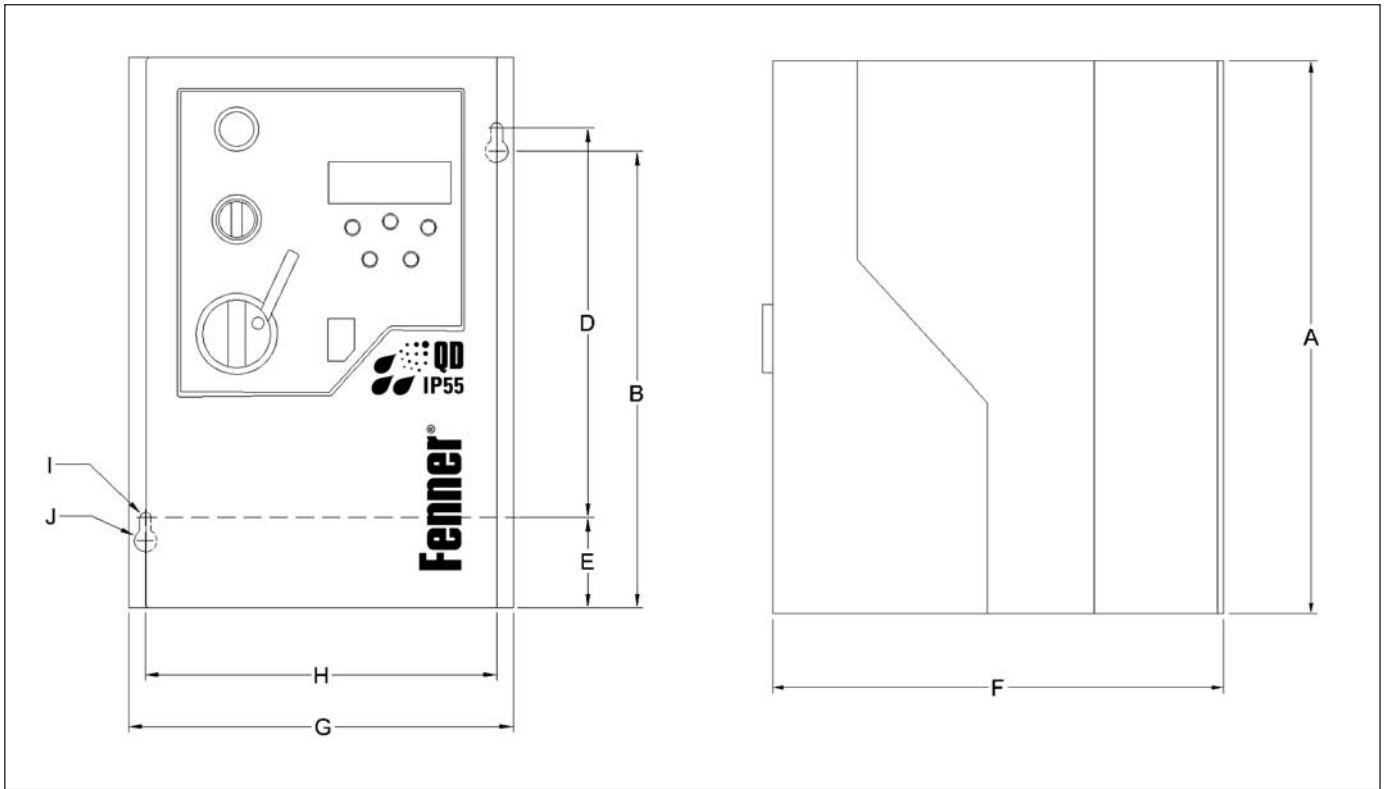




FENNER QD:IP55

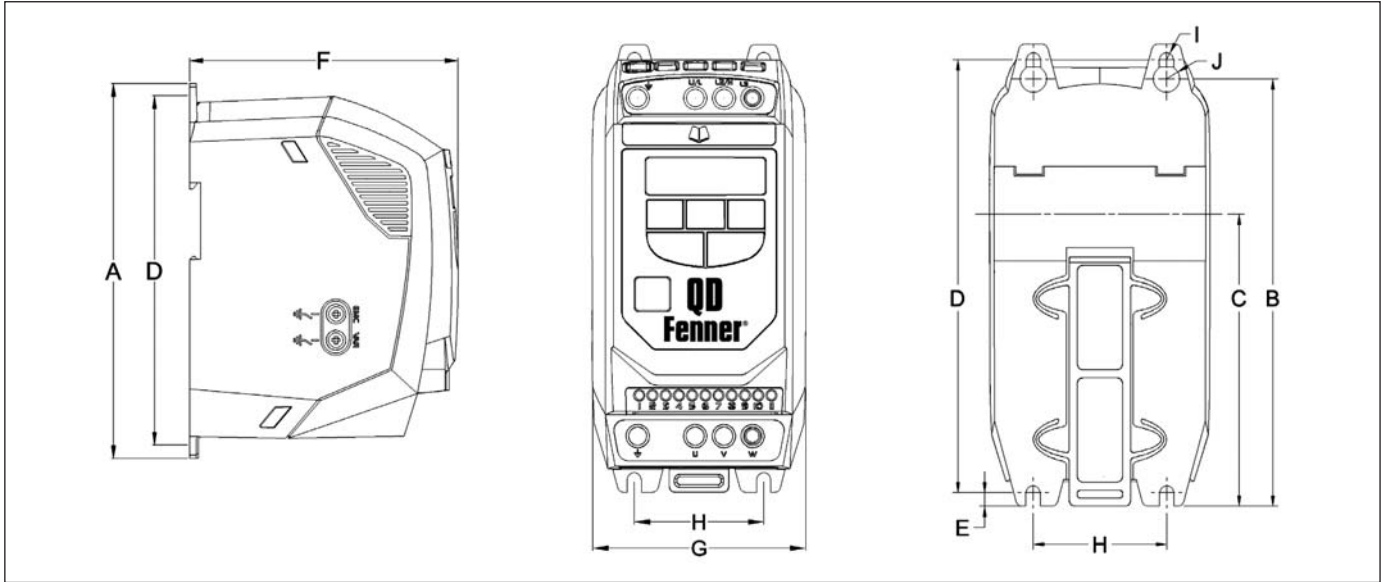


Dimensions Table

Frame Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	ØI mm	ØJ mm	Weight kg
1	200	166	–	141	33	162	140	128	4.2	8.4	1.1
2	310	276	–	251	33	176	164	153	4.2	8.4	2.6
3	310	276	–	251	33	228	210.5	197.5	4.2	8.4	2.6

\* The size 3 unit has 4 symmetrical mounting points

**FENNER QD:E**

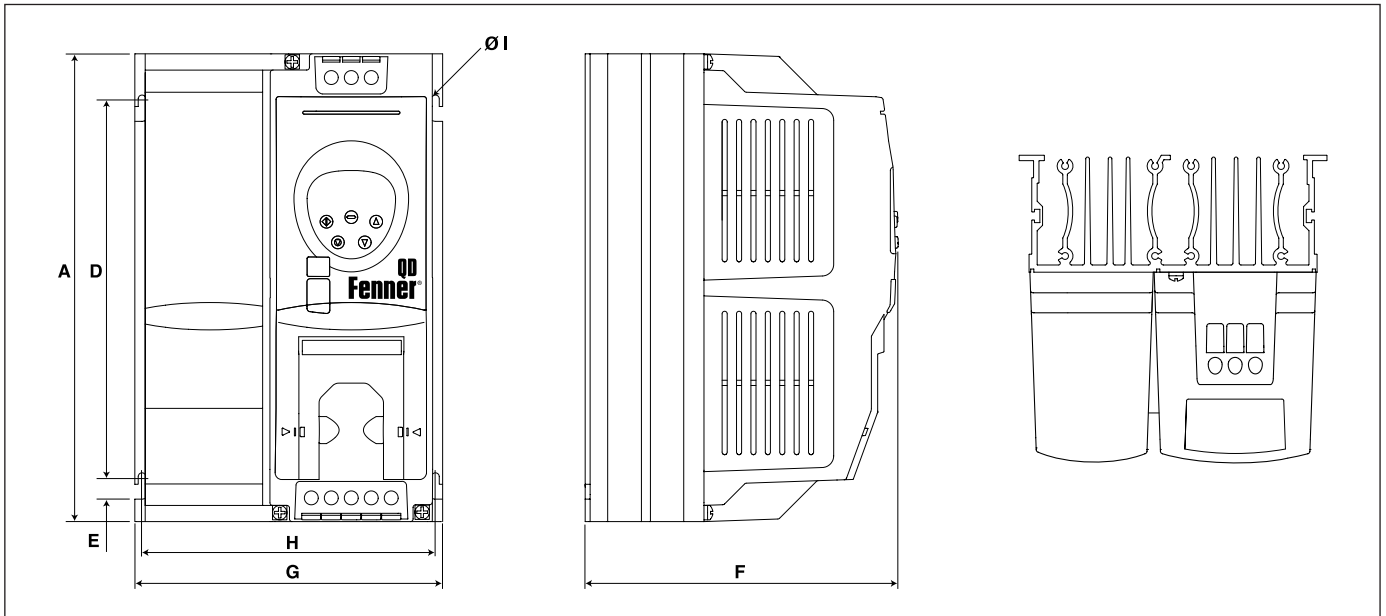


**Dimensions Table**

Frame Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	ØI mm	ØJ mm	Weight kg
1	173	160	109	162	5	123	82	50	5.5	10	1.1
2	221	207	137	209	5.3	150	109	63	5.5	10	2.6
3	261	246	*	247	6	175	131	80	5.5	10	4.0

\* Size 3 does not have a DIN-rail mounting slot

**FENNER QD:VT & QD:CT PLUS**

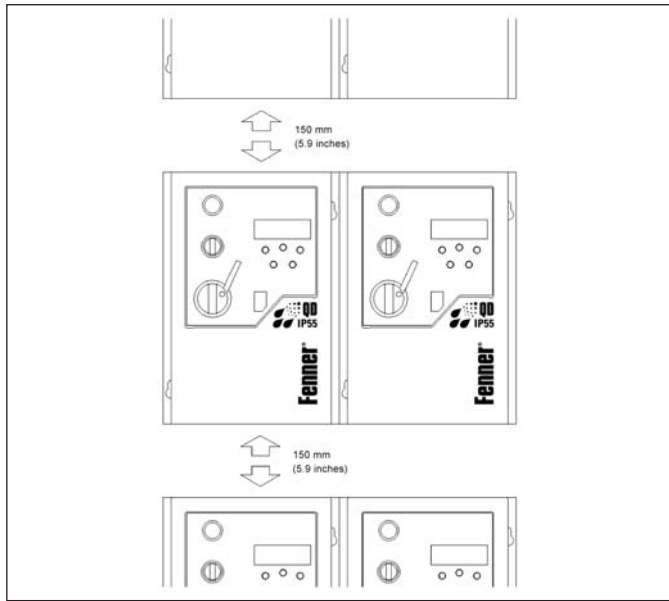


**QD:VT & QD:CT PLUS Dimensions Table**

Frame Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	ØI mm	ØJ mm	Weight kg
1	155	-	-	105	25	130	130	72	4	-	1.1
2	260	-	-	210	25	175	100	92	4	-	2.6
3	260	-	-	210	25	175	171	163	4	-	5.3
4	520	-	-	420	25	220	340	320	4	-	28
5	1045	-	-	945	50	220	340	320	9.5	-	67
6	1100	-	-	945	50	330	340	320	9.5	-	55



**FENNER QD:IP55 MOUNTING CLEARANCES**



The IP55 / NEMA 12 Fenner drive can be installed side-by-side with their heatsink flanges touching. This gives adequate ventilation space between drives.

If the IP55 Fenner drive is to be installed above another drive or any other heat-producing device, the minimum vertical spacing is 150mm (5.9 inches)

**Note: The IP55/NEMA 12 drive is intended for INDOOR USE ONLY**

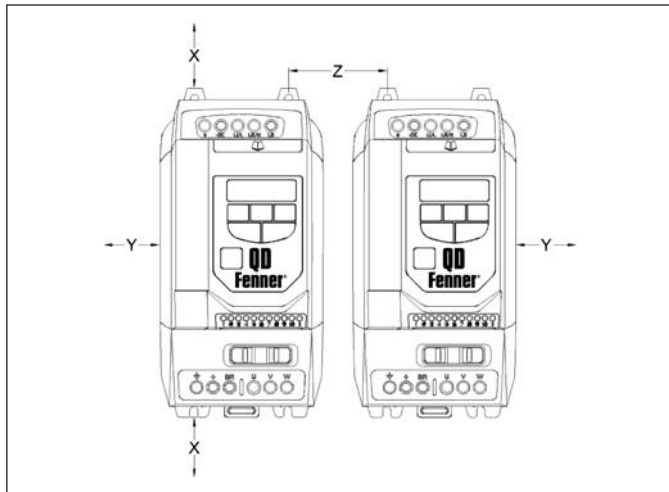
In the table below, Dimension Z assumes that the drives are mounted side-by-side with no clearance.

Typical drive heat losses are 3% of operating load conditions.

The figures below are guidelines only and the maximum operating ambient temperature of the drive **MUST NOT** be exceeded. If in doubt, please contact your local Fenner Authorised Distributor.

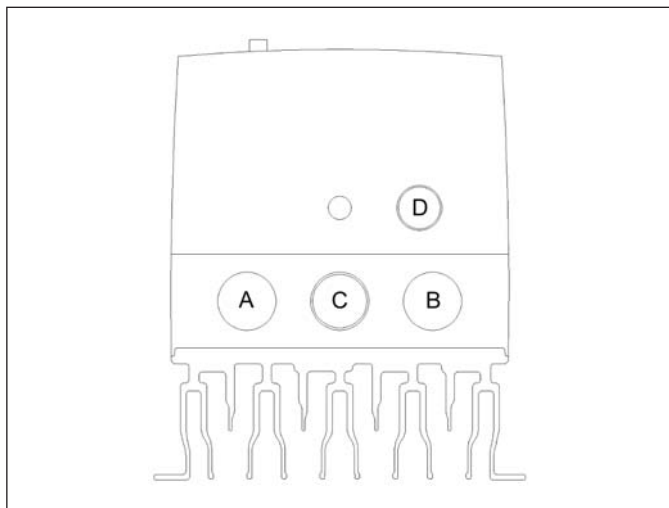
Sizes 1 & 2 are designed to be mounted onto DIN rail.

**FENNER QD:E MOUNTING CLEARANCES**



Frame Size	X mm	Y mm	Z mm	Recommended Airflow CFM (ft³/min)
1	50	50	33	11
2	75	50	46	11
3	100	50	52	26

**GLAND HOLE SIZES QD:IP55**



Any Metal conduit used **MUST** be earth bonded by means of a suitable earthing washer or gland adaptor.

**Lock Off:**

The main power isolator switch can be locked in the 'Off' position using a 20mm standard shackle padlock (not supplied).

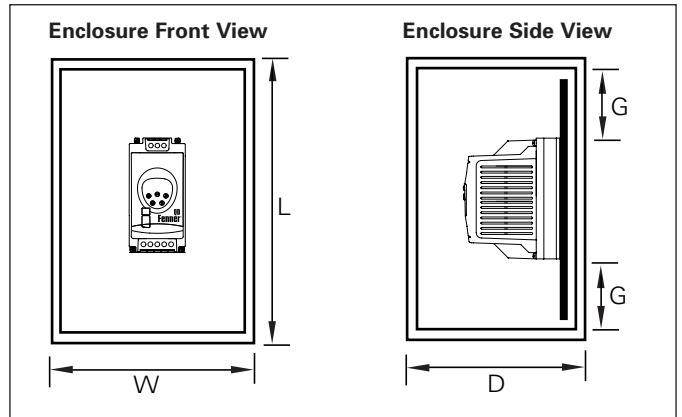
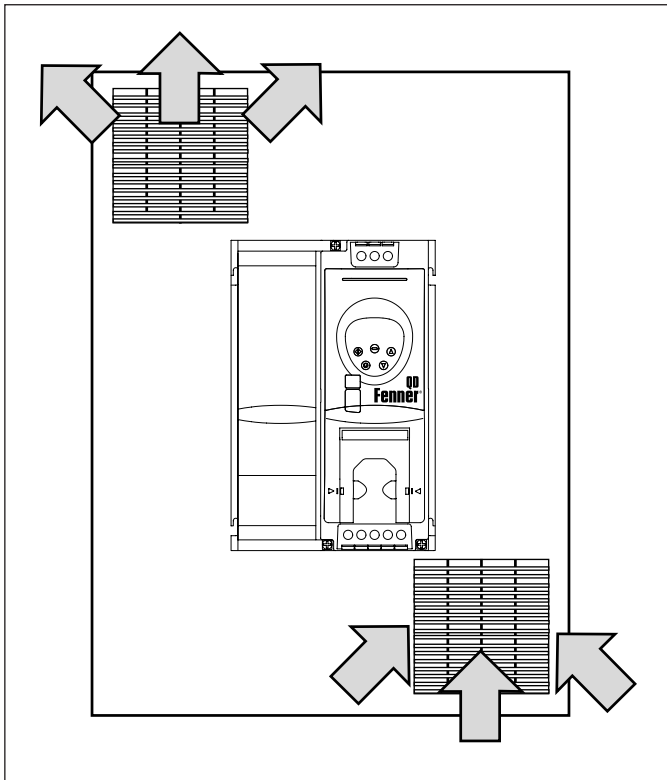
**Gland Hole Sizes**

Frame Size	Input (A) & Output (B) Power (Ø)	Centred Knockout (C) (Ø)	Terminal Cover Knockout (D) (Ø)
1	22mm	22mm	17mm
2	25mm	22mm	17mm
3	25mm	22mm	17mm

**Recommended Gland Type**

SkinTop UL approved (UL94-V0) Type 12/IP55 non-metallic cable gland or non-rigid conduit			
Frame Size	Input (A) & Output (B) Power (Ø)	Centred Knockout (C) (Ø)	Terminal Cover Knockout (D) (Ø)
1	PG13.5 / M20	PG13.5 / M20	PG9 / M16
2	PG9 / M25	PG9 / M20	PG9 / M16
3	PG9 / M25	PG9 / M20	PG9 / M16

**FENNER QD:VT & QD:CT PLUS MOUNTING CLEARANCES**



The Fenner QD:VT and QD:CT PLUS drives can be installed side-by-side with their heatsink flanges touching. This gives adequate ventilation space between them. If the drive is to be installed above another drive or any other heat producing device, the minimum vertical spacing is 150mm. The enclosure should either be force ventilated or large enough to allow natural cooling.

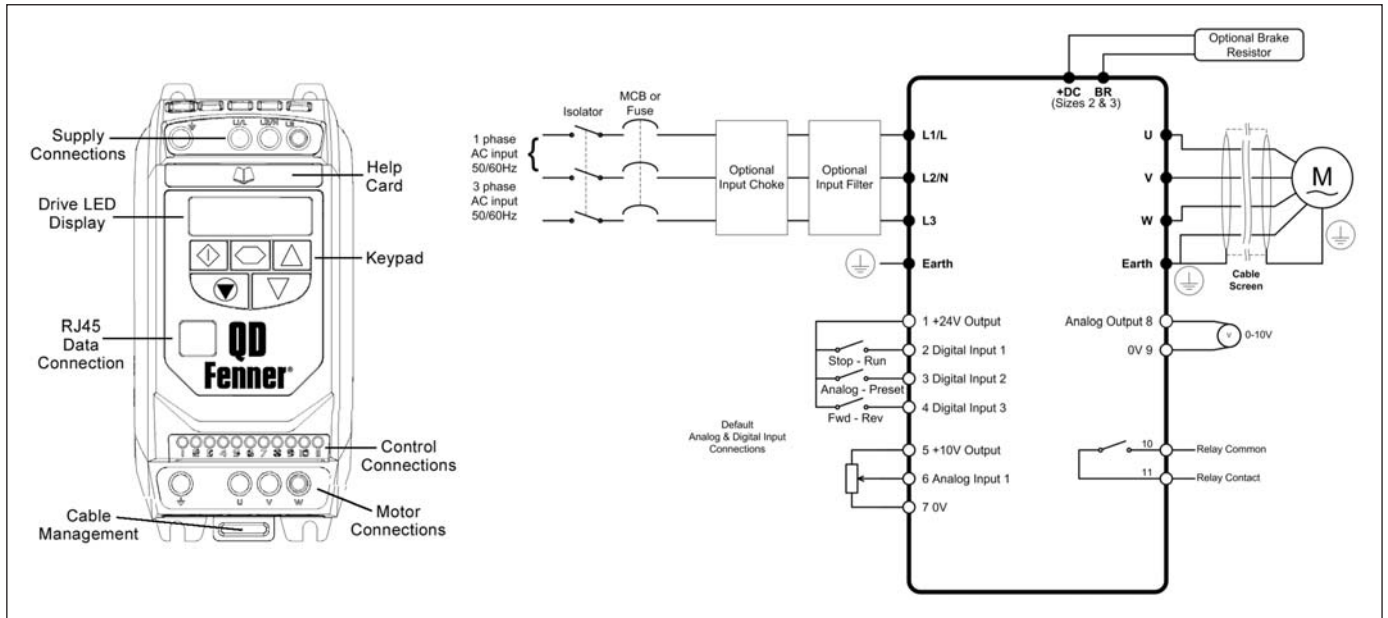
For drives mounted in free ventilated enclosures or force ventilated enclosures, the following minimum sizes and airflow requirements are recommended:

**QD:VT & QD:CT PLUS Mounting Clearances**

Frame Size	Max. Power Rating kW	Free-Vented Unit			Force-Vented Unit					Airflow m <sup>3</sup> /h
		L	W	D	G	L	W	D	G	
1	1.5	400	300	150	75	275	150	150	50	> 15
2	4	600	400	250	100	320	200	200	75	> 45
3	15	800	600	300	150	400	250	200	100	> 80
4	22	1000	600	300	200	800	500	250	130	> 300
4	37	-	-	-	-	800	500	250	130	> 300
5	90	-	-	-	-	1500	600	400	200	> 900
6	160	-	-	-	-	1600	600	400	250	> 1000

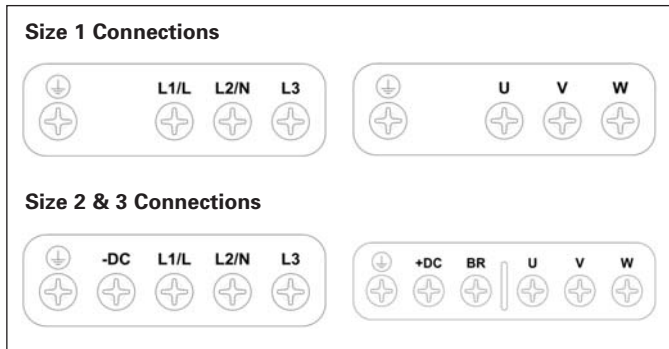


**FENNER QD:E CONNECTION**



Terminal	Torque Settings
Control	0.5 Nm
Power	1 Nm

**IP20 DRIVES**



**Drive and Motor Connections**

For 1 phase supply power should be connected to L1/L, L2/N.

For 3 phase supplies power should be connected to L1, L2, L3. Phase sequence is not important.

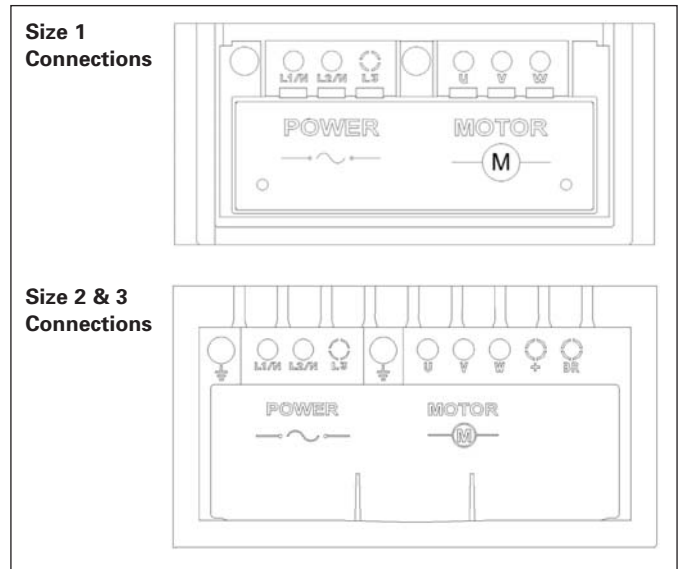
The motor should be connected to U, V, W.

For drives that have a dynamic brake transistor an optional external braking resistor will need be connected to +DC and BR. The brake resistor circuit should be protected by a suitable thermal protection circuit.

+DC and -DC connections can be used for DC Bus paralleling applications.

The -DC, +DC and BR connections are blanked off by plastic tabs when sent from the factory. The plastic tabs can be removed if/when required.

**QD:IP55 / NEMA 12 DRIVES**



Terminal	Torque Settings
Control	0.5 Nm
Power	1 Nm

**DC Supply Input**

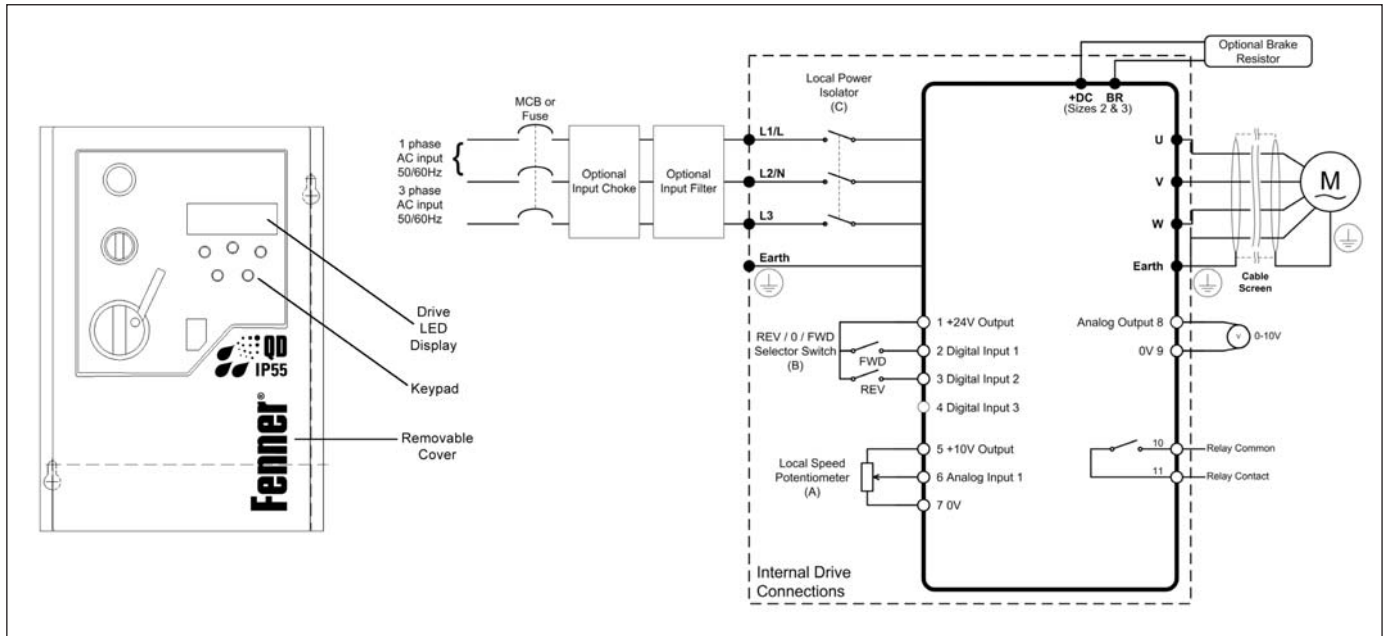
Operation on DC Voltage supply is possible by connecting to L1 and L2 on the drive input. Suitable fusing should be used. Any regenerative energy will not pass back onto the supply.

**Parallel DC BUS Operation**

On drive sizes 2 & 3 provision has been made for ±DC connections. This provides the ability to operate on parallel DC Bus systems where typically the motor/regenerative energy is transferred between the drives.

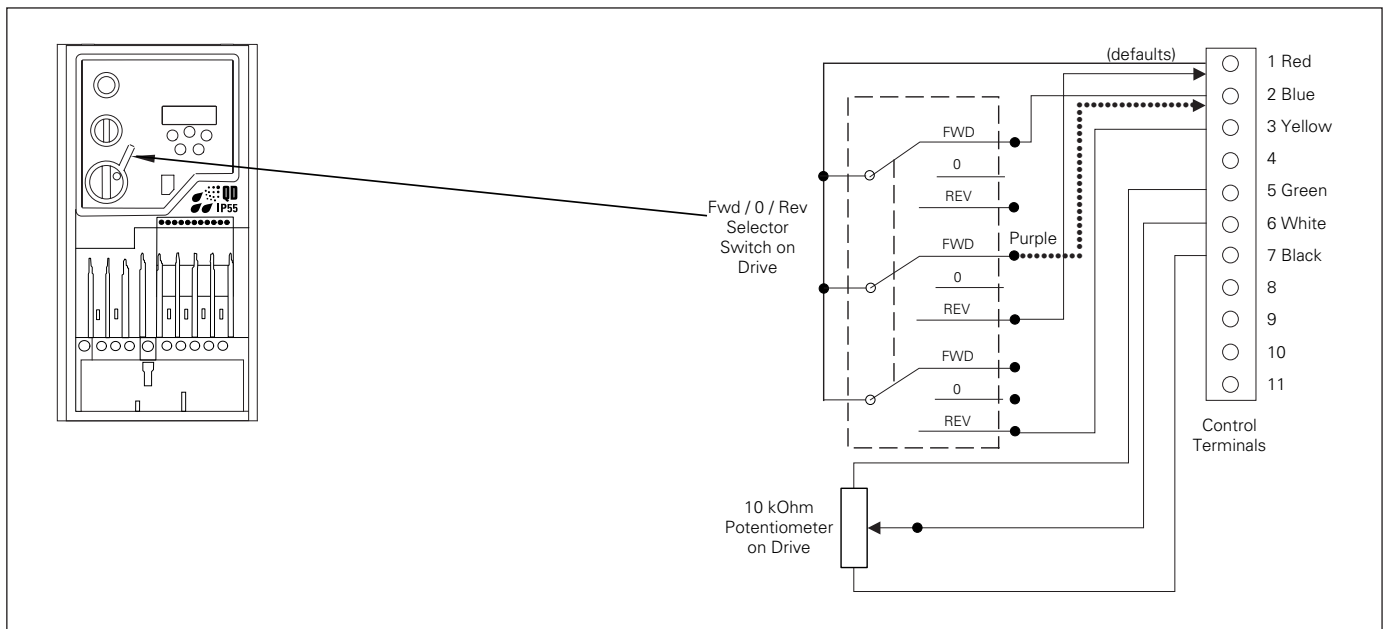
Note: Further information on all of the above can be found in the Advanced User Guide.

**FENNER QD:E IP55 SWITCHED CONNECTION DIAGRAM**



Note: For Safety reasons the REV (Run reverse) setting is disabled by default. To enable the REV (run reverse) setting change parameter P-15 to 5.

**FENNER QD:CT PLUS IP55 CONNECTION DIAGRAM**

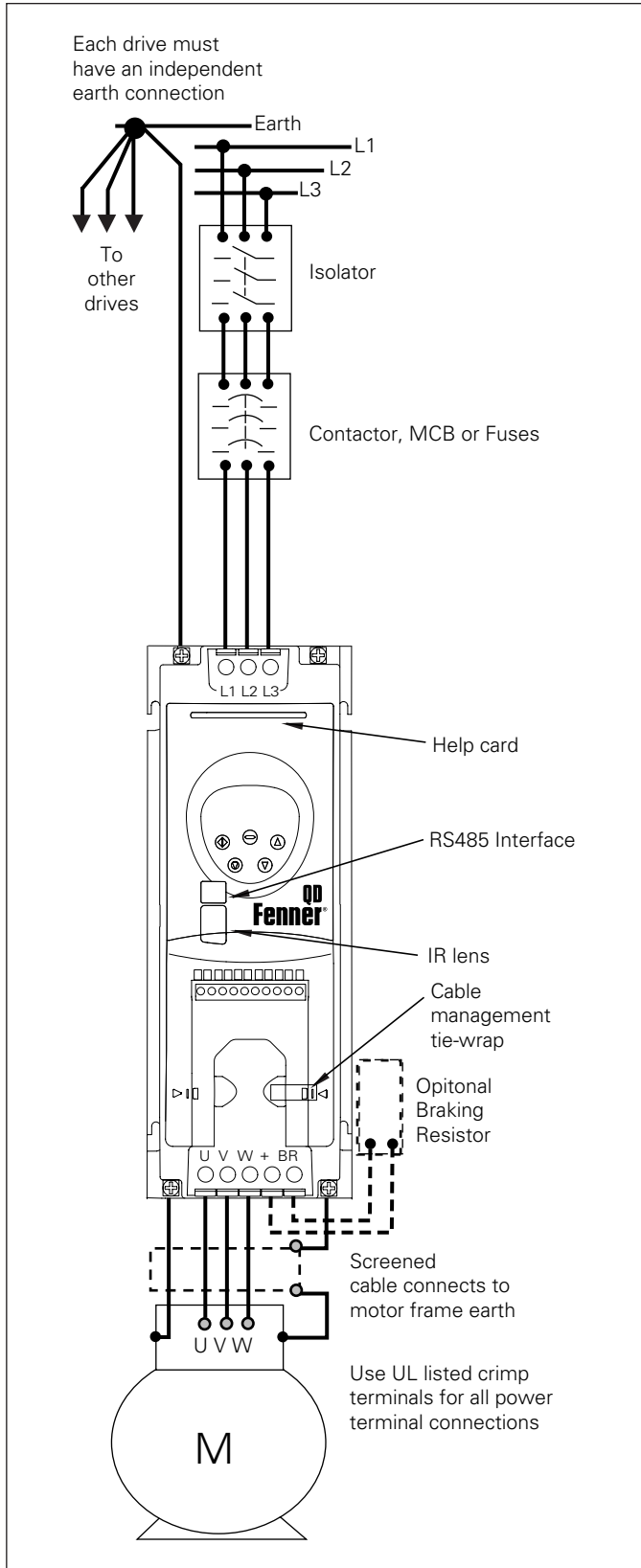


Note: Purple wire can be moved from terminal 1 (default) to terminal 2 to give greater functionality.



**FENNER QD:VT & QD:CT PLUS CONNECTION**

**Drive and Motor Connection (IP20)**



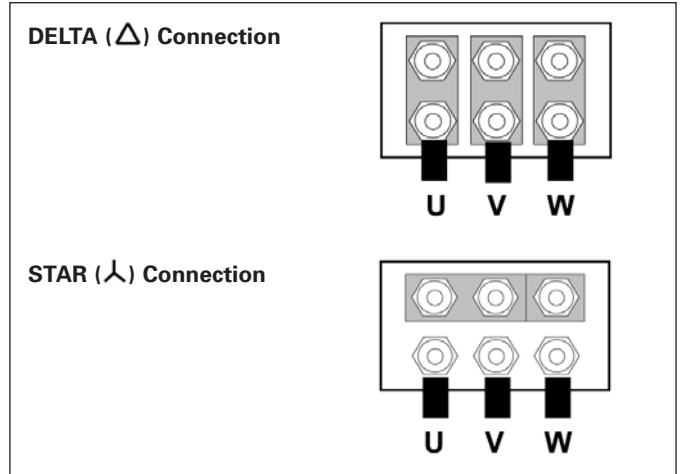
**Motor Terminal Box Connections**

Most general purpose motors are wound for operation on dual voltage supplies. This is indicated on the nameplate of the motor.

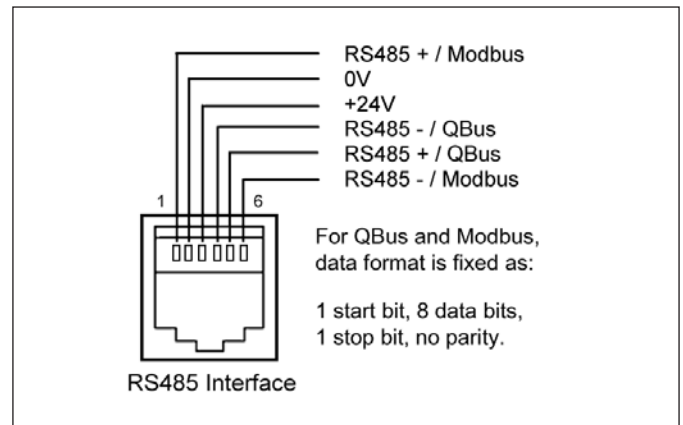
This operational voltage is normally selected when installing the motor by selecting either STAR or DELTA connection.

STAR always gives the higher of the two voltage ratings.

Typical ratings are: 400 / 230 (Δ/Δ)  
690 / 400 (Δ/Δ)



**RS485 Interface Configuration**



Terminal	Torque Settings
Control	0.5 Nm
Power	1 Nm

**CONTROL TERMINAL CONNECTIONS**

**Default Connections**

Control Terminal	Signal
1	+24V User Output
2	Digital Input 1
3	Digital Input 2
4	Digital Input 3 / Analog Input 2
5	+10V User Output
6	Analog Input 1 / Digital Input 4
7	0V
8	Analog Output / Digital Output
9	0V
10	Relay Common
11	Relay NO Contact

<b>Control Terminal 1</b>	<b>+24V User Output</b>
Current Limit	100mA

<b>Control Terminal 2 &amp; 3</b>	<b>Digital Inputs 1 &amp; 2</b>
Positive Logic	
Digital Voltage Range	8 to 30V
Sample Time	8 ms

<b>Control Terminal 4</b>	<b>Digital Input 3 or Analog Input 2</b>
Positive Logic	Digital Voltage Range 8 to 30V
Sample Time	8 ms
Analog Input Formats	As per Parameter P-47 Voltage: 0-10V Current: 4-20mA, 0-20mA, 20-4mA
Resolution	12-bit (0.025%)

<b>Control Terminal 5</b>	<b>+10V Output</b>
Current Limit	10mA
Minimum Resistance	1kΩ

<b>Control Terminal 6</b>	<b>Analog Input 1 or Digital Input 4</b>
Analog Input Formats	As per Parameter P-16 Voltage: 0-10V Current: 4-20mA, 0-20mA, 20-4mA
Resolution	12-bit (0.025%)
Positive Logic	-
Digital Voltage Range	8 to 30V
Sample Time	8 ms

<b>Control Terminal 7 &amp; 9</b>	<b>0V</b>
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<b>Control Terminal 8</b>	<b>Analog Output or Digital Output</b>
Analog Voltage Range	0 to 10V
Digital Voltage Range	0 to 24V
Max Output Current	20mA

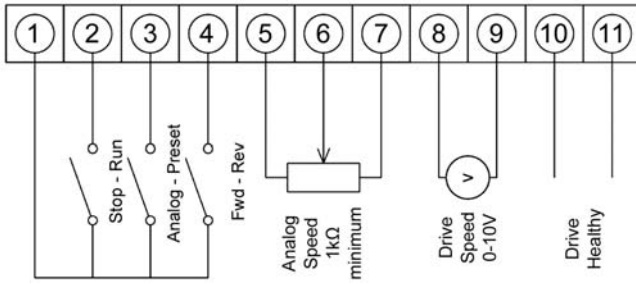
<b>Control Terminal 10 &amp; 11</b>	<b>User Relay Contacts</b>
Voltage Rating	250 Vac / 30Vdc
Current Rating	6A / 5A
Contact Isolation	2.5kV
Operation of Relay	OPEN: No AC Supply OR Function of P-18 disabled CLOSED: AC Supply present & Function of P-18 enabled





**CONTROL TERMINAL CONNECTIONS**

The control terminals are defined as follows:



Control Terminal	Signal
1	+24V, 100mA user output.
2	Digital input 1, positive logic. "Logic 1" when Vin > 8V DC
3	Digital input 2, positive logic. "Logic 1" when Vin > 8V DC 2nd digital output: 0 / 24V, 10mA max
4	2nd analog input, 11-bit (0.05%). 0..10V, 0..20mA, 4..20mA. Digital input 3, positive logic. "Logic 1" when Vin > 8V DC.
5	+24V, 100mA reference output (for use with potentiometer).
6	Bipolar analog input, +/-12-bit (0.025%). Configurable for: 0..24V, 0..10V, -10V..10V, -24V...24V
7	0V (User GND). Connected to terminal 9
8	Analog output, 8-bit (0.25%). 0..10V, 4..20mA. Digital output: 0 / 24V, 20mA max
9	0V (User GND). Connected to terminal 7
10	User relay output. Potential free contacts. 30Vdc 5A, 250Vac 6A
11	User relay output. Potential free contacts. 30Vdc 5A, 250Vac 6A

<b>Control Terminal 1</b>	<b>+24V User Output</b>
Current Limit	100mA

<b>Control Terminal 2</b>	<b>Digital Input 1</b>
Positive Logic	
Digital Voltage Range	8 to 30V
Sample Time	8 ms

<b>Control Terminal 3</b>	<b>Digital Input 1/"Drive Healthy Output" (Parameter Selectable)</b>
<b>Input Mode:</b>	
Positive Logic	
Digital Voltage Range	8 to 30V
Sample Time	8 ms
<b>Output Mode:</b>	
Voltage Range	24V DC
Current Limit	10mA

<b>Control Terminal 4</b>	<b>Digital Input 3 or Analog Input 2</b>
Positive Logic	
Digital Voltage Range	8 to 30V
Sample Time	8 ms
Analog Input Formats	Voltage: 0 to 10V Current: 0 to 20mA, 4 to 20mA
Resolution	11 bit (0.05%)

<b>Control Terminal 5</b>	<b>+10V Output</b>
Minimum Resistance	1kΩ

<b>Control Terminal 6</b>	<b>Bipolar Analog Input or Digital Input 4</b>
Analog Input Formats	0 to 24V, 0 to 10V, -24 to +24V, -10 to +10V
Resolution	+/- 12 bit (0.025%)
Positive Logic	
Digital Voltage Range	8 to 30V
Sample Time	8 ms

<b>Control Terminals 7 &amp; 9</b>	<b>0 Volts</b>
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<b>Control Terminal 8</b>	<b>Analog or Digital Output</b>
Analog Range	Voltage: 0 to 10V Current: 4 to 20mA
Digital Voltage Range	0 or 24V
Max Output Current	20mA

<b>Control Terminals 10 &amp; 11</b>	<b>User Relay Contacts</b>
Voltage Rating	250 VAC / 30 VDC
Current Rating	6A / 5A
Contact Isolation	2.5kV
Function	No or NC, Parameter Selectable

**Control Terminal Connections**

The User Control terminals are available via an 11-way pluggable connector. All terminals are galvanically isolated, allowing direct connection to other equipment.



Do not connect mains supply voltages to any terminals other than the User relay output. Permanent damage will otherwise result.

All other inputs will withstand up to 30V dc without damage.

The functionality of the inputs and outputs is user configurable. All operating modes are set up via the parameter set.

Up to 100mA can be sourced from the User +24V output and up to 20mA from the analog output.