



Key functions

Function	Function
Jog	✓ Supply loss detection
Bi-polar reference	✓ Low DC link operation
Pre-set speeds	8 Analogue input control
Preset timer	✓ Analogue output control
Skip frequencies	3 Temperature monitoring
Skip frequency dead bands	✓ Digital input control
Local/Remote	✓ Digital I/O programmable control
S-Ramp	✓ Relay control
Acceleration Rates	8 Mechanical Brake Controller
Deceleration Rates	8 Keypad button assignment
Torque reference	✓ Motorised pot
Control mode: Linear V/f	✓ Logic function control
Control mode: Open-loop vector	✓ Timer function control
Control mode: Quadratic V/f	✓ Limit switch control
Stator resistance compensation	✓ Variable selector
Slip compensation	✓ PID Control Loops
Sensorless control of induction motors	✓ Energy meter
Sensorless control of permanent magnet motors	✓ Trip time stamping (using real-time clock , if available)
Auto-tune static (including permanent magnet motors)	✓ Trip logging
Auto-tune rotating	✓ Run time log
Catch a spinning motor	✓ Control word control
Stop mode: Ramp	✓ Auto reset
Stop mode: Coast	✓ Cloning
Stop mode: Fast Ramp	✓ On-board PLC
DC injection braking	148 Additional Application parameters
Programmable braking	✓ Second motor set-up
Motor Pre-heat control	✓ Speed feedback via options

0.75 kW – 2.8 MW (1.0 - 4,200 hp)

200 V | 400 V | 575 V | 690 V

Unidrive M Highlights

- Energy savings
- Minimise downtime and system set-up time with advanced keypad options
- Reduced system costs with direct integration
- Improve throughput with advanced open-loop motor control algorithms
- Conform to safety standards, maximise uptime and reduce costs by direct safety system integration

Dimensions

Frame Size	Overall Dimensions						Mounting Dimensions				Mounting Hole Diameter		Weight	
	mm			in			mm		in		mm	in	kg	lb
	H**	W	D	H**	W	D	H	W	H	W				
3	365	83	200	14.37	3.27	7.87	370	73	14.57	2.87	5	0.2	4.5	9.9
4	365	124	200	14.37	4.88	7.87	375	106	14.76	4.17	6	0.23	6.5	14.3
5	365	143	200	14.37	5.63	7.87	375	106	14.76	4.17	6.5	0.26	7.4	16.3
6	365	210	227	14.37	8.27	8.94	378	196	14.88	7.72	7	0.28	14	30.9
7	508	270	280	20	10.63	11.02	538	220	21.18	8.66	9	0.35	28	61.7
8	753	310	290	29.65	12.21	11.42	884	259	30.87	10.2	9	0.35	52	114.6
9E / 10E	1010	310	290	39.7	12.21	11.42	1051	259	41.38	10.2	9	0.35	46	101.4
9A	1049	310	290	41.3	12.21	11.42	1090	259	42.91	10.2	9	0.35	66.5	146.6
11E	1190	310	312	46.9	12.2	48.9	1222	259	48.11	10.2	9	0.35	63	138.9
12	1750	295	526	68.90	11.61	20.71	N/A	N/A	N/A	N/A	N/A	N/A	D:113 T:130	D:249 T:287



** Overall dimensions do not include removable mounting brackets

Specifications

Electrical Ratings

A.C. Supply Ratings: 200 V drive: 200 to 240 VAC $\pm 10\%$
400 V drive: 380 to 480 VAC $\pm 10\%$
575 V drive: 500 to 575 VAC $\pm 10\%$
690 V drive: 500 to 690 VAC $\pm 10\%$

Supply Phases: 3 phases (single phase ratings available on request)

Supply Types: TN-S, TN-C-S, TT and IT

Input Frequency: 45 to 66 Hz

D.C. Supply: Connect up to 10 drives in parallel via D.C. bus

Active Front End: All variants support regen mode for the inverter to regenerate energy back tot the grid

Braking Transistor: Built-in as standard (frame 3 to 8) or optional (frame 9 to 12)

Output Frequency (Open-loop): Standard drives: 599 Hz
High speed drives: 3,000 Hz

Output Frequency (Closed-loop or sensorless RFO): Standard drives: 550 Hz
High speed drives: 1,250 Hz

EMC with internal filter: EN61800-3 (2nd environment) and EN61000-6-2 (Immunity)

EMC with external filter: EN/IEC 61000-6-3 and EN/IEC 61000-6-4

Switching Frequency: 2 to 16 kHz

Current Loop: 62.5 μ s

Environmental Specifications

Enclosure type: IP20 / NEMA1 / UL Open Class / UL Type 1 with additional kit

Ambient temperature: Without derate: -20 to 40 °C (-4 to 104 °F)
With derate: -20 to 55 °C (-4 to 131 °F)

Humidity: 95 % maximum (non-condensing)

Altitude: 0 to 3,000 m (9,900 ft)
De-rate 1 % per 100 m (330 ft) above 1,000 m (3,300 ft)

Random Vibration: Tested in accordance with IEC 60068-2-64

Mechanical Shock: Tested in accordance with IEC 60068-2-29

Conformal Coating: All drives have conformally coated PCBs as standard

Corrosive Gases: Levels must not exceed Class 3C2 of IEC 60721-3-3

Compliance

EN/IEC 61800-5-1 (Electrical Safety)

EN/IEC 61131-2 (I/O)

Safe Torque Off independently assessed by TÜV to IEC 61800-5-2 SIL 3 and EN ISO 13849-1 PLe

UL 508C (Electrical Safety)

DNV certified for use in Marine & Offshore applications

Product Marks       

Overload Limits

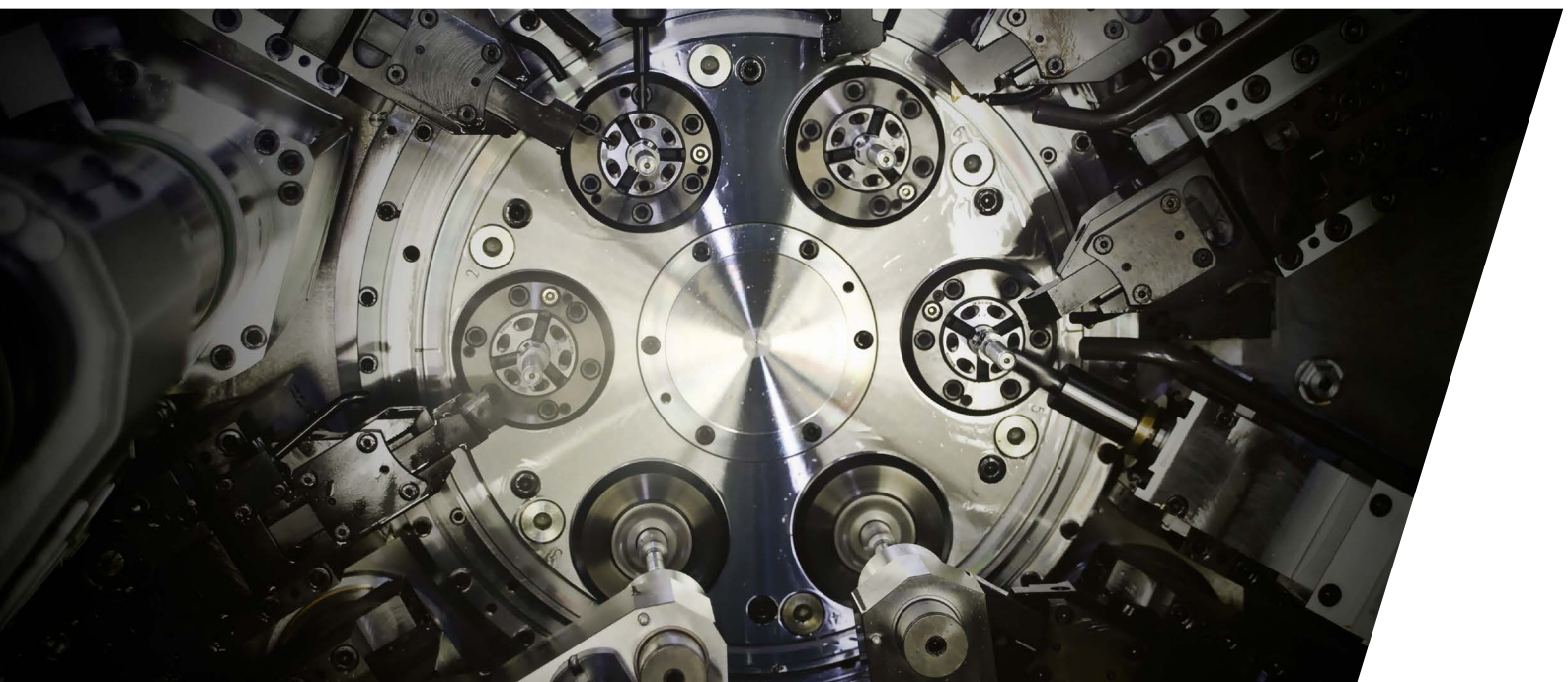
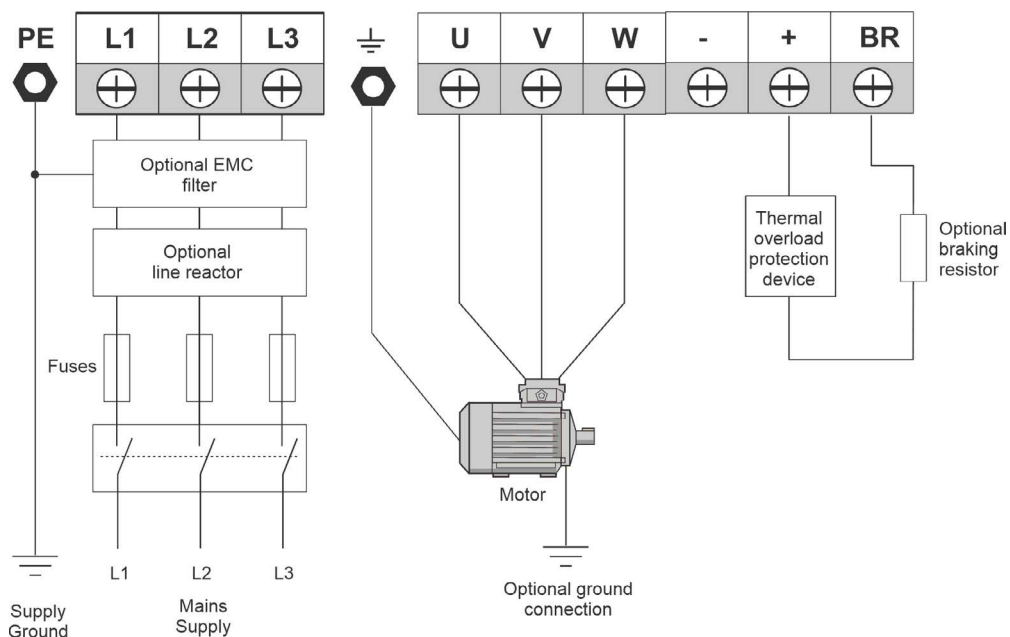
Typical overload limits (based on drive rated current)				
Operating mode	Closed-loop from cold	Closed-loop from 100 %	Open-loop from cold	Open-loop from 100 %
Normal duty overload (size 11 and below)	110 % for 165 s	110 % for 9 s	110% for 165 s	110% for 9 s
Normal duty overload (size 12)	110 % for 180 s	110 % for 10 s	110 % for 180 s	110 % for 10 s
Heavy duty overload (size 8 and below)	200 % for 28 s	200% for 3 s	150 % for 60 s	150 % for 7 s
Heavy duty overload (size 9A, 9E, 10, 11)	170 % for 42 s	170 % for 5 s	150 % for 60 s	150% for 7 s
Heavy duty overload (size 12)	140 % for 60 s	140 % for 10 s	140 % for 60 s	140 % for 10 s

Drive Feature Table

Standard Drive:	M600	M701	M700	M702
High Speed Drive:	X	HS71	HS70	HS72
STO SIL3:	Single Channel		Dual Channel	
I/O Terminals	Analog & Digital I/O		Digital I/O Only	
Onboard Comms:	MODBUS RTU		Ethernet/IP, MODBUS TCP, RTMoE, PROFINET	
Closed-loop control	With SI Option	✓	✓	✓
Encoder Inputs:	X	2	2	2
Encoder Outputs:	X	2	2	2
Advanced Motion Controller:	X	✓	✓	✓
Regen Mode (Use as an active front end):	✓	✓	✓	✓
Supported Motors				
Asynchronous (Induction) Motor	✓	✓	✓	✓
Synchronous (PM) Motor	✓	✓	✓	✓
Synchronous Reluctance Motor	✓	✓	✓	✓
Hybrid PM Assisted Motor	✓	✓	✓	✓
Closed-loop control	With SI Option	✓	✓	✓

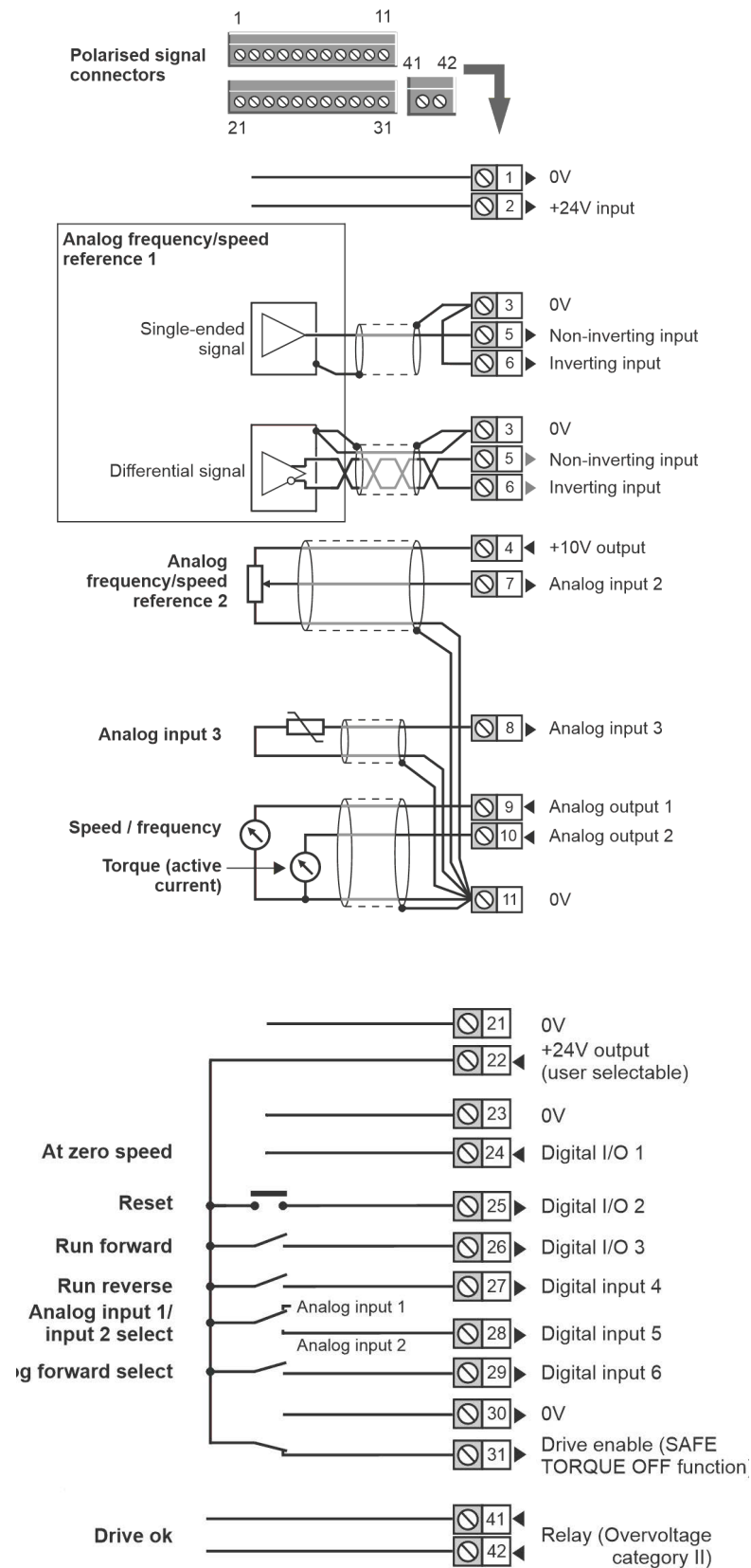
Connections

Typical Power Connections



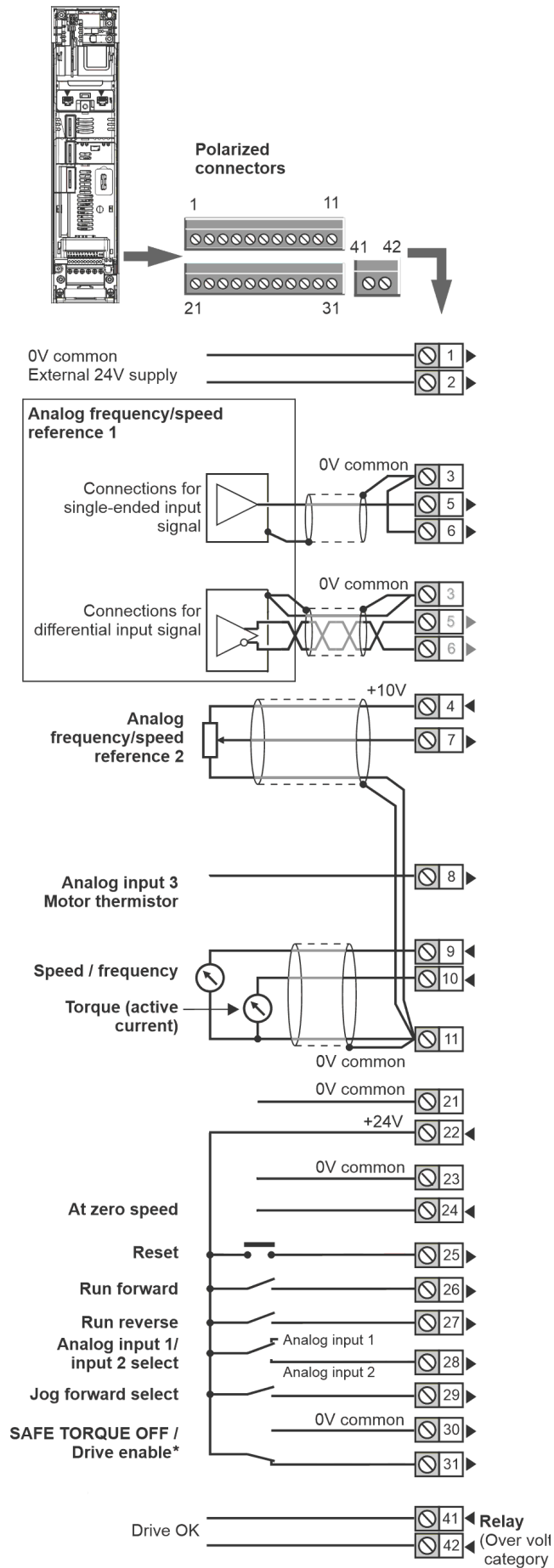
M600:

Default Control Connections



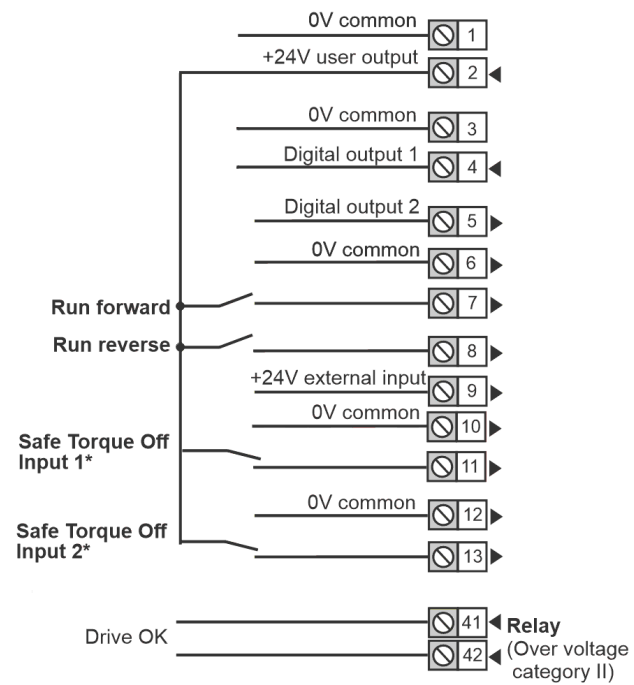
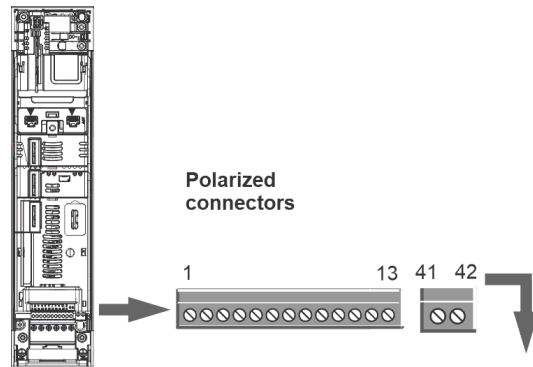
NOTE: DC- terminal is not accessible on frame 9E to 11E

M700/M701: Default Control Connections



M702

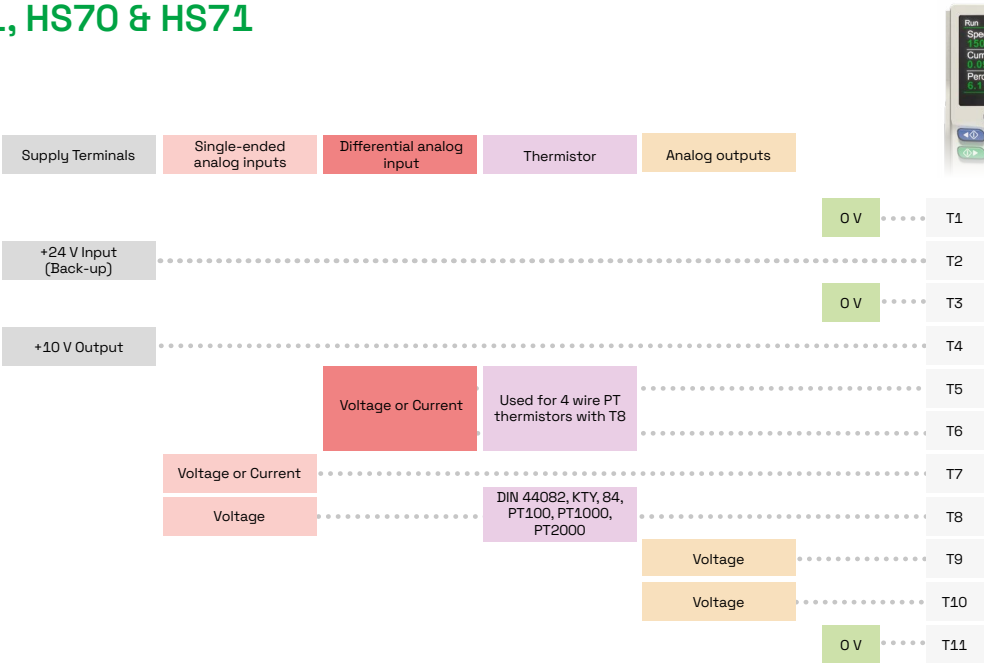
Default Control Connections



Inputs & Outputs

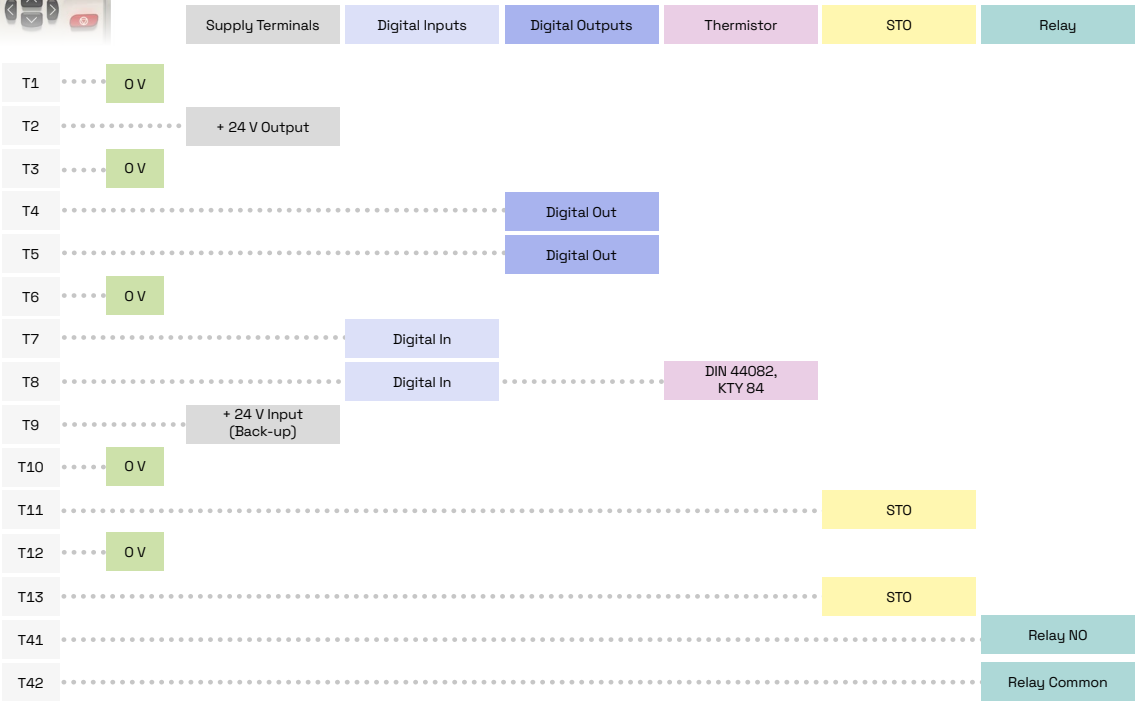
Unidrive M600, M700, M701, HS70 & HS71

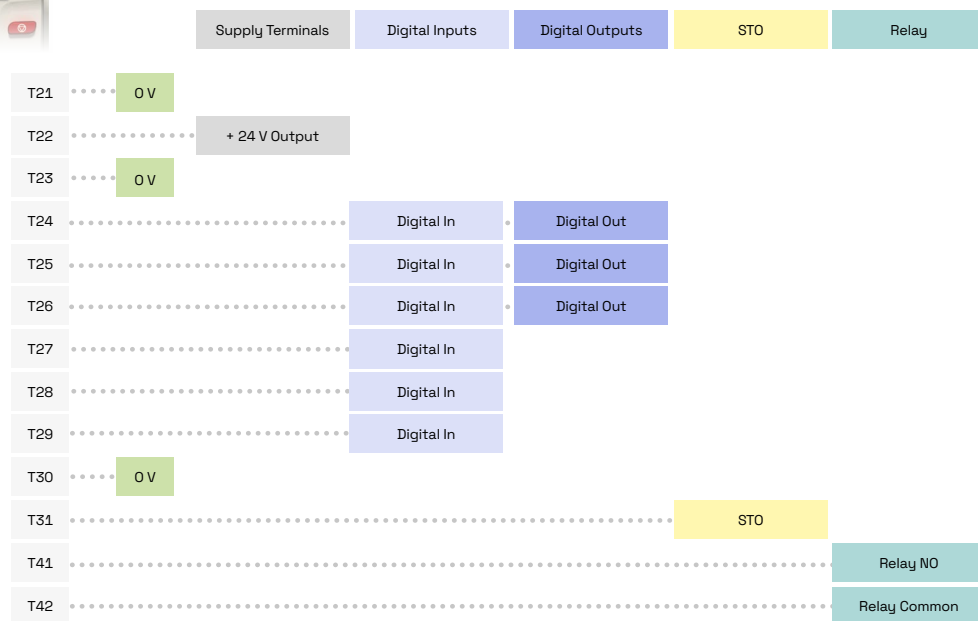
Up to 3 analog inputs,
2 analog outputs, 6
digital inputs, 3 digital
outputs, 1 STO & 1 relay



Unidrive M702 & HS72

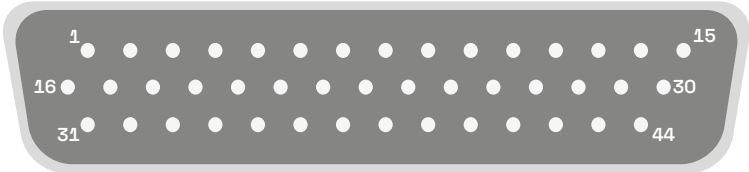
Up to 2 digital
inputs, 2 digital
outputs, 2 STO
& 1 relay





SI-I/O 24 Plus

Up to 16 digital inputs, 8 digital outputs, an encoder input & an encoder output



1 Encoder + Vdc Out	2 A\	3 A	4 U\	5 U	6 DO1	7 DO2	8 DO3	9 DI1	10 DI2	11 DI3	12 DI4	13 DI5	14 I/O + Vdc In	15 I/O OV
16 Encoder OV	17 B\	18 B	19 V\	20 V	21 DO4	22 DO5	23 DO6	24 DI6	25 DI7	26 DI8	27 DI9	28 DI10	29 I/O + Vdc In	30 I/O OV
31 Z\	32 Z	33 W\	34 W	35 Motor thermistor	36 DO7	37 DO8	38 DI11	39 DI12	40 DI13	41 DI14	42 DI15	43 DI16	44 I/O OV	

Ordering Guide

Order code for drives

M700	-	03	4	00730	A	10100A	B	100
		Frame Size		Current Rating (A): Heavy Duty Rating x 10		Region 00 = 50 Hz 01 = 60 Hz		
Drive Range M700 = Multi-protocol M701 = RS485 Modbus RTU M702 = Safety enhanced M600 = Open-loop M000 = Unassigned power module		Voltage Rating 2 = 200 V 4 = 400 V 5 = 575 V 6 = 690 V		Power Format A = AC in AC out (with internal line choke) D = DC in AC out (inverter) E = AC in AC out (external line choke required) T = AC in AC out (12 pulse rectifier plus inverter)		Brake Transistor B = Brake Transistor included N = No Brake Transistor		

Order Codes for Control Pods for Unassigned Drives (M000)

Control Module Range for unassigned power module (M000)

Mxxx-STANDARD011100A0100



Single module systems

Mxxx-MASTER00011100A0100

Master control pod for systems with more than one module.

M000-FOLLOWER011100A0100



Follower pod for systems with multiple modules



For more information on Modular Systems please see the latest issue of the Modular Power Brochure or scan the QR code to visit our website.

Model number and ratings

200 to 240 Vac +/-10%

Product Code M600/M700/M701/M702	Supply Phases	Heavy Duty			Normal Duty		
		Max Cont. Current (A)	Motor Power (kW)	Motor Power (HP)	Max Cont. Current (A)	Motor Power (kW)	Motor Power (HP)
Mxxx - 03200050A	3	5	0.75	1	6.6	1.1	1.5
Mxxx - 03200066A	3	6.6	1.1	1.5	8	1.5	2
Mxxx - 03200080A	3	8	1.5	2	11	2.2	3
Mxxx - 03200106A	3	10.6	2.2	3	12.7	3	3
Mxxx - 04200137A	3	13.7	3	3	18	4	5
Mxxx - 04200185A	3	18.5	4	5	25	5.5	7.5
Mxxx - 05200250A	3	25	5.5	7.5	30	7.5	10
Mxxx - 06200330A	3	33	7.5	10	50	11	15
Mxxx - 06200440A	3	44	11	15	58	15	20
Mxxx - 07200610A	3	61	15	20	75	18.5	25
Mxxx - 07200750A	3	75	18.5	25	94	22	30
Mxxx - 07200830A	3	83	22	30	117	30	40
Mxxx - 08201160A	3	116	30	40	149	37	50
Mxxx - 08201320A	3	132	37	50	180	45	60
Mxxx - 09201760A	3	176	45	60	216	55	75
Mxxx - 09202190A	3	219	55	75	266	75	100
Mxxx - 09201760E	3	176	45	60	216	55	75
Mxxx - 09202190E	3	219	55	75	266	75	100
Mxxx - 10202830E	3	283	75	100	325	90	125
Mxxx - 10203000E	3	300	90	125	360	110	150

380 to 480 Vac +/-10%

Product Code M600/M700/M701/M702	Supply Phases	Heavy Duty			Normal Duty		
		Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)	Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)
Mxxx - 03400025A	3	2.5	0.75	1	3.4	1.1	1.5
Mxxx - 03400031A	3	3.1	1.1	1.5	4.5	1.5	2
Mxxx - 03400045A	3	4.5	1.5	2	6.2	2.2	3
Mxxx - 03400062A	3	6.2	2.2	3	7.7	3	5
Mxxx - 03400078A	3	7.8	3	5	10.4	4	5
Mxxx - 03400100A	3	10	4	5	12.3	5.5	7.5
Mxxx - 04400150A	3	15	5.5	10	18.5	7.5	10
Mxxx - 04400172A	3	17.2	7.5	10	24	11	15
Mxxx - 05400270A	3	27	11	20	30	15	20
Mxxx - 05400300A	3	30	15	20	31	15	20
Mxxx - 06400350A	3	35	15	25	38	18.5	25
Mxxx - 06400420A	3	42	18.5	30	48	22	30
Mxxx - 06400470A	3	47	22	30	63	30	40
Mxxx - 07400660A	3	66	30	50	79	37	50
Mxxx - 07400770A	3	77	37	60	94	45	60
Mxxx - 07401000A	3	100	45	75	112	55	75
Mxxx - 08401340A	3	134	55	100	155	75	100
Mxxx - 08401570A	3	157	75	125	184	90	125
Mxxx - 09402000A	3	200	90	150	221	110	150
Mxxx - 09402240A	3	224	110	150	266	132	200
Mxxx - 09402000E	3	200	90	150	221	110	150
Mxxx - 09402240E	3	224	110	150	266	132	200
Mxxx - 10402700E	3	270	132	200	320	160	250
Mxxx - 10403200E	3	320 ¹	160	250	361	200	300
Mxxx - 11403770E	3	377	185	300	437	225	350
Mxxx - 11404170E	3	417 ¹	200	350	487 ¹	250	400
Mxxx - 11404640E	3	464 ¹	250	400	507 ¹	280	450
Mxxx - 12404800T	3	480 ¹	250	400	608 ¹	315	500
Mxxx - 12405660T	3	566 ¹	315	450	660 ¹	355	550
Mxxx - 12406600T	3	660 ²	355	550	755 ¹	400	650
Mxxx - 12407200T	3	720 ³	400	600	865 ⁴	500	700

¹ At 2 kHz switching frequency.

² 140% Overload at 35°C and below and 125% above that.

³ 140% Overload at 30°C and below and 125% above that.

⁴ 110% Overload at 30°C and below and No Overload above that.

500 to 575 Vac +/-10%

Product Code M600/M700/M701/M702	Supply Phases	Heavy Duty			Normal Duty		
		Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)	Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)
Mxxx - 05500030A	3	3	1.5	2	3.9	2.2	3
Mxxx - 05500040A	3	4	2.2	3	6.1	4	5
Mxxx - 05500069A	3	6.9	4	5	10	5.5	7.5
Mxxx - 06500100A	3	10	5.5	7.5	12	7.5	10
Mxxx - 06500150A	3	15	7.5	10	17	11	15
Mxxx - 06500190A	3	19	11	15	22	15	20
Mxxx - 06500230A	3	23	15	20	27	18.5	25
Mxxx - 06500290A	3	29	18.5	25	34	22	30
Mxxx - 06500350A	3	35	22	30	43	30	40
Mxxx - 07500440A	3	44	30	40	53	45	50
Mxxx - 07500550A	3	55	37	50	73	55	60
Mxxx - 08500630A	3	63	45	60	86	75	75
Mxxx - 08500860A	3	86	55	75	108	90	100
Mxxx - 09501040A	3	104	75	100	125	110	125
Mxxx - 09501310A	3	131	90	125	150	110	150
Mxxx - 09501040E	3	104	75	100	125	110	125
Mxxx - 09501310E	3	131	90	125	150	110	150
Mxxx - 10501520E	3	152	110	150	200	130	200
Mxxx - 10501900E	3	190	132	200	200	150	200
Mxxx - 11502000E	3	200	150	200	248	175	250
Mxxx - 11502540E	3	254 ¹	185	250	288 ¹	225	300
Mxxx - 11502850E	3	285 ¹	225	300	315 ¹	250	350
Mxxx - 12503150	3	315	250	350	376	250	350
Mxxx - 12503600	3	360	250	350	428	300	400
Mxxx - 12504100	3	410	300	400	480	330	450
Mxxx - 12504600	3	460	330	450	532	370	500

¹At 2 kHz switching frequency.

500 to 690 Vac +/-10%

Product Code M600/M700/M701/M702	Supply Phases	Heavy Duty			Normal Duty		
		Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)	Max Cont. Current (A)	Motor Power (kW)	Motor Power (hp)
Mxxx - 07600190A	3	19	15	20	23	18.5	25
Mxxx - 07600240A	3	24	18.5	25	30	22	30
Mxxx - 07600290A	3	29	22	30	36	30	40
Mxxx - 07600380A	3	38	30	40	46	37	50
Mxxx - 07600440A	3	44	37	50	52	45	60
Mxxx - 07600540A	3	54	45	60	73	55	75
Mxxx - 08600630A	3	63	55	75	86	75	100
Mxxx - 08600860A	3	86	75	100	108	90	125
Mxxx - 09601040A	3	104	90	125	125	110	150
Mxxx - 09601310A	3	131	110	150	155	132	175
Mxxx - 09601040E	3	104	90	125	125	110	150
Mxxx - 09601310E	3	131	110	150	155	132	175
Mxxx - 10601500E	3	150	132	175	172	160	200
Mxxx - 10601780E	3	178	160	200	197	185	250
Mxxx - 11602100E	3	210	185	250	225	200	250
Mxxx - 11602380E	3	238 ¹	200	250	275 ¹	250	300
Mxxx - 11602630E	3	263	250	300	305	315	400
Mxxx - 12603150	3	315	280	400	376	355	450
Mxxx - 12603600	3	360	355	450	428	400	500
Mxxx - 12604100	3	410	400	500	480	450	600
Mxxx - 12604600	3	460	450	600	532	500	650

¹At 2 kHz switching frequency.

