Control Wire Types

Wire Type(s)	Description	Minimum Insulation Rating
Belden 8760/9460 (or equiv.)	0.8 mm ² (18AWG), twisted pair, 100% shield with drain.	300V 60 degrees C
Belden 8770 (or equiv.)	0.8 mm ² (18 AWG), 3 conductor, shielded for remote pot only.	(140 degrees F)

Table 1.G	Recommended C	Control and	Signal Wire ⁽¹⁾
-----------	---------------	-------------	----------------------------

(1) If the wires are short and contained within a cabinet which has no sensitive circuits, the use of shielded wire may not be necessary, but is always recommended.

I/O Terminal Block

Table 1.H I/O Terminal Block Specifications

Maximum Wire Size ⁽¹⁾	Minimum Wire Size ⁽¹⁾	Torque
1.3 mm ² (16 AWG)	0.13 mm ² (26 AWG)	0.5-0.8 N-m (4.4-7 lbin.)

(1) Maximum/minimum sizes that the terminal block will accept - these are not recommendations.

Maximum Control Wire Recommendations

Do not exceed control wiring length of 30 meters (100 feet). Control signal cable length is highly dependent on electrical environment and installation practices. To improve noise immunity, the I/O terminal block Common must be connected to ground terminal/protective earth. If using the RS485 (DSI) port, I/O Terminal 16 should also be connected to ground terminal/protective earth.

Figure 1.5 Control Wiring Block Diagram

alwa	nportant: I/O Termina ys a coast to stop inp	al 01 is P0 ut excent [Start S	36 iource]	Stop	I/O Terminal 0 Stop		
when P036 [Start Source] is set to			pad	Per P037	Coast	_	
"3-W	/ire" control. In three v	vire 3-W		Per P037	Per P037	_	
	rol, I/O Terminal 01 is			Per P037 Per P037	Coast Coast	_	
	037 [Stop Mode]. All o ces are controlled by		FUIL	Fel F03/	Güdsi	-	
	o Mode].	F037				Typic	al Typical
• •	•					Stop (1) Typic	ring SNK Wiring
	ortant: The drive is sh nper installed betweer		÷			Start/Run FWD (2)	
	ninals 01 and 11. Rem		۲ _۲	~	02	Direction/Run REV	
	er when using I/O Ter		_م_s	RC	03	Digital Common	7 ~ 7
as a	stop or enable input.		00			Digital Input 1	
(2) _T	wo wire control shown	. For three			05	Digital Input 2	
wire	control use a moment	tary input			+24V	0	
	on I/O Terminal 02	to			11	+24V DC	
	mand a start. Use a m t 600 for I/O Termin			i i	+ <u>10</u> V 12	+10V DC	\sim
	an direction				ci 13	0-10V In	→)
	•	Relay N.O. R1	L	:	14	Analog Common	
	_ Hela	y Common R2	[<u>اللا</u>	ci 15	4-20mA In	Potentiometer must be
	_	Relay N.C. R3 7	ŕĹ		16	RS485 Shield	1-10k ohm 2 Watt Min.
							2 Wett Will.
					01 02 03	04 05 06	
					1 02 03		
		R1 R2 R	3				
	30V DC 125V AC 240V		ਤ ਤੀ sn	k n i	11 12 1		
Resistiv)[[_	→IAI I	Μ̈́́́́́́́́́́́́́́́́́́́́́́́́́	ĎŴŴŴIJĹ	(DSI)
Inductiv	ve 0.5A 0.5A 0.5	A	SR	C (1)	Ŭ		8 1
No.	Olamal.						
	Signal	Default	Des	cription	-		Param.
R1	Relay N.O.	Default Fault			ontact for outp	ut relay.	Param. <u>A055</u>
R1 R2	-		Norr			out relay.	
	Relay N.O.		Norr Com	mally open co mon for outp		•	
R2 R3	Relay N.O. Relay Common	Fault	Norr Com Norr	nally open co mon for outp nally closed o ts can be wir	out relay. contact for ou	•	A055 A055
R2 R3	Relay N.O. Relay Common Relay N.C.	Fault - Fault	Norr Com Norr Inpu settin	nally open co imon for outp nally closed of ts can be wir ng. factory instal	out relay. contact for ou red as Sink (S	tput relay. NK) or Source (SRC) via I a normally closed input	A055 A055
R2 R3 Sink/s	Relay N.O. Relay Common Relay N.C. Source DIP Switch	Fault - Fault Source (SRC)	Norr Com Norr Inpu settin The musi	nally open co mon for outp nally closed o ts can be wir ng. factory instal t be present	out relay. contact for ou red as Sink (S lled jumper or for the drive to	tput relay. NK) or Source (SRC) via I a normally closed input o start.	A055 A055 DIP Switch
R2 R3 Sink/S 01 02	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD	Fault - Fault Source (SRC) Coast Not Active	Norr Com Norr Inpu settin The musi	nally open co amon for outp nally closed of ts can be wir ng. factory instal t be present	out relay. contact for ou red as Sink (S lled jumper or for the drive to s from the inte	tput relay. NK) or Source (SRC) via I a normally closed input o start. egral keypad by default. To	A055 A055 DIP Switch P036 ⁽¹⁾ P036, P037 P036, P037,
R2 R3 Sink/s	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾	Fault - Fault Source (SRC) Coast	Norr Com Norr Inpu setti The musi Com disal	mally open co mon for outp mally closed of ts can be wir ng. factory instal t be present mand comes ble reverse o	nut relay. contact for ou red as Sink (S lled jumper or for the drive to s from the inte peration, see	tput relay. NK) or Source (SRC) via I a normally closed input o start. gral keypad by default. To A095 [Reverse Disable].	A055 A055 DIP Switch P036 ⁽¹⁾ P036, P037 P036, P037, A095
R2 R3 Sink/3 01 02 03 04	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common	Fault - Fault Source (SRC) Coast Not Active Not Active -	Norr Com Norr Inpu settin The musi Com disal	nally open cc mon for outp mally closed ts can be wir ng. factory instal to present imand comes ble reverse o digital inputs. analog I/O.	ut relay. contact for ou red as Sink (S lled jumper or for the drive to s from the inte peration, see Electronically	tput relay. NK) or Source (SRC) via I a normally closed input o start. egral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs	A055 A055 DIP Switch P036, P037 P036, P037 A035
R2 R3 Sink/3 01 02 03 04 05	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq	Norr Com Norr Inpu settin The musi Com disal For c from Prog	nally open cc mon for outp mally closed ts can be wir ng. factory instal to be present imand comes ble reverse o digital inputs. analog I/O. rram with AOS	tred as Sink (S led jumper or for the drive tr s from the inte peration, see Electronically 51 [Digital In1	tput relay. NK) or Source (SRC) via I a normally closed input start. egral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs Sel].	A055 A055 DIP Switch P036, P037 P036, P037 A055 A051
R2 R3 Sink/3 01 02 03 04	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common	Fault - Fault Source (SRC) Coast Not Active Not Active -	Norr Com Norr Inpu settin The musi Com disal For of from Prog	nally open cc mon for outp mally closed ts can be wir ng. factory instal to present imand comes ble reverse o digital inputs. analog I/O. yram with AOS yram with AOS	but relay. contact for our red as Sink (S lled jumper or for the drive to s from the inte peration, see Electronically 51 [Digital In1 52 [Digital In2	tput relay. NK) or Source (SRC) via I a normally closed input start. egral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs Sel]. Sel].	A055 A055 DIP Switch P036, P037 P036, P037 A035
R2 R3 Sink/3 01 02 03 04 05	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq	Norrr Com Inpu setti Inpu setti The musi Com disal For co from Prog Prog Drive Maxi	nally open cc mon for outp nally closed of ts can be wir ng. factory instal to present imand comes ble reverse o digital inputs. analog I/O. gram with A00 gram with A00 g	but relay. contact for ou- red as Sink (S lled jumper or for the drive tr s from the intri- peration, see Electronically 51 [Digital In12 52 [Digital In25 Current is 100	tput relay. NK) or Source (SRC) via I a normally closed input o start. egral keypad by default. To A095 [Reverse Disable]. i isolated with digital inputs Sel]. Sel]. Sel]. inputs.)mA.	A055 A055 DIP Switch P036, P037 P036, P037 A055 A051
R2 R3 Sink/3 01 02 03 04 05 06	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1 Digital Input 2	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq	Norr Com Inpu setti The music Comdisal For of from Progg Prog Drive Maximum	nally open cc mmon for outp mally closed ts can be wir ng. factory instal to present imand comes ble reverse o digital inputs. analog I/O. gram with A00 gram with A00 gra	but relay. contact for ou- red as Sink (S led jumper on for the drive tr s from the inter peration, see Electronically 51 [Digital In1 52 [Digital In2 Sower for 0-100 current is 150	tput relay. NK) or Source (SRC) via I a normally closed input o start. gral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs Sel]. Sel]. linputs. mA. external potentiometer. nA.	A055 A055 DIP Switch P036, P037 P036, P037 A055 A051
R2 R3 Sink/3 01 02 03 04 05 06 11	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1 Digital Input 2 +24V DC	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq	Norrr Com Norrr Inpu settii settii settii settii Se	nally open cc mon for outp mally closed ts can be wir ng. factory instal to be present imand comes ble reverse o digital inputs. analog I/O. gram with AO: gram with AO: g	but relay. contact for ou- red as Sink (S lled jumper or for the drive tr s from the inte peration, see Electronically 51 [Digital In1 52 [Digital In2 Super for digital current is 100 power for 0-10\ to ref or 0-10	tput relay. NK) or Source (SRC) via I a normally closed input o start. gral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs Sel]. Sel]. linputs. mA. external potentiometer. nA.	A055 A055 DIP Switch P036, P037 P036, P037 A035 A051 A052
R2 R3 Sink/3 01 02 03 04 05 06 11 12	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1 Digital Input 2 +24V DC +10V DC	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq Preset Freq	Norr Com Inpusettii The mussettii The mussettii Com disal Prog Prog Prog Drive Maxix For (inpu	nally open cc mmon for outp mally closed ts can be wir ng. factory instal to be present imand comes ble reverse o digital inputs. analog I/O. yram with A03 ram rath A03 ram rath A03 ram rath A03 rath A03 rath a04 rath A03 rath A03 rath A03 rath a04 rath A03 rath A03 rath a04 rath A03 rath A03 rath A03 rath a04 rath A03 rath A	put relay. contact for ou- red as Sink (S lled jumper or for the drive tr s from the inte peration, see Electronically 51 [Digital In1 52 [Digital In2 current is 100 wer for 0;10,1 current is 15 V input suppl = 100k ohm -20mA In. Ele	tput relay. NK) or Source (SRC) via I a normally closed input o start. egral keypad by default. To A095 [Reverse Disable]. r isolated with digital inputs Sel]. Sel]. Sel]. Sel]. inputs.)mA. v external potentiometer. mA.	A055 A055 DIP Switch P036 ⁽¹⁾ P036, P037 P036, P037, A051 A051 A052 P038
R2 R3 Sink/3 01 02 03 04 05 06 11 12 13	Relay N.O. Relay Common Relay N.C. Source DIP Switch Stop ⁽¹⁾ Start/Run FWD Direction/Run REV Digital Common Digital Input 1 Digital Input 2 +24V DC +10V DC 0-10V In ⁽³⁾	Fault - Fault Source (SRC) Coast Not Active Not Active - Preset Freq Preset Freq	Norr Com Norr Inpu setti The musi Com disal For c (inpu Maxi Maxi For e (inpu For e for for for for for for for for for for for	nally open cc mmon for outp mally closed ts can be wir ng. factory instal to present i mand comes ble reverse o digital inputs. analog I/O. gram with A00 gram di and and supplied pc mum output e supplied pc imum output e supplied pc imum output e supplied pc imum output external 0-10 V In or 4 og inputs frou go inputs frou A00 (100 (100 (100 (100 (100 (100 (100 (put relay. contact for ou- red as Sink (S lled jumper or for the drive tr s from the inte peration, see Electronically 51 [Digital In1 52 [Digital In2 current is 100 wer for 0;10,1 current is 15 V input suppl = 100k ohm -20mA In. Ele	tput relay. NK) or Source (SRC) via I a normally closed input o start. gral keypad by default. To A095 [Reverse Disable]. risolated with digital inputs Sel]. Sel]. Sel]. inputs. mA. / external potentiometer. mA. / or potentiometer wiper. ctronically isolated with	A055 A055 DIP Switch P036 ⁽¹⁾ P036, P037 P036, P037, A051 A051 A052 P038
R2 R3 Sink/S 01 02 03 04 05 06 11 12 13 14	Relay N.O. Relay Common Relay Common Relay N.C. Source DIP Switch Start/Run FWD Direction/Run REV Digital Common Digital Input 1 Digital Input 2 +24V DC +10V DC 0-10V In ⁽³⁾ Analog Common	Fault - Fault Source (SRC) Coast Not Active Not Active Preset Freq Preset Freq - Not Active - Not Active -	Norrr Com Norrr Inpu settii settii settii Settii Com disal For of from Prog Prog Prog Prog Drive Maxi Maxi For of (inpu For of (inpu Terr Terr Terr Terr Com Com disal	nally open cc imon for outp nally closed of ts can be wirng. factory instal t be present imand comes ble reverse o digital inputs. analog I/O. irram with A0: rram with A0: rr	put relay. contact for ou- red as Sink (S lled jumper or for the drive tr s from the intri- peration, see Electronically 51 [Digital Int1 52 [Digital Int2 Super for digita current is 100 wer for 0-100 current is 151 W input supple = 250 ohm). be connected	tput relay. NK) or Source (SRC) via I a normally closed input o start. gral keypad by default. To A095 [Reverse Disable]. risolated with digital inputs Sel]. Sel]. Sel]. inputs. mA. / external potentiometer. mA. / or potentiometer wiper. ctronically isolated with	A055 A055 DIP Switch P036 (1) P036, P037 P036, P037, A035 A051 A052 P038 P038

(3)

Only one analog frequency source may be connected at a time. If more than one reference is connected at the same time, an undetermined frequency reference will result.