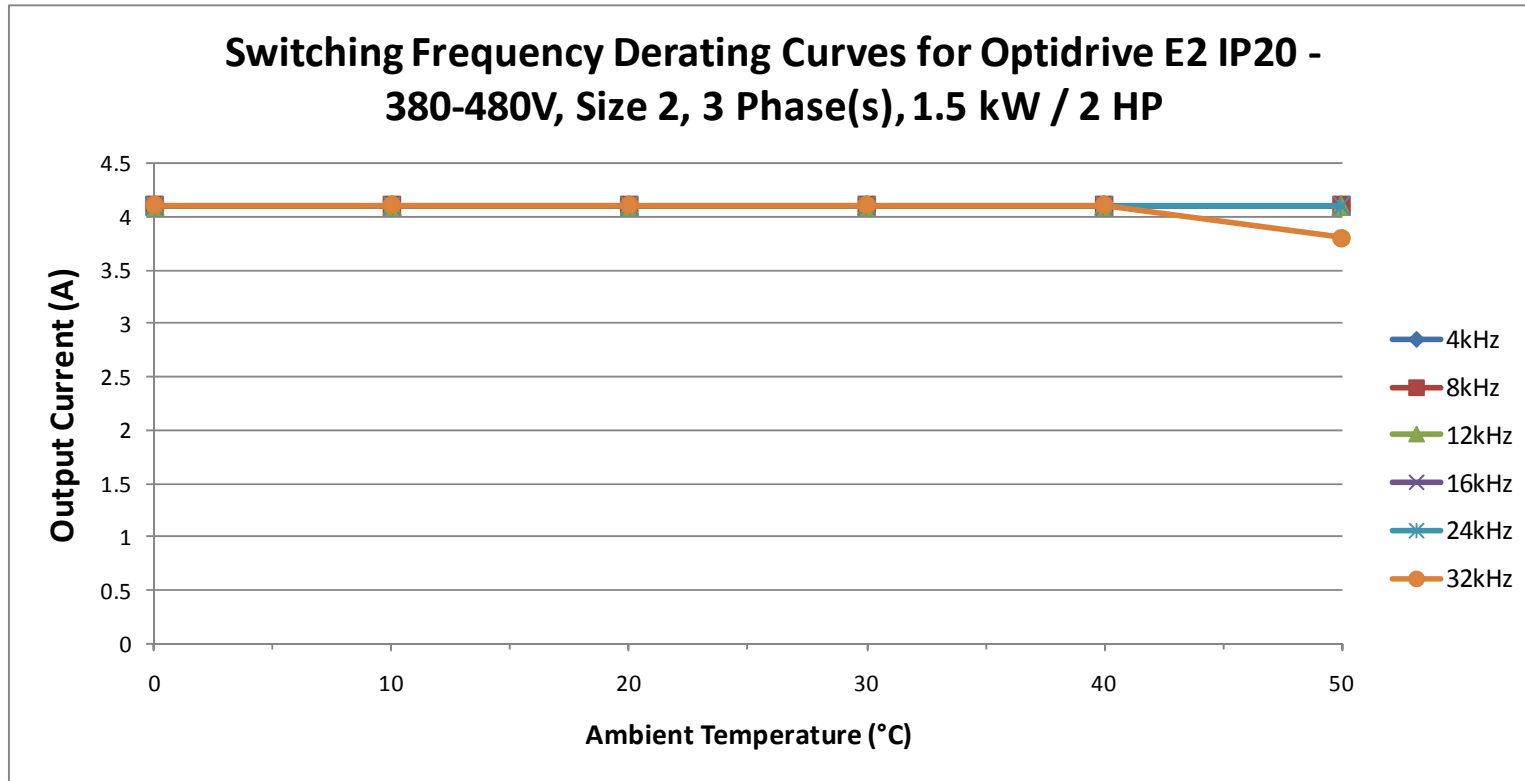
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	4kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	8kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	12kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	16kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	24kHz	4.1	4.1	4.1	4.1	4	3
380-480V, Size 1, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	1	32kHz	4.1	4.1	4.1	4.1	3.7	2.7



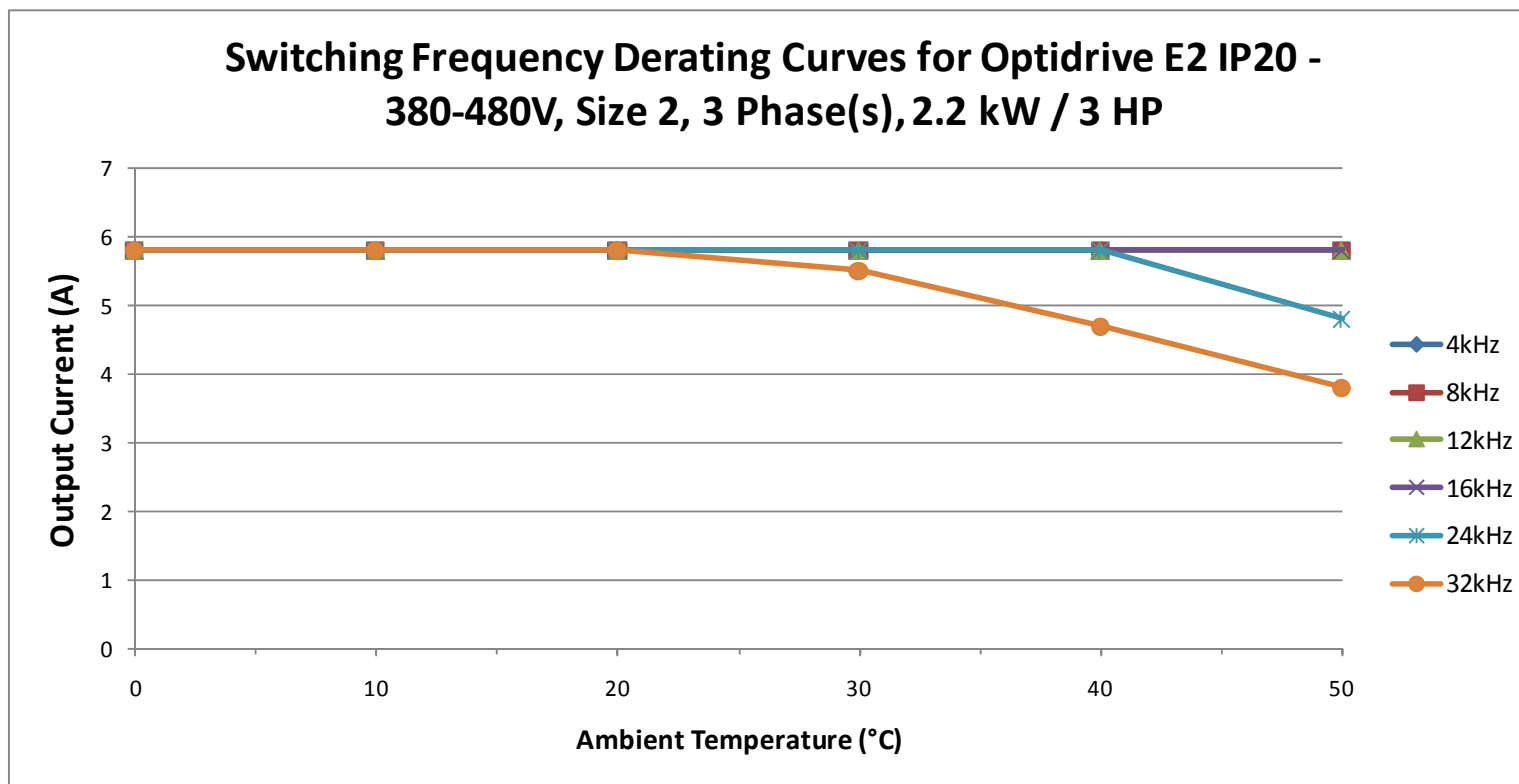
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	4kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	8kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	12kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	16kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	24kHz	4.1	4.1	4.1	4.1	4.1	4.1
380-480V, Size 2, 3 Phase(s), 1.5 kW / 2 HP	380-480V	3	1.5	2	4.1	2	32kHz	4.1	4.1	4.1	4.1	4.1	3.8



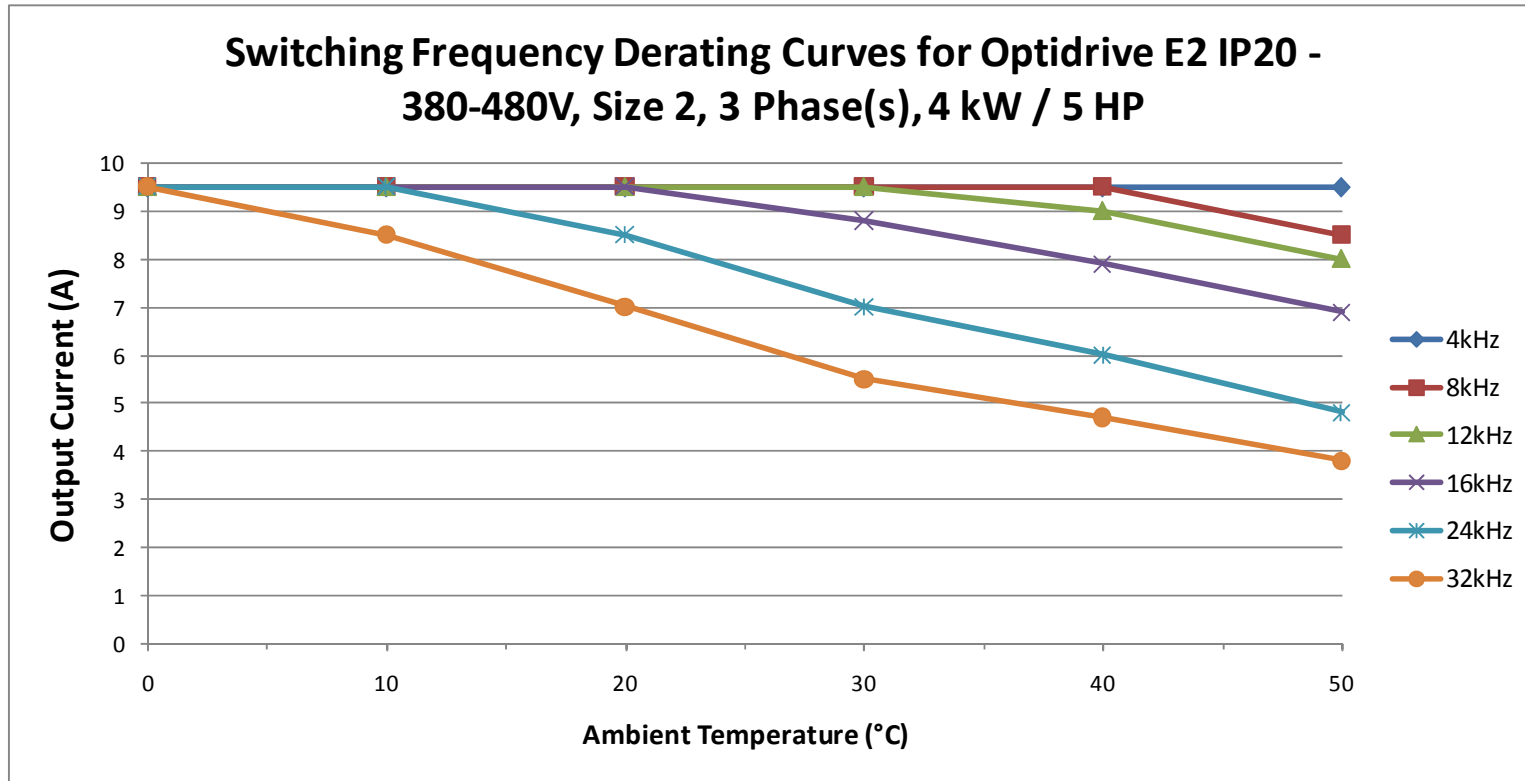
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	4kHz	5.8	5.8	5.8	5.8	5.8	5.8
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	8kHz	5.8	5.8	5.8	5.8	5.8	5.8
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	12kHz	5.8	5.8	5.8	5.8	5.8	5.8
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	16kHz	5.8	5.8	5.8	5.8	5.8	5.8
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	24kHz	5.8	5.8	5.8	5.8	5.8	4.8
380-480V, Size 2, 3 Phase(s), 2.2 kW / 3 HP	380-480V	3	2.2	3	5.8	2	32kHz	5.8	5.8	5.8	5.5	4.7	3.8



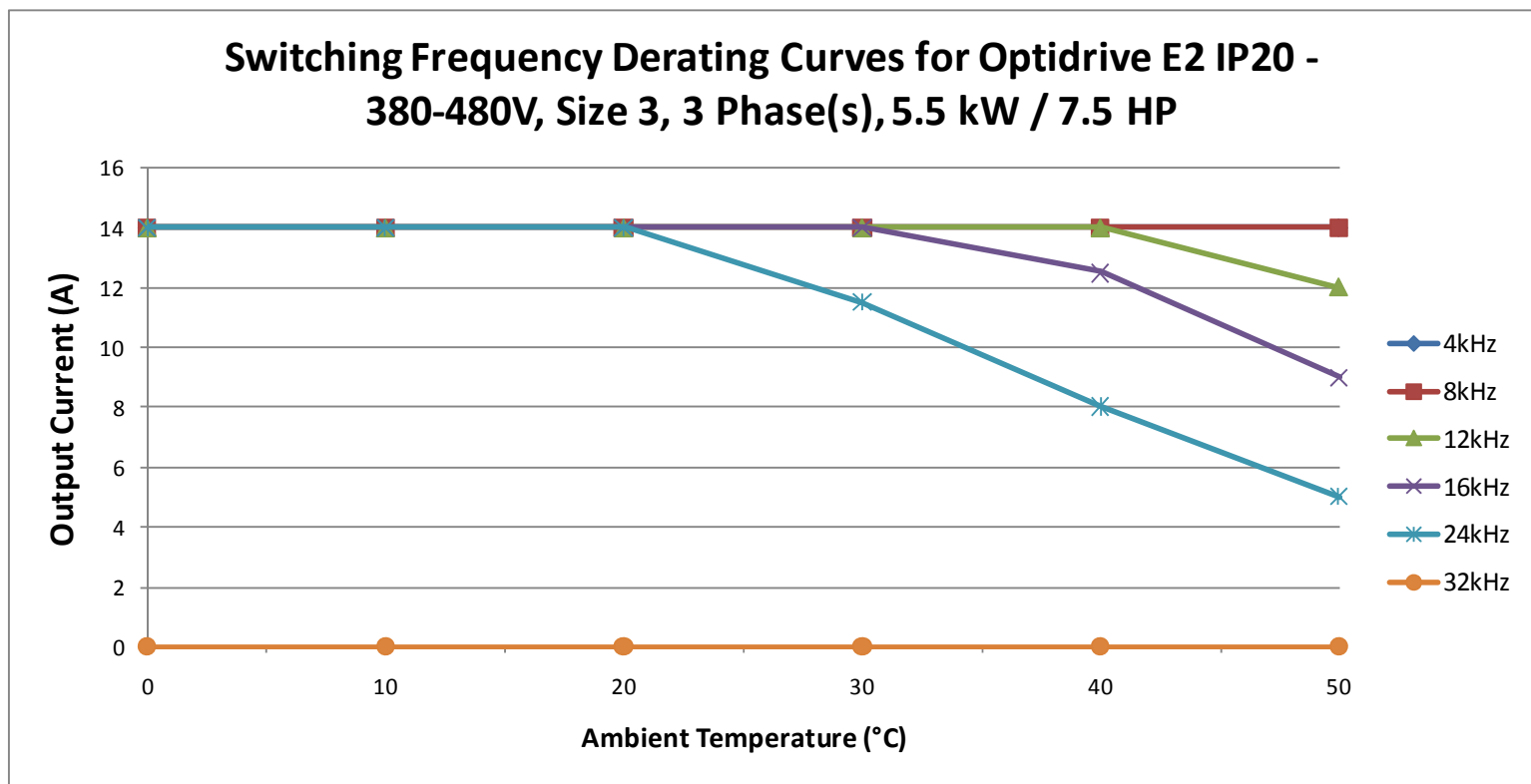
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	4kHz	9.5	9.5	9.5	9.5	9.5	9.5
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	8kHz	9.5	9.5	9.5	9.5	9.5	8.5
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	12kHz	9.5	9.5	9.5	9.5	9	8
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	16kHz	9.5	9.5	9.5	8.8	7.9	6.9
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	24kHz	9.5	9.5	8.5	7	6	4.8
380-480V, Size 2, 3 Phase(s), 4 kW / 5 HP	380-480V	3	4	5	9.5	2	32kHz	9.5	8.5	7	5.5	4.7	3.8



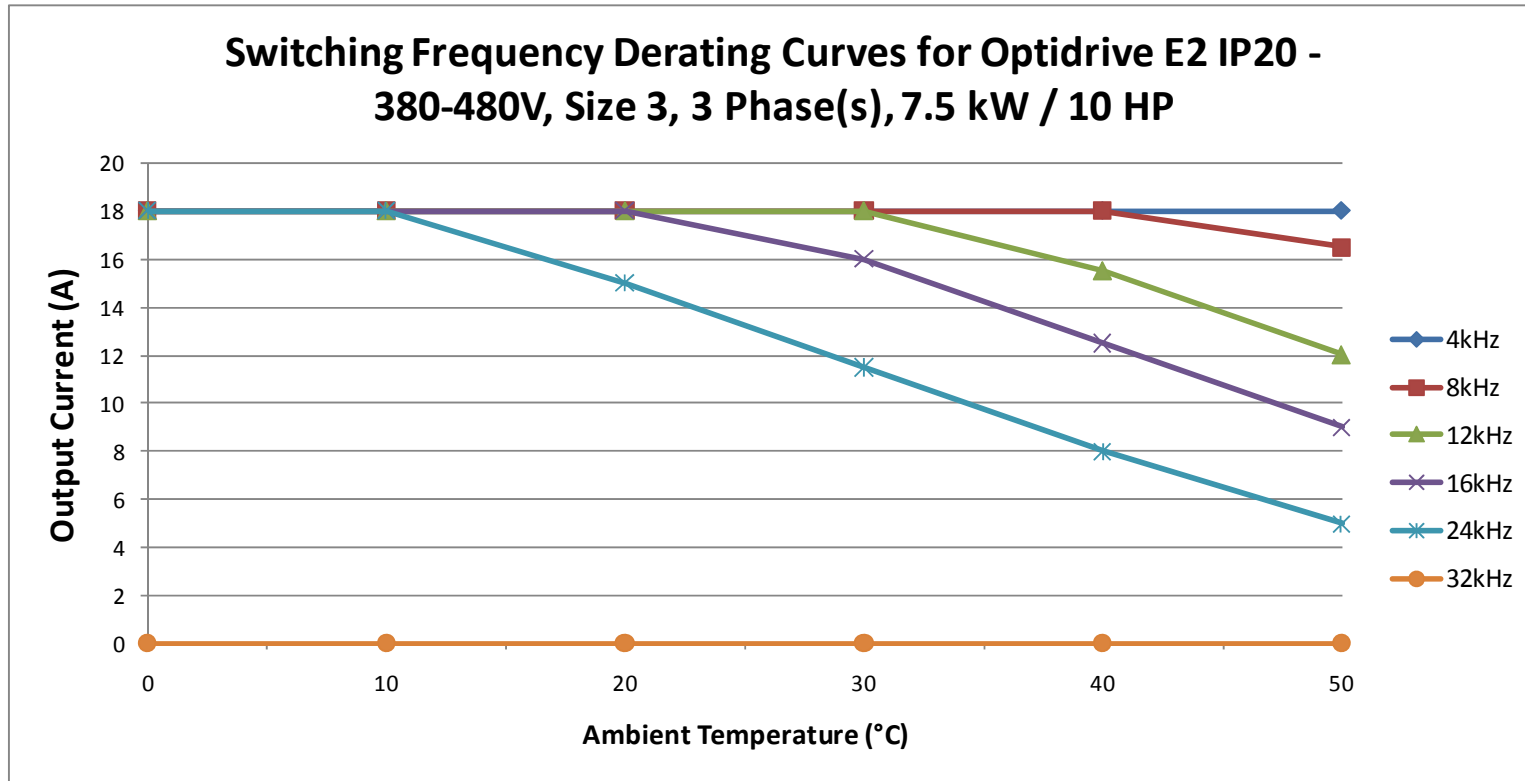
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	4kHz	14	14	14	14	14	14
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	8kHz	14	14	14	14	14	14
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	12kHz	14	14	14	14	14	12
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	16kHz	14	14	14	14	12.5	9
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	24kHz	14	14	14	11.5	8	5
380-480V, Size 3, 3 Phase(s), 5.5 kW / 7.5 HP	380-480V	3	5.5	7.5	14	3	32kHz	-	-	-	-	-	-



380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	4kHz	18	18	18	18	18	18
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	8kHz	18	18	18	18	18	16.5
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	12kHz	18	18	18	18	15.5	12
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	16kHz	18	18	18	16	12.5	9
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	24kHz	18	18	15	11.5	8	5
380-480V, Size 3, 3 Phase(s), 7.5 kW / 10 HP	380-480V	3	7.5	10	18	3	32kHz	-	-	-	-	-	-



380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP

Full Description	Voltage	Phases	kW	HP	Output Current (A)	Frame Size	Switching frequency	Ambient temperature degrees C					
								0	10	20	30	40	50
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	4kHz	24	24	24	24	24	21
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	8kHz	24	24	24	24	20.5	16.5
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	12kHz	24	24	24	19.5	15.5	12
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	16kHz	24	24	20	16	12.5	9
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	24kHz	24	20	15	11.5	8	5
380-480V, Size 3, 3 Phase(s), 11 kW / 15 HP	380-480V	3	11	15	24	3	32kHz	-	-	-	-	-	-

