



Allen-Bradley

160 SSC™ Variable Speed Drive (Series C)

Publication 160-CDP

Configured Drive Package

**Rockwell
Automation**

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

Important: Identifies information that is critical for successful application and understanding of the product.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you:

- identify a hazard
 - avoid the hazard
 - recognize the consequences
-



Shock Hazard labels may be located on or inside the equipment (e.g., drive or motor) to alert people that dangerous voltage may be present.



Burn Hazard labels may be located on or inside the equipment (e.g., drive or motor) to alert people that surfaces may be at dangerous temperatures.

SCANport is a trademark of Rockwell Automation.

PLC is a registered trademark of Rockwell Automation.

COLOR-KEYED is a registered trademark of Thomas & Betts Corporation.

IBM is a registered trademark of International Business Machines Corporation.

Windows 95 is a registered trademark of Microsoft Corporation.

Bulletin 160 SSC™ Variable Speed Controller Configured Drives Package

Thank you for purchasing a Bulletin 160 Configured Drive. This Rockwell Automation product is designed with the customer in mind, saving time and money by configuring a drive package at the factory to meet your application needs.

This publication contains all drawings for the Bulletin 160 Configured Drive product offering. To select the appropriate schematics for the Configured Drive you have purchased, obtain the complete catalog string from the unit's data nameplate. Note the options specified in the catalog string and refer to the page number that corresponds with each option.

Compliance Certification (applicable to approved program defined options)

U.S./Canada	UL:	UL508C
	CUL:	CULN/CSA-C22.2 No. 14-M91
Europe	CE:	Low Voltage Directive – EN60204-1, EN50178 EMC Directive – EN61800-3, EN500082-2, EN50081-2
Australia	C-Tick:	AS/NZS 2064.1

CE Compliance

CE Marking of this product is based upon compliance with the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC. The following standards have been used to demonstrate compliance with the directives:

Low Voltage Directive	EN60204-1 EN50178
EMC Directive	EN61800-3 EN50081-2 EN50082-2

Important: This product complies with the EMC requirements of EN61800-3 and other referenced EMC standards as a stand-alone unit. It is the responsibility of the machine builder applying this product in machinery to ensure EMC compliance of the entire installation. Refer to the Bulletin 0160 User Manual for additional information.

A copy of the Declaration of Conformity (DoC) is available from your local Rockwell Automation Sales Office.

Table of Contents

Data Nameplate Drawing5
(Use for all catalog numbers.)

Standard Control Interface for
Analog Signal Follower and Preset Speed Drives6
(Use when drive catalog number does not include control interface options
DMSF1C, DMPS1C, or LTN120.)

Twenty-Four Volt DC (24VDC) Control Interface for
Analog Signal Follower and Preset Speed Drives27
(Use when drive catalog number includes control interface options DMSF1C or
DMPS1C.)

One Hundred Twenty Volt AC (120VAC) Control Interface for
Analog Signal Follower and Preset Speed Drives47
(Use when drive catalog number includes drive option SF1 and
control interface option LTN120.)

Material List for Spare Parts66

Data Nameplate Drawing

HGFEDCBA

329310

SINGLE PHASE DATA NAMEPLATE

326507

THREE PHASE DATA NAMEPLATE

TABLE 1
SINGLE PHASE
DRIVE RATINGS

CATALOG NO.	H.P.	INPUT KVA	INPUT VOLTS	INPUT AMPS	OUTPUT KVA	OUTPUT VOLTS	OUTPUT AMPS	VOLTS MAXIMUM
160S-AA02*	.5	1.1	230	4.8	0.5	230	2.3	230
160S-AA03*	.75	1.4	230	6.2	0.7	230	3.0	230
160S-AA04*	1	2.2	230	9.4	1.0	230	4.5	230
160S-AA08*	2	3.7	230	16.3	1.8	230	8.0	230

TABLE 2
THREE PHASE
DRIVE RATINGS

CATALOG NO.	H.P.	INPUT KVA	INPUT VOLTS	INPUT AMPS	OUTPUT KVA	OUTPUT VOLTS	OUTPUT AMPS	VOLTS MAXIMUM
160-AA02*	.5	1.1	230	2.8	1.0	230	2.3	230
160-AA03*	.75	1.4	230	3.6	1.2	230	3.0	230
160-AA04*	1	2.2	230	5.4	1.9	230	4.5	230
160-AA08*	2	3.7	230	9.4	3.3	230	8.0	230
160-AA12*	3	5.7	230	14.2	5.0	230	12.0	230
160-AA18*	5	8.4	230	21.1	7.2	230	18.0	230
160-BA01*	.5	1.1	460	1.4	1.0	460	1.2	460
160-BA02*	.75	1.6	460	2.0	1.3	460	1.7	460
160-BA03*	1	2.2	460	2.8	1.8	460	2.3	460
160-BA04*	2	3.7	460	4.6	3.2	460	4.0	460
160-BA06*	3	5.6	460	7.0	4.8	460	6.0	460
160-BA10*	5	9.7	460	12.2	8.4	460	10.5	460

* - CATALOG SUFFIX MUST CONTAIN "SF1" OR "PS1".

NOTES:

- 1.) CE AND C-TICK LABELS CAN NOT BE USED WITH OPTION LTN120.
- 2.) ASSIGN CATALOG NUMBER PER THE ITEM DESCRIPTION.
- 3.) TO ASSIGN SERIAL NUMBER USE PARENT ITEM NUMBER FOLLOWED BY A (-1), (-2), ETC. DEPENDING ON QUANTITY OF ORDER ITEM.
- 4.) ENCLOSURE TYPE IS DICTATED BY 2 DIGITS OF THE DRIVE CATALOG NUMBER.
a.) "AF" = TYPE 4
b.) "AS" = TYPE 4X
- 5.) KVA AND CURRENT RATINGS ARE BASED ON A NOMINAL VOLTAGE OF 230V AND 460V RESPECTIVELY.

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REV	DATE	BY	ECN NUMBER
02	12-17-99	AKS	99R0962
04	02-18-00	AKS	00P0044
06	06-19-06	AKS	1022318

REV	DATE	BY	ECN NUMBER
02	12-17-99	AKS	99R0962
04	02-18-00	AKS	00P0044
06	06-19-06	AKS	1022318

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REV	DATE	BY	ECN NUMBER
02	12-17-99	AKS	99R0962
04	02-18-00	AKS	00P0044
06	06-19-06	AKS	1022318

LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

Allen-Bradley
Rockwell Automation

TITLE: DATA NAMEPLATE DRAWING
BULL 160 CONFIGURED SERIES C

PART NO: C-300316-12

REV: 1 END

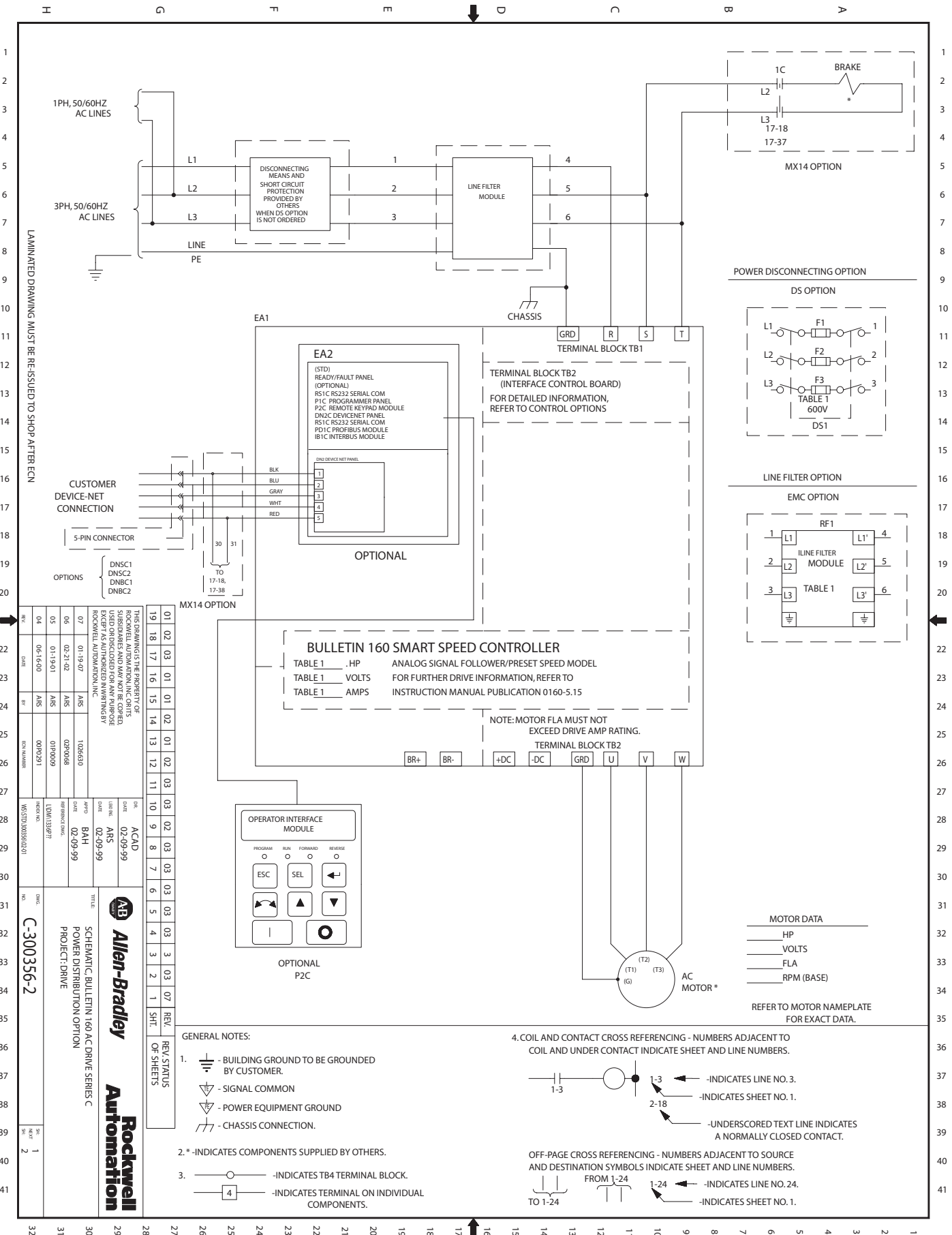
Standard Control Interface (Drawing C-300356-2)

Power Distribution and DS Option	7
Operator Interface Options DN2C, RS1C, P1C, RPAC, P2C, and Ready/Fault Panel	7
Enclosure Mounted DeviceNet Connector Options: DNSC1, DNSC2, DNBC1, DNBC2	7
Drive Ratings and DS Option Ratings	8

Product Control Logic Options

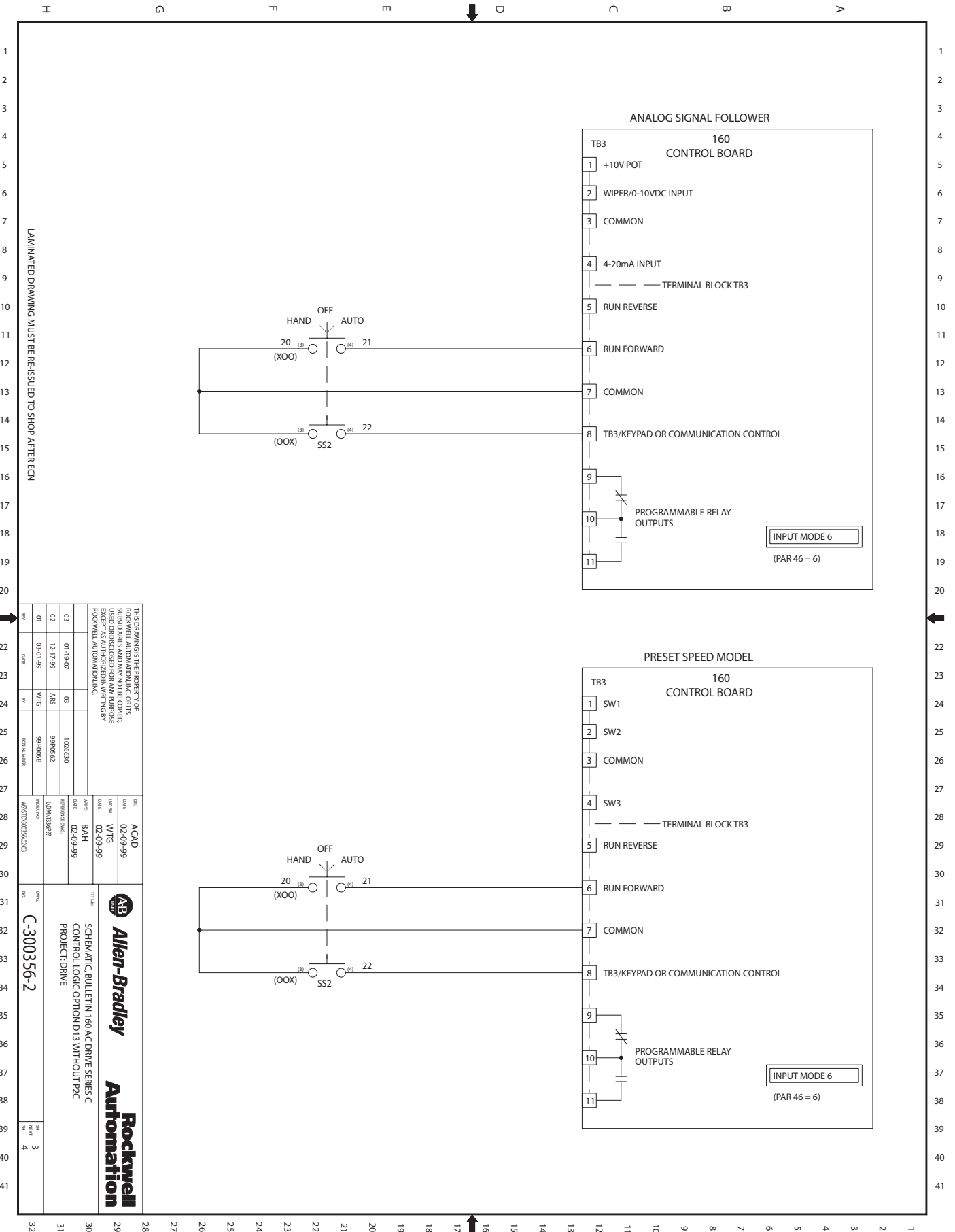
D13 Without P2C	9
D13 With P2C	10
D17	11
D32	12
D33	13
D13 and D32 Without P2C	14
D13 and D32 With P2C	15
D17 and D32	16
D32 and D33	17
D35 and D36 Without Keypad or Comm Control Options	18
D35 and D36 With Keypad or Comm Control Options	19
D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options . . .	20
D61 for Analog Signal Follower Drives With Keypad or Comm Control Options	21
MX12	22
MX14	7 and 23
P2C	24
MX19	25

Power Distribution and DS Option



01	02	03	01	01	02	01	02	03	03	03	03	03	03	03	07	REV	REV/STATUS
19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
04	06-16-00	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS
REV	DATE	BY	CHK	APP'D	DATE	REV	DATE	REV	DATE	REV	DATE	REV	DATE	REV	DATE	REV	DATE
01	02-09-99	ARS	ARS	ARS	02-09-99	01	02-09-99	02	02-09-99	03	02-09-99	04	02-09-99	05	02-09-99	06	02-09-99
02	01-19-07	ARS	ARS	ARS	10/26/03	07	02-21-02	08	01-11-01	09	01-11-01	10	01-11-01	11	01-11-01	12	01-11-01
03	02-21-02	ANS	ANS	ANS	02/06/08	13	01-19-07	14	06-16-00	15	06-16-00	16	06-16-00	17	06-16-00	18	06-16-00
04	06-16-00	ANS	ANS	ANS	01/02/01	19	06-16-00	20	06-16-00	21	06-16-00	22	06-16-00	23	06-16-00	24	06-16-00
05	01-11-01	ANS	ANS	ANS	01/02/01	25	01-11-01	26	01-11-01	27	01-11-01	28	01-11-01	29	01-11-01	30	01-11-01
06	02-21-02	ANS	ANS	ANS	02/06/08	31	02-21-02	32	02-21-02	33	02-21-02	34	02-21-02	35	02-21-02	36	02-21-02
07	01-19-07	ARS	ARS	ARS	10/26/03	37	01-19-07	38	01-19-07	39	01-19-07	40	01-19-07	41	01-19-07	42	01-19-07
08	06-16-00	ANS	ANS	ANS	01/02/01	43	06-16-00	44	06-16-00	45	06-16-00	46	06-16-00	47	06-16-00	48	06-16-00
09	01-11-01	ANS	ANS	ANS	01/02/01	49	01-11-01	50	01-11-01	51	01-11-01	52	01-11-01	53	01-11-01	54	01-11-01
10	02-21-02	ANS	ANS	ANS	02/06/08	55	02-21-02	56	02-21-02	57	02-21-02	58	02-21-02	59	02-21-02	60	02-21-02
11	01-19-07	ARS	ARS	ARS	10/26/03	61	01-19-07	62	01-19-07	63	01-19-07	64	01-19-07	65	01-19-07	66	01-19-07
12	06-16-00	ANS	ANS	ANS	01/02/01	67	06-16-00	68	06-16-00	69	06-16-00	70	06-16-00	71	06-16-00	72	06-16-00
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14	02-21-02	ANS	ANS	ANS	02/06/08	79	02-21-02	80	02-21-02	81	02-21-02	82	02-21-02	83	02-21-02	84	02-21-02
15	01-19-07	ARS	ARS	ARS	10/26/03	85	01-19-07	86	01-19-07	87	01-19-07	88	01-19-07	89	01-19-07	90	01-19-07
16	06-16-00	ANS	ANS	ANS	01/02/01	91	06-16-00	92	06-16-00	93	06-16-00	94	06-16-00	95	06-16-00	96	06-16-00
17	01-11-01	ANS	ANS	ANS	01/02/01	97	01-11-01	98	01-11-01	99	01-11-01	100	01-11-01	101	01-11-01	102	01-11-01
18	02-21-02	ANS	ANS	ANS	02/06/08	103	02-21-02	104	02-21-02	105	02-21-02	106	02-21-02	107	02-21-02	108	02-21-02
19	01-19-07	ARS	ARS	ARS	10/26/03	109	01-19-07	110	01-19-07	111	01-19-07	112	01-19-07	113	01-19-07	114	01-19-07
20	06-16-00	ANS	ANS	ANS	01/02/01	115	06-16-00	116	06-16-00	117	06-16-00	118	06-16-00	119	06-16-00	120	06-16-00
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22	02-21-02	ANS	ANS	ANS	02/06/08	127	02-21-02	128	02-21-02	129	02-21-02	130	02-21-02	131	02-21-02	132	02-21-02
23	01-19-07	ARS	ARS	ARS	10/26/03	133	01-19-07	134	01-19-07	135	01-19-07	136	01-19-07	137	01-19-07	138	01-19-07
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26	02-21-02	ANS	ANS	ANS	02/06/08	151	02-21-02	152	02-21-02	153	02-21-02	154	02-21-02	155	02-21-02	156	02-21-02
27	01-19-07	ARS	ARS	ARS	10/26/03	157	01-19-07	158	01-19-07	159	01-19-07	160	01-19-07	161	01-19-07	162	01-19-07
28	06-16-00	ANS	ANS	ANS	01/02/01	163	06-16-00	164	06-16-00	165	06-16-00	166	06-16-00	167	06-16-00	168	06-16-00
29	01-11-01	ANS	ANS	ANS	01/02/01	169	01-11-01	170	01-11-01	171	01-11-01	172	01-11-01	173	01-11-01	174	01-11-01
30	02-21-02	ANS	ANS	ANS	02/06/08	175	02-21-02	176	02-21-02	177	02-21-02	178	02-21-02	179	02-21-02	180	02-21-02
31	01-19-07	ARS	ARS	ARS	10/26/03	181	01-19-07	182	01-19-07	183	01-19-07	184	01-19-07	185	01-19-07	186	01-19-07
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52	06-16-00	ANS	ANS	ANS	01/02/01	307	06-16-00	308	06-16-00	309	06-16-00	310	06-16-00	311	06-16-00	312	06-16-00
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58	02-21-02	ANS	ANS	ANS	02/06/08	343	02-21-02	344	02-21-02	345	02-21-02	346	02-21-02	347	02-21-02	348	02-21-02
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60	06-16-00	ANS	ANS	ANS	01/02/01	355	06-16-00	356	06-16-00	357	06-16-00	358	06-16-00	359	06-16-00	360	06-16-00
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62	02-21-02	ANS	ANS	ANS	02/06/08	367	02-21-02	368	02-21-02	369	02-21-02	370	02-21-02	371	02-21-02	372	02-21-02
63	01-19-07	ARS	ARS	ARS	10/26/03	373	01-19-07	374</									

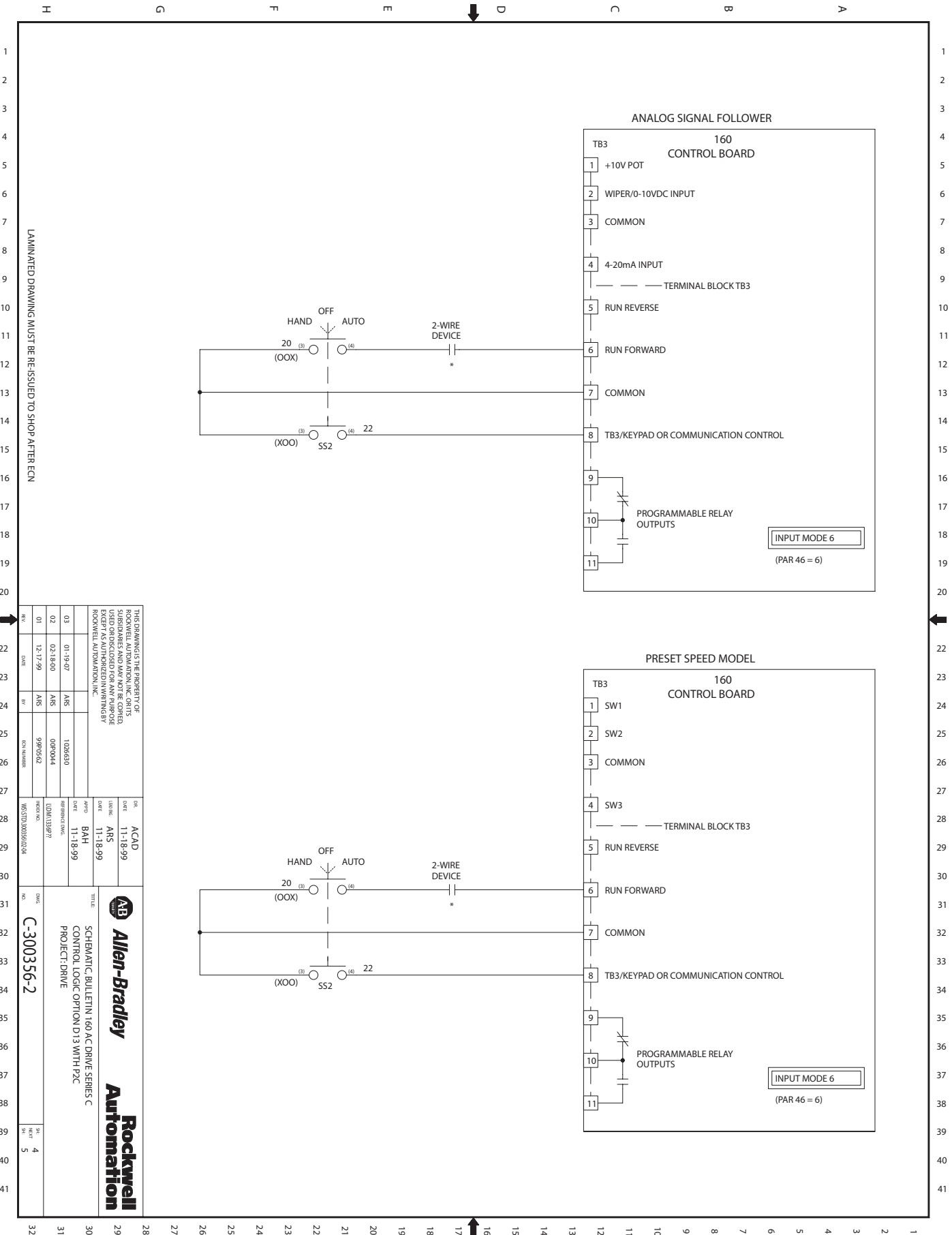
D13 Without P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

THIS DRAWING IS THE PROPERTY OF ROCKWELL AUTOMATION, INC. DRITS SUBSIDIARIES AND MAY NOT BE COPIED, USED OR DISCLOSED FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF ROCKWELL AUTOMATION, INC.		DATE: 02-09-99 USER: WTC APPR: BAH DATE: 02-09-99 REFERENCE: U2M1328P1	TITLE: Allen-Bradley Rockwell Automation SCHEMATIC, BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 WITHOUT P2C PROJECT: DRIVE
REV:	DATE:	BY:	ECN NUMBER:
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04	02-09-99	Q3	10266301
05	02-09-99	WTC	10266301
06	02-09-99	WTC	10266301
07	02-09-99	WTC	10266301
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27	02-09-99	WTC	10266301
28	02-09-99	WTC	10266301
29	02-09-99	WTC	10266301
30	02-09-99	WTC	10266301
31	02-09-99	WTC	10266301
32	02-09-99	WTC	10266301

D13 With P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV.	DATE	BY	ECN NUMBER	DESCRIPTION
01	12-17-99	ANS	99P0062	
02	02-18-00	ANS	00P0044	
03	01-19-07	ANS	1020630	

DATE	BY	DESCRIPTION
11-1-8-99	ARS	ACAD
11-1-8-99	ARS	REVISE
11-1-8-99	BAH	REVISE

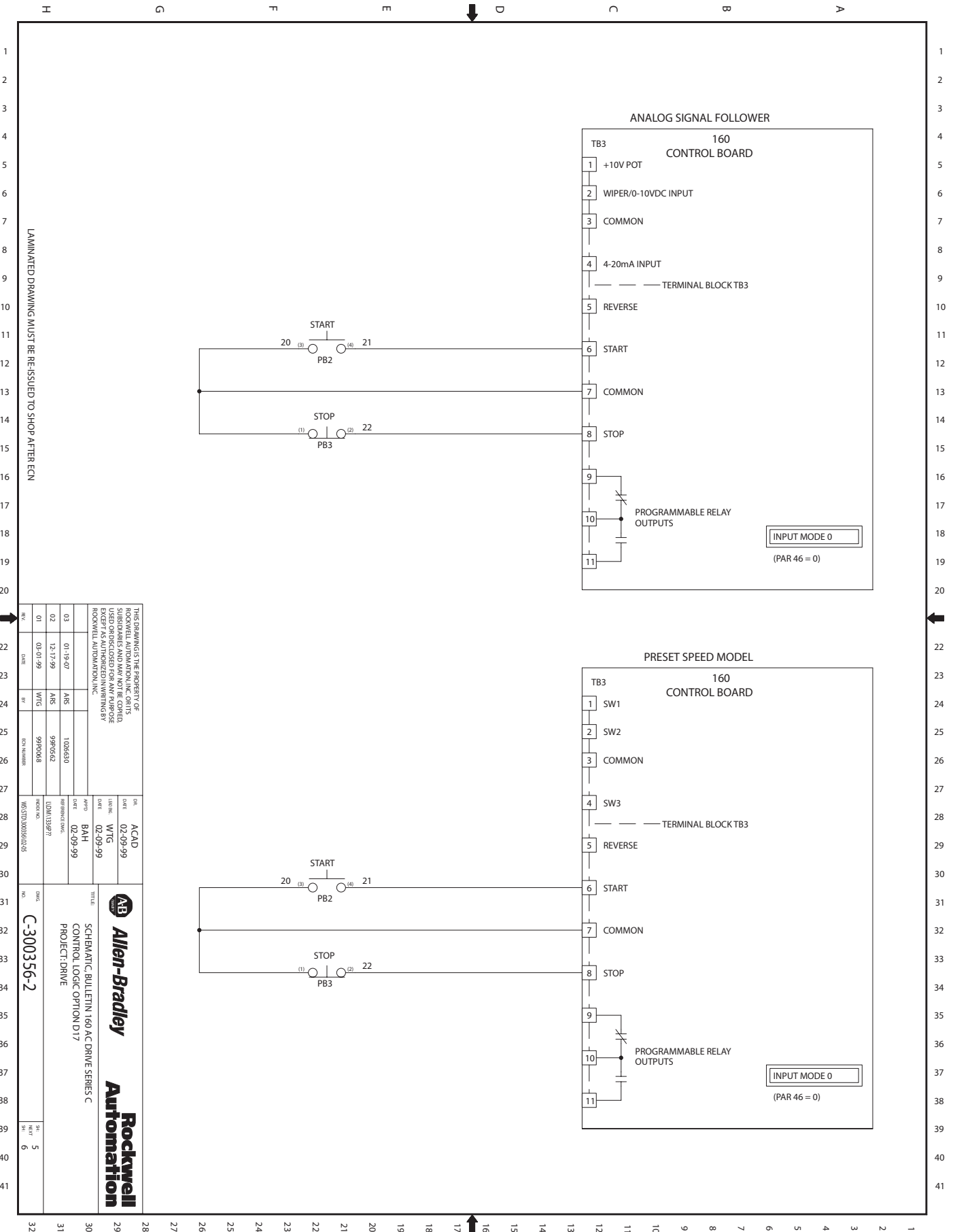
Allen-Bradley **Rockwell Automation**

TITLE: SCHEMATIC, BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 WITH P2C PROJECT: DRIVE

DATE: C-300356-2

REV: 4

REV: 5



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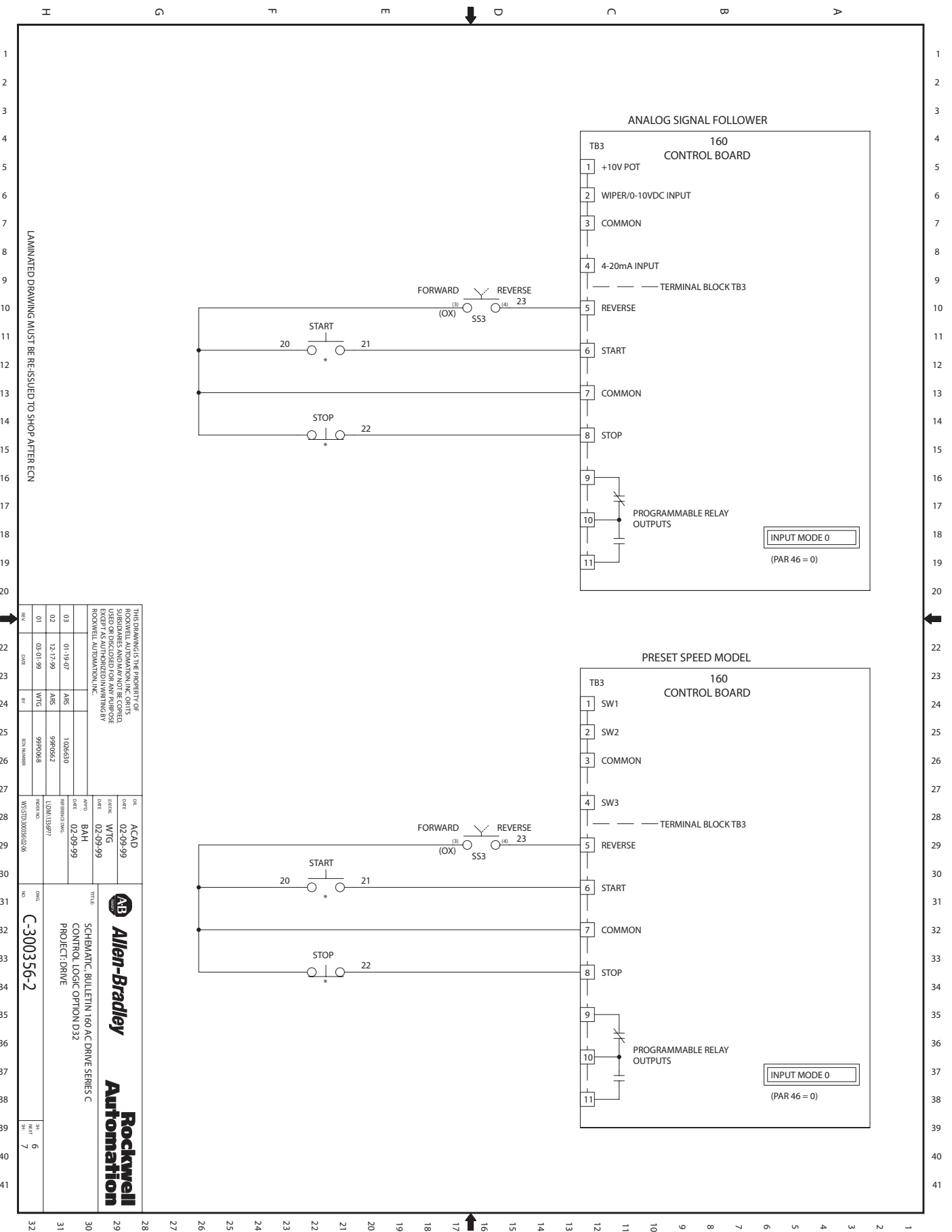
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01	03-01-99	WTC	99090368	
02	12-17-99	ANS	99090662	
03	01-19-07	ANS	10206303	

DATE	BY	DESCRIPTION
02-09-99	WTC	ACAD
02-09-99	WTC	WTC
02-09-99	BAH	REFINEMENT Dwg
02-09-99	BAH	ISSUE 12/28/97

TITLE	DATE	REV.
SCHWARTZ BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D17 PROJECT DRIVE	02-09-99	5
		6

Allen-Bradley
Rockwell Automation

C-300356-2



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	APP'D	DESCRIPTION
01	03-01-99	WFG	99R0406		WVS5TD300356-02/03
02	12-17-99	ANS	99R0662		
03	01-19-07	ANS	1026330		

REV	DATE	BY	APP'D	DESCRIPTION
01	02-09-99	WFG		ACAD
02	02-09-99	WFG		WVG
03	02-09-99	BAH		UEN1328271

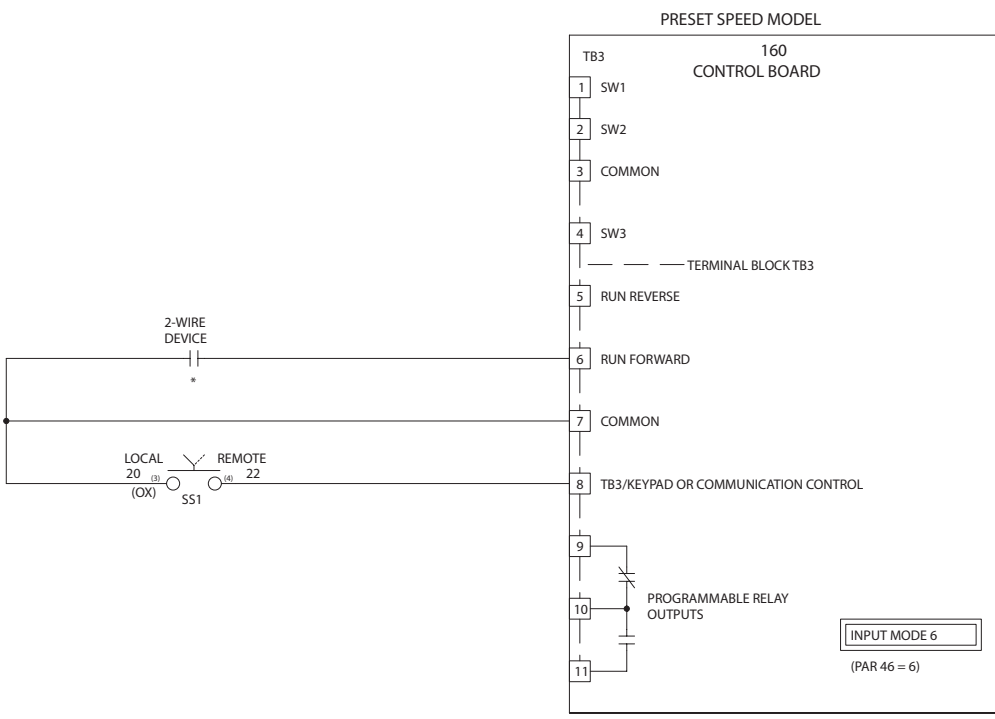
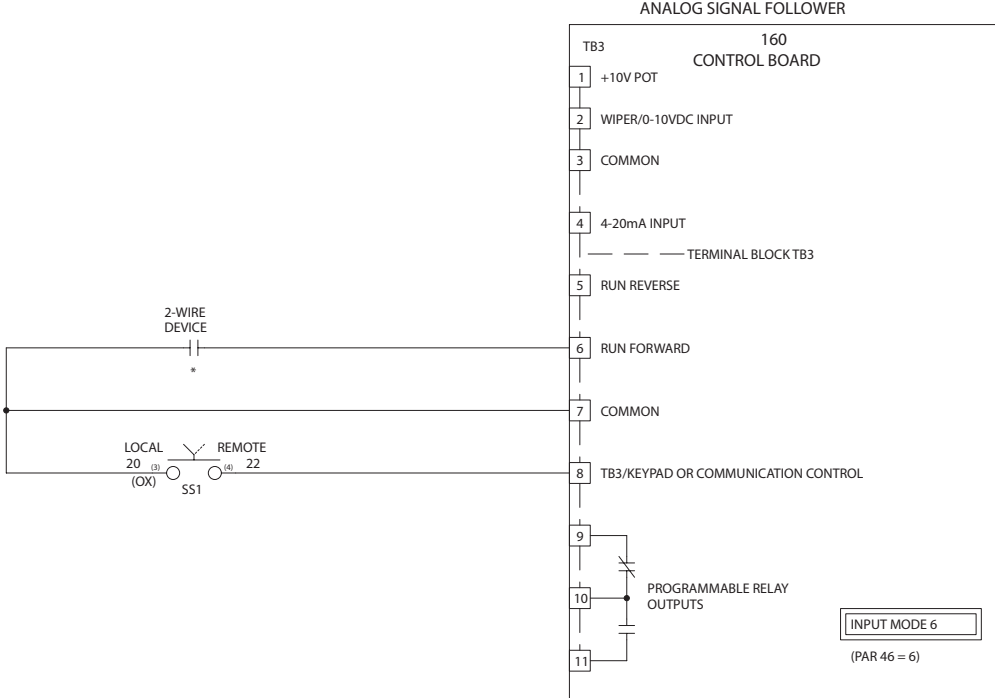
 Allen-Bradley		 Rockwell Automation	
TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D32 PROJECT DRIVE			
NO.	DATE	REV.	REV.
C-300356-2		6	7

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H G F E D C B A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN



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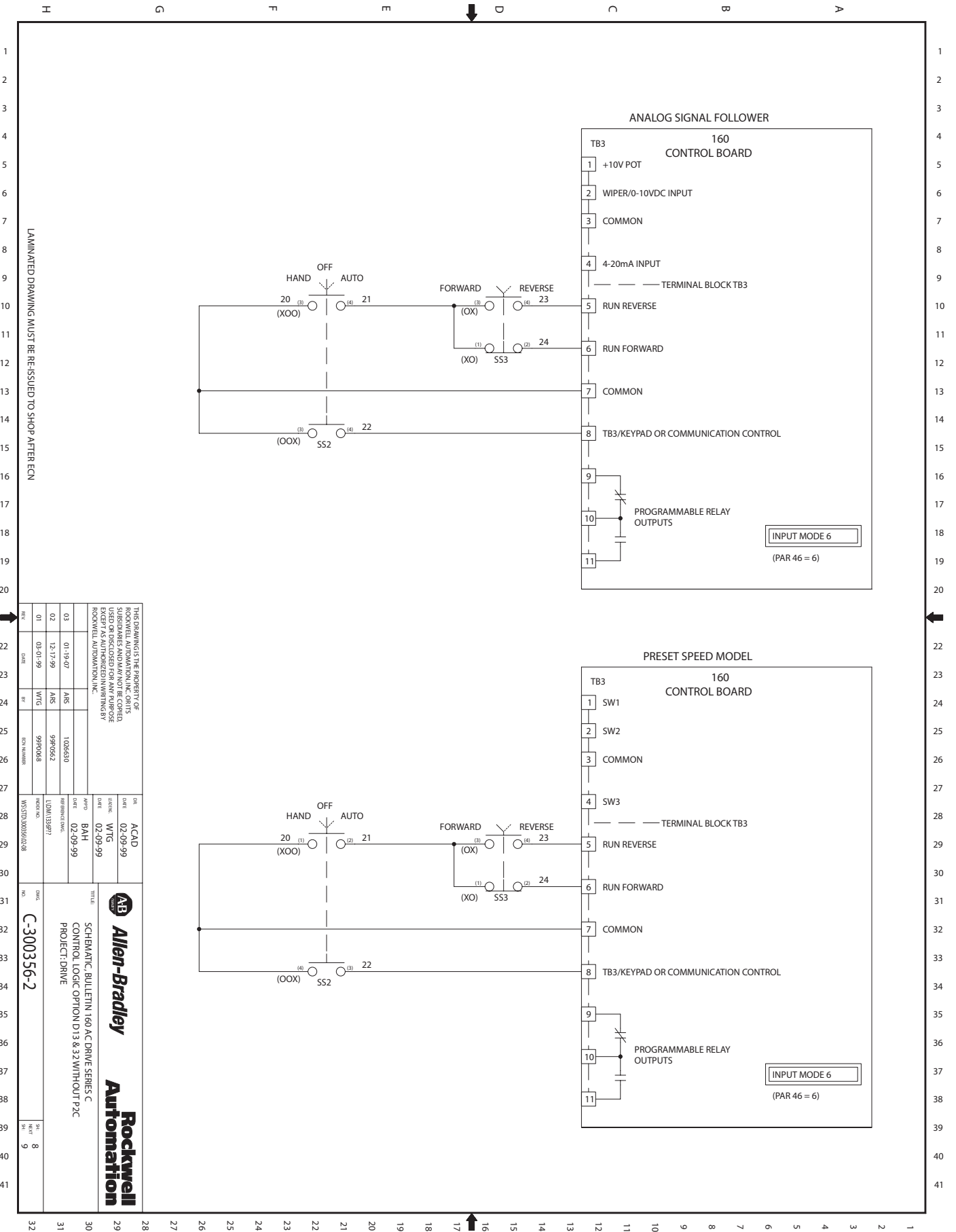
REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	03-01-99	WJG	99P0068	
02	12-17-99	ANS	99P0062	
03	01-19-07	ANS	1026530	

DATE	BY	DESCRIPTION
02-09-99	WJG	ACAD
02-09-99	WJG	WTC
02-09-99	BAH	BAH
02-09-99	WJG	WTC

Rockwell Automation
Allen-Bradley
Schematic Bulletin 160 AC Drive Series C
Control Logic Option D33
Project Drive
C-300356-2

REV	DATE	BY
7		
8		

D13 and D32 Without P2C



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REV	DATE	BY	FOR NUMBER	REV	DATE	BY	FOR NUMBER
01	03-01-99	WFG	99P0068	01	01-19-07	ANS	1026530
02	12-17-99	ANS	99P0062	02	12-17-99	ANS	99P0062
03	01-19-07	ANS	1026530	03	01-19-07	ANS	1026530

REV	DATE	BY	FOR NUMBER	REV	DATE	BY	FOR NUMBER
01	02-09-99	WFG	99P0068	01	02-09-99	WFG	99P0068
02	02-09-99	WFG	99P0062	02	02-09-99	WFG	99P0062
03	01-19-07	ANS	1026530	03	01-19-07	ANS	1026530

REV	DATE	BY	FOR NUMBER	REV	DATE	BY	FOR NUMBER
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02	02-09-99	WFG	99P0062	02	02-09-99	WFG	99P0062
03	01-19-07	ANS	1026530	03	01-19-07	ANS	1026530

Allen-Bradley
Rockwell Automation

ACAD
 DATE: 02-09-99
 LDATE: WFG
 DATE: 02-09-99

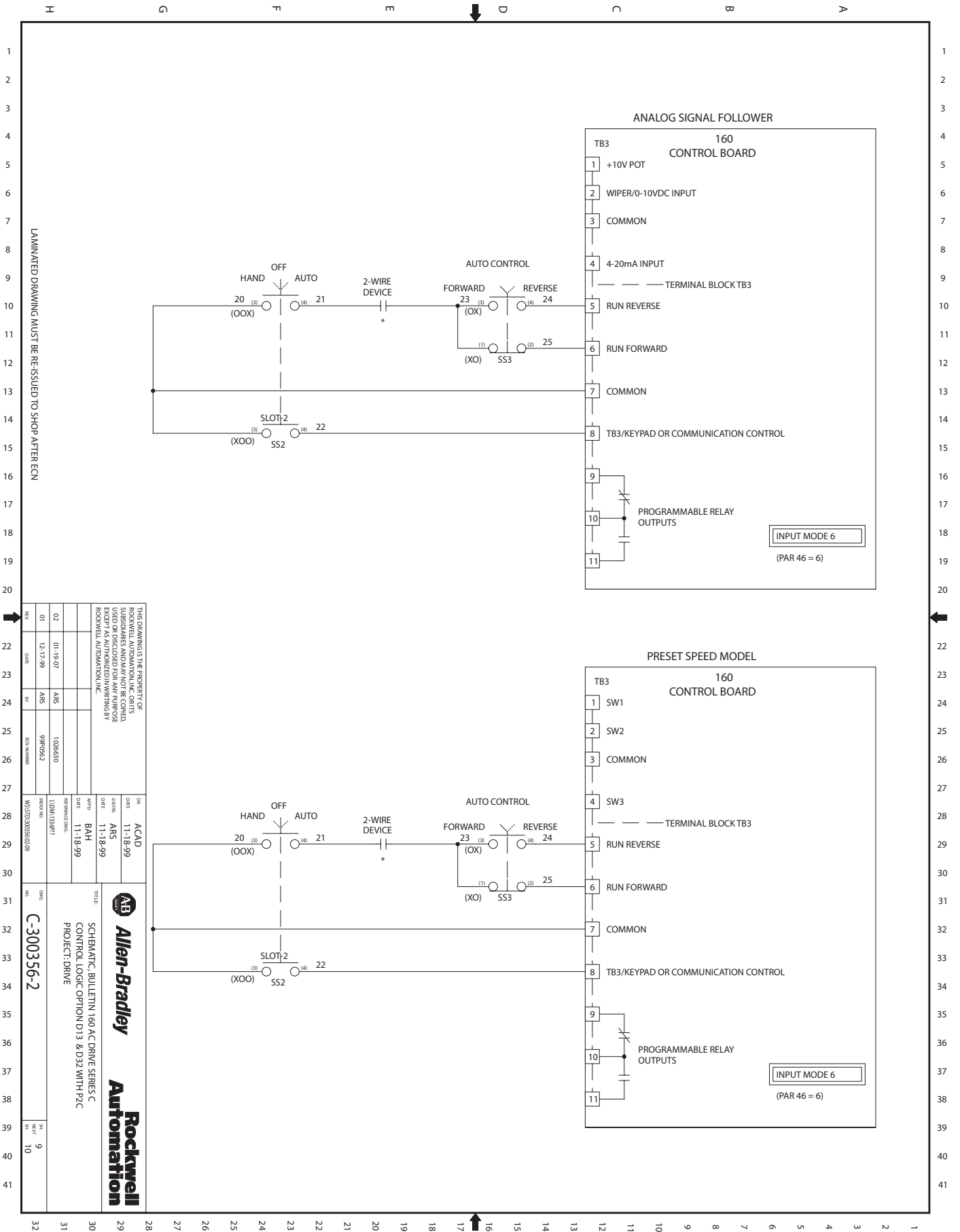
BAH
 DATE: 02-09-99
 LDATE: WFG
 DATE: 02-09-99

SCHMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 & 32 WITHOUT P2C PROJECT DRIVE

REV: 8
 DATE: 01-19-07

REV: 9
 DATE: 03-01-99

D13 and D32 With P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

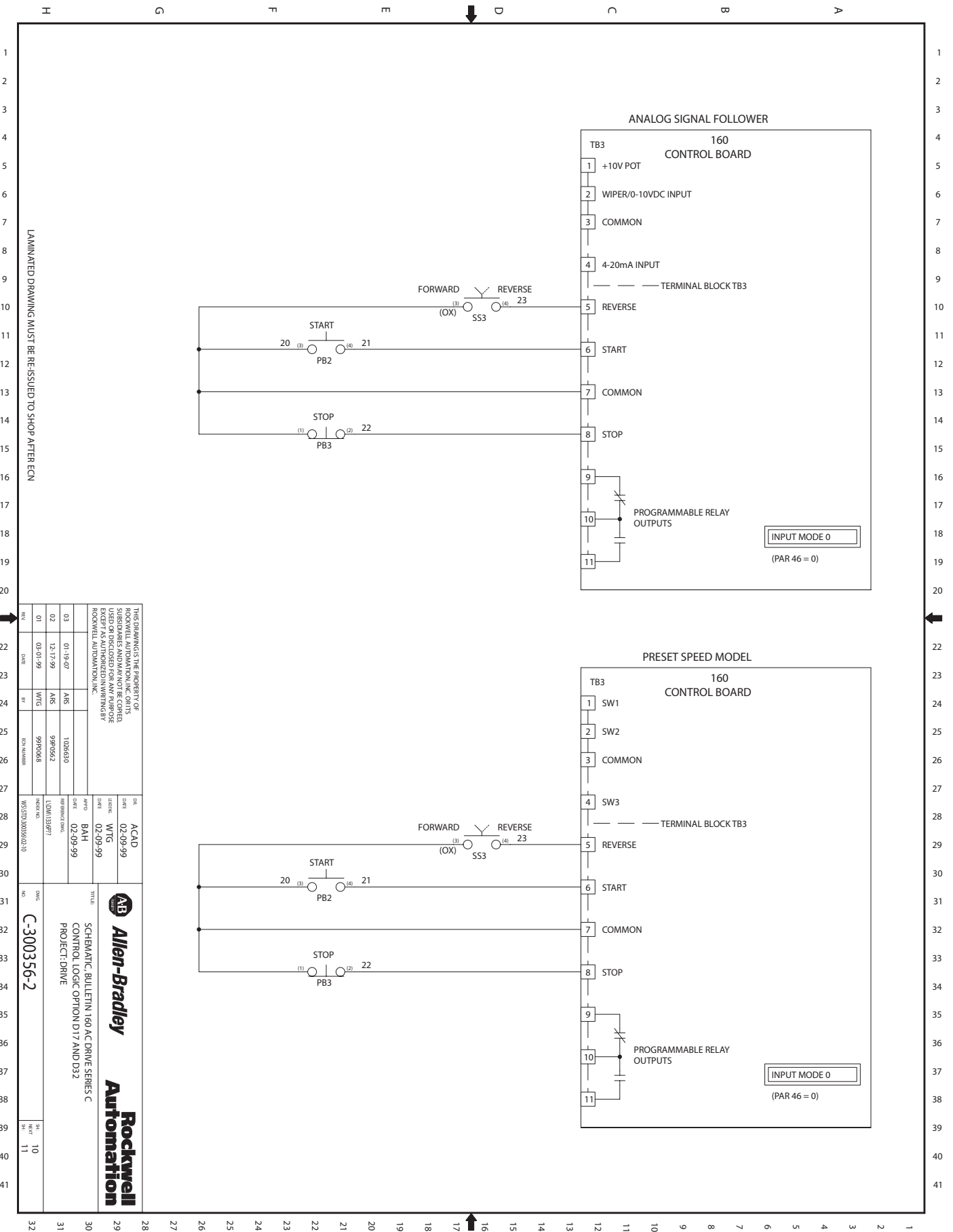
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02	12-17-99	ARS				REVISED FOR P2C
03	01-19-97	ARS				REVISED FOR P2C
04	12-17-99	ARS				REVISED FOR P2C
05	01-19-97	ARS				REVISED FOR P2C
06	12-17-99	ARS				REVISED FOR P2C
07	01-19-97	ARS				REVISED FOR P2C
08	12-17-99	ARS				REVISED FOR P2C
09	01-19-97	ARS				REVISED FOR P2C
10	12-17-99	ARS				REVISED FOR P2C

REV	DATE	BY	CHK	APP'D	DESCRIPTION
01	11-18-99	ARS			INITIALS
02	11-18-99	ARS			REVISED FOR P2C
03	11-18-99	ARS			REVISED FOR P2C
04	11-18-99	ARS			REVISED FOR P2C
05	11-18-99	ARS			REVISED FOR P2C
06	11-18-99	ARS			REVISED FOR P2C
07	11-18-99	ARS			REVISED FOR P2C
08	11-18-99	ARS			REVISED FOR P2C
09	11-18-99	ARS			REVISED FOR P2C
10	11-18-99	ARS			REVISED FOR P2C

REV	DATE	BY	CHK	APP'D	DESCRIPTION
01	11-18-99	ARS			INITIALS
02	11-18-99	ARS			REVISED FOR P2C
03	11-18-99	ARS			REVISED FOR P2C
04	11-18-99	ARS			REVISED FOR P2C
05	11-18-99	ARS			REVISED FOR P2C
06	11-18-99	ARS			REVISED FOR P2C
07	11-18-99	ARS			REVISED FOR P2C
08	11-18-99	ARS			REVISED FOR P2C
09	11-18-99	ARS			REVISED FOR P2C
10	11-18-99	ARS			REVISED FOR P2C

REV	DATE	BY	CHK	APP'D	DESCRIPTION
01	11-18-99	ARS			INITIALS
02	11-18-99	ARS			REVISED FOR P2C
03	11-18-99	ARS			REVISED FOR P2C
04	11-18-99	ARS			REVISED FOR P2C
05	11-18-99	ARS			REVISED FOR P2C
06	11-18-99	ARS			REVISED FOR P2C
07	11-18-99	ARS			REVISED FOR P2C
08	11-18-99	ARS			REVISED FOR P2C
09	11-18-99	ARS			REVISED FOR P2C
10	11-18-99	ARS			REVISED FOR P2C

REV	DATE	BY	CHK	APP'D	DESCRIPTION
01	11-18-99	ARS			INITIALS
02	11-18-99	ARS			REVISED FOR P2C
03	11-18-99	ARS			REVISED FOR P2C
04	11-18-99	ARS			REVISED FOR P2C
05	11-18-99	ARS			REVISED FOR P2C
06	11-18-99	ARS			REVISED FOR P2C
07	11-18-99	ARS			REVISED FOR P2C
08	11-18-99	ARS			REVISED FOR P2C
09	11-18-99	ARS			REVISED FOR P2C
10	11-18-99	ARS			REVISED FOR P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	FOR NUMBER	DESCRIPTION
01	03-01-99	ANS	WFG	99P0068	
02	12-17-99	ANS		99P0062	
03	01-19-07	ANS		1026330	

DATE	02-09-99	DATE	02-09-99
DATE	02-09-99	DATE	02-09-99
DATE	02-09-99	DATE	02-09-99

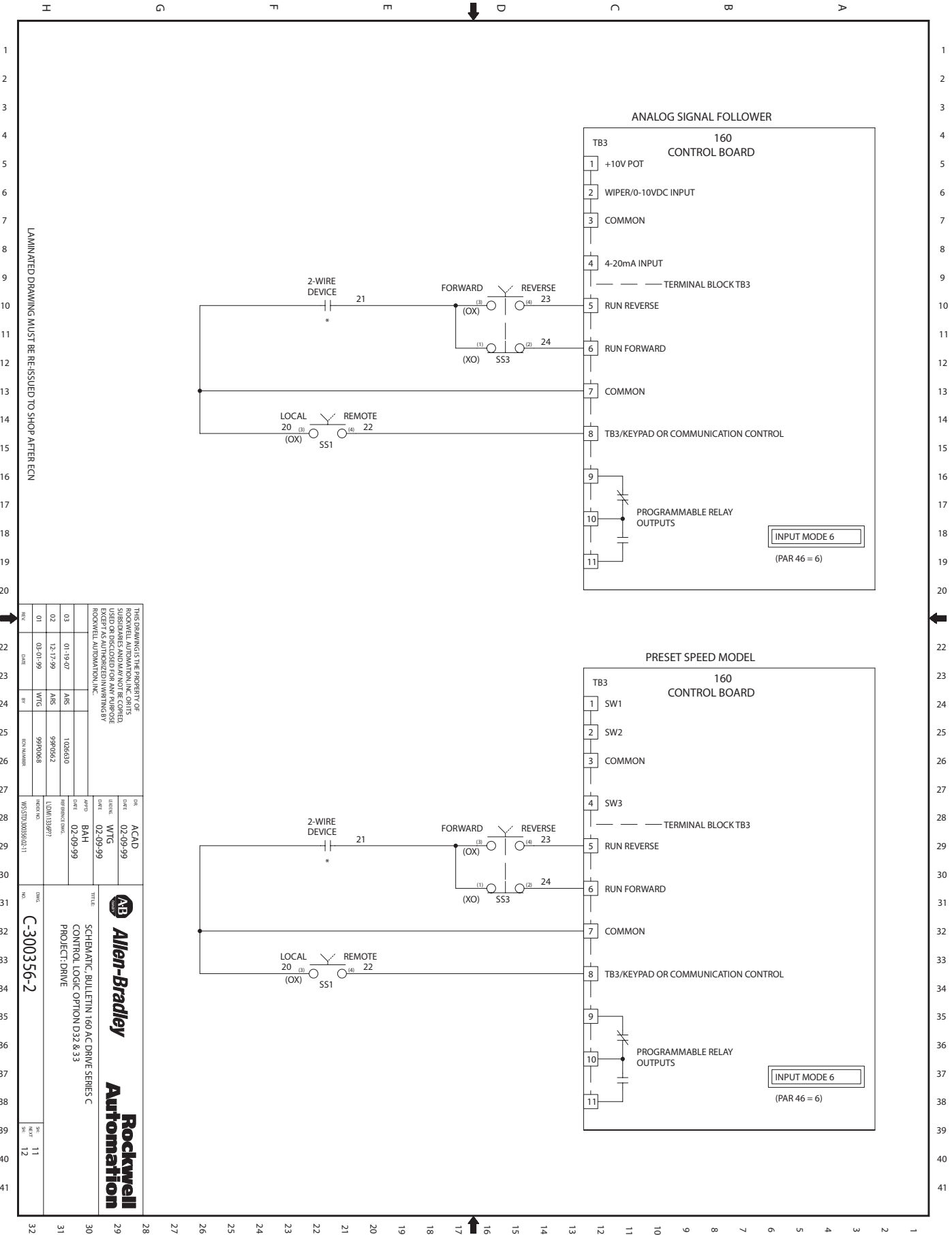
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10	02-09-99	WFG	300356-2
11	02-09-99	WFG	300356-2

REV	DATE	BY	DESCRIPTION
10	02-09-99	WFG	300356-2
11	02-09-99	WFG	300356-2

Allen-Bradley
Rockwell Automation

SCHWAB, BULLETIN 160 AC DRIVE SERIES C
CONTROL LOGIC OPTION D17 AND D32
PROJECT DRIVE

ACAD
WFG
BAH
LDM132871
C-300356-2



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV	DATE	BY	FOR NUMBER
01	03-01-99	WFG	99P0068
02	12-17-99	AHS	99P0062
03	01-19-07	AHS	1026530

REV	DATE	BY	FOR NUMBER
01	02-09-99	WFG	99P0068
02	02-09-99	WFG	99P0062
03	02-09-99	WFG	1026530

REV	DATE	BY	FOR NUMBER
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02	02-09-99	WFG	99P0062
03	02-09-99	WFG	1026530

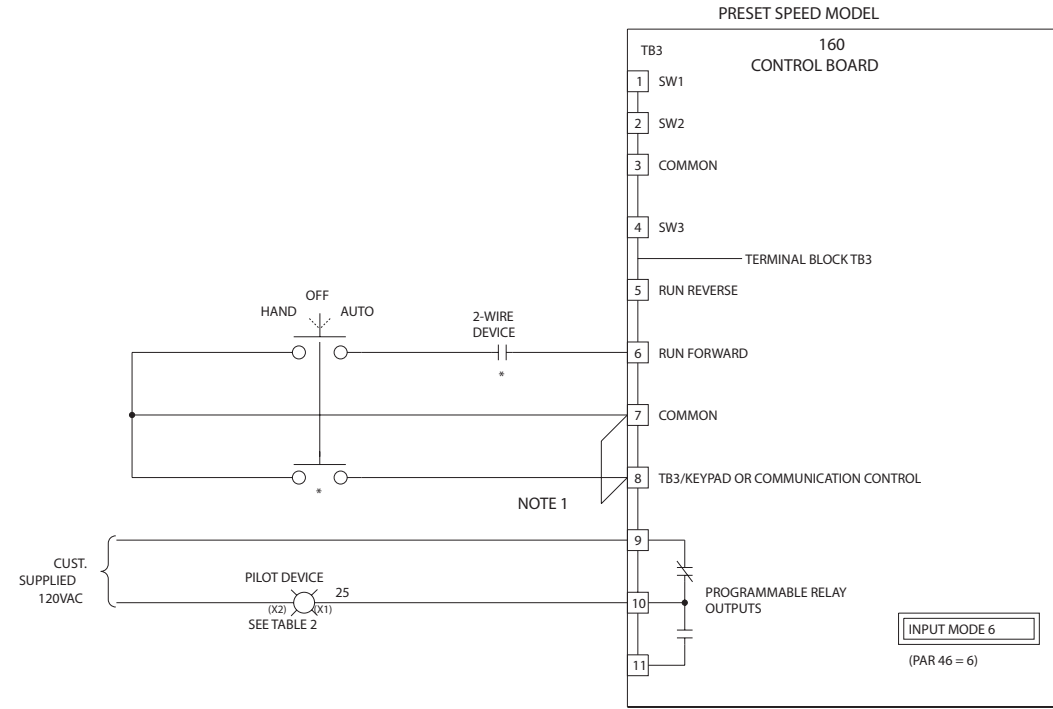
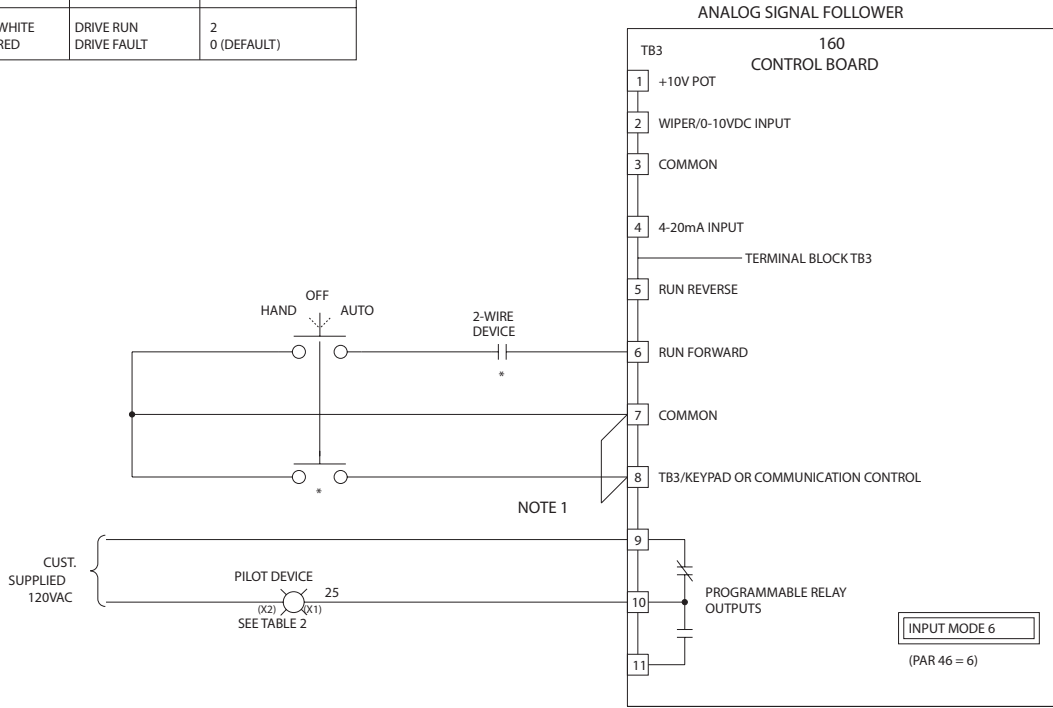
REV	DATE	BY	FOR NUMBER
01	02-09-99	WFG	99P0068
02	02-09-99	WFG	99P0062
03	02-09-99	WFG	1026530

D35 and D36 With Keypad or Comm Control Options

TABLE 2

OPTION	SYMBOL	COLOR	LEGEND	PAR 47 SETTING
D35	PL3	WHITE	DRIVE RUN	2
D36	PL4	RED	DRIVE FAULT	0 (DEFAULT)

LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN



NOTE 1:
WIRE TB3-7 TO TB3-8 IF OPTIONS D13, D33 OR MX12 ARE NOT ORDERED.

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REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	12-17-99	ARS	99R00624	

REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	11-18-99	ARS	11-18-99	
02	11-18-99	BAH	11-18-99	

ACAD
DATE: 11-18-99
LDATE: ARS
DATE: 11-18-99

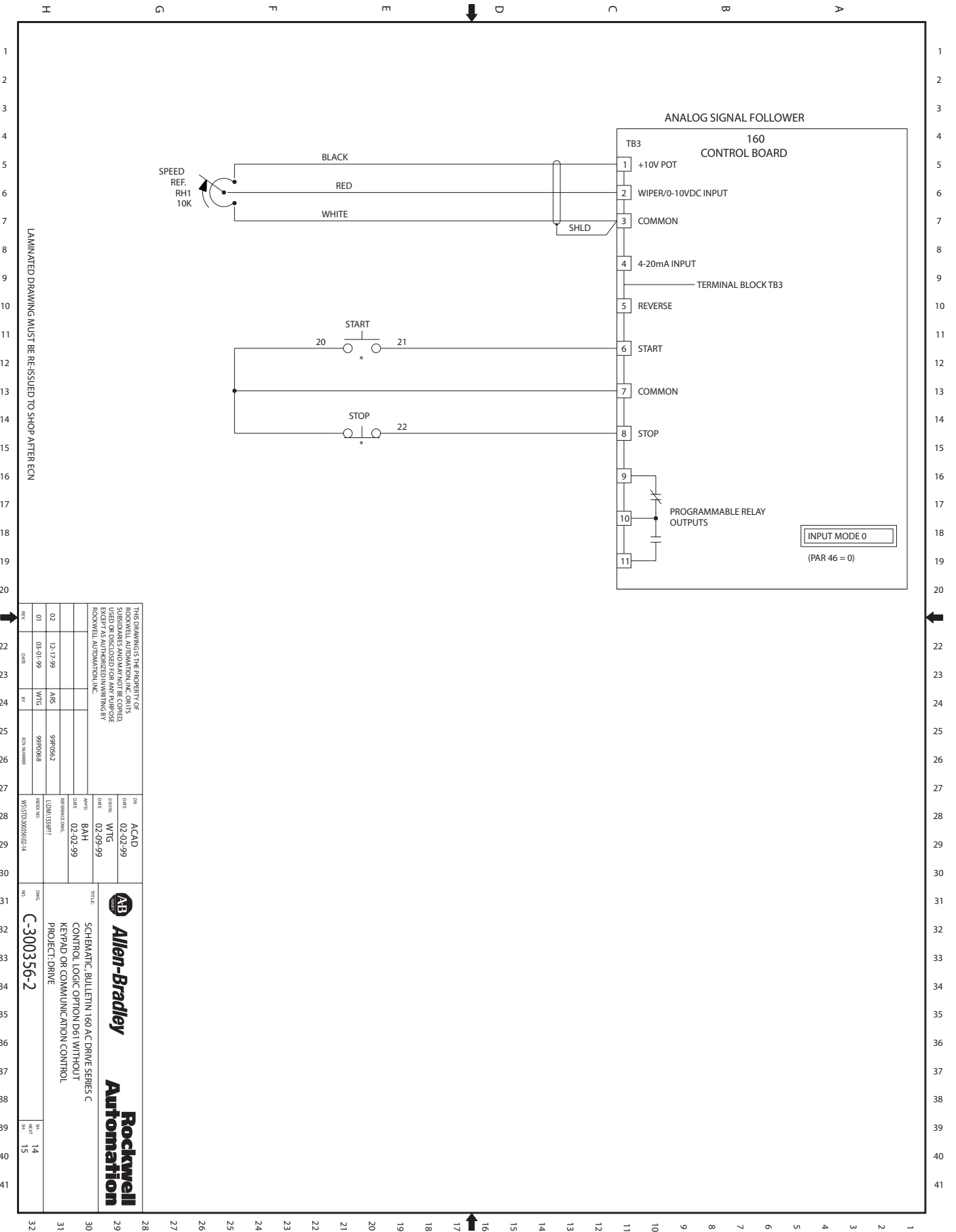
BAH
DATE: 11-18-99
LDATE: UDM1328271

Rockwell Automation
Allen-Bradley
Schematic Bulletin 160 AC Drive Series C
Control Logic Option D35 & D36 with Keypad or Communication Control Options
Project: Drive

C-300356-2

REV: 13
REV: 14

D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options



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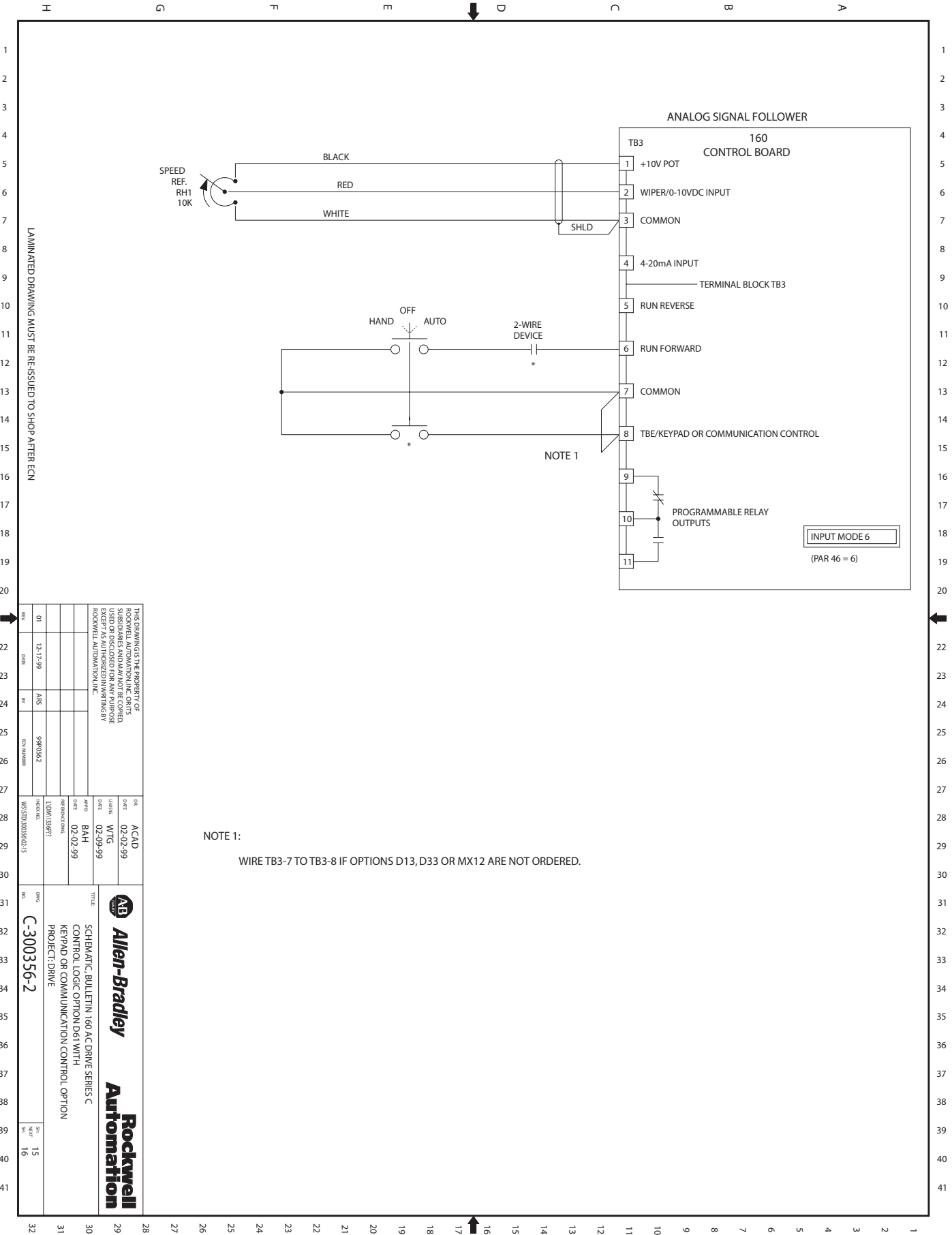
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01	03-01-99	WFG	99PR0486	
02	12-17-99	AHS	99P0662	

DATE	02-02-99	ACAD
DATE	02-09-99	WFG
DATE	02-02-99	BAH

Allen-Bradley
Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D61 WITHOUT KEYPAD OR COMMUNICATION CONTROL PROJECT: DRIVE
 C-300356-2
 DATE: 14
 REV: 15

D61 for Analog Signal Follower Drives With Keypad or Comm Control Options

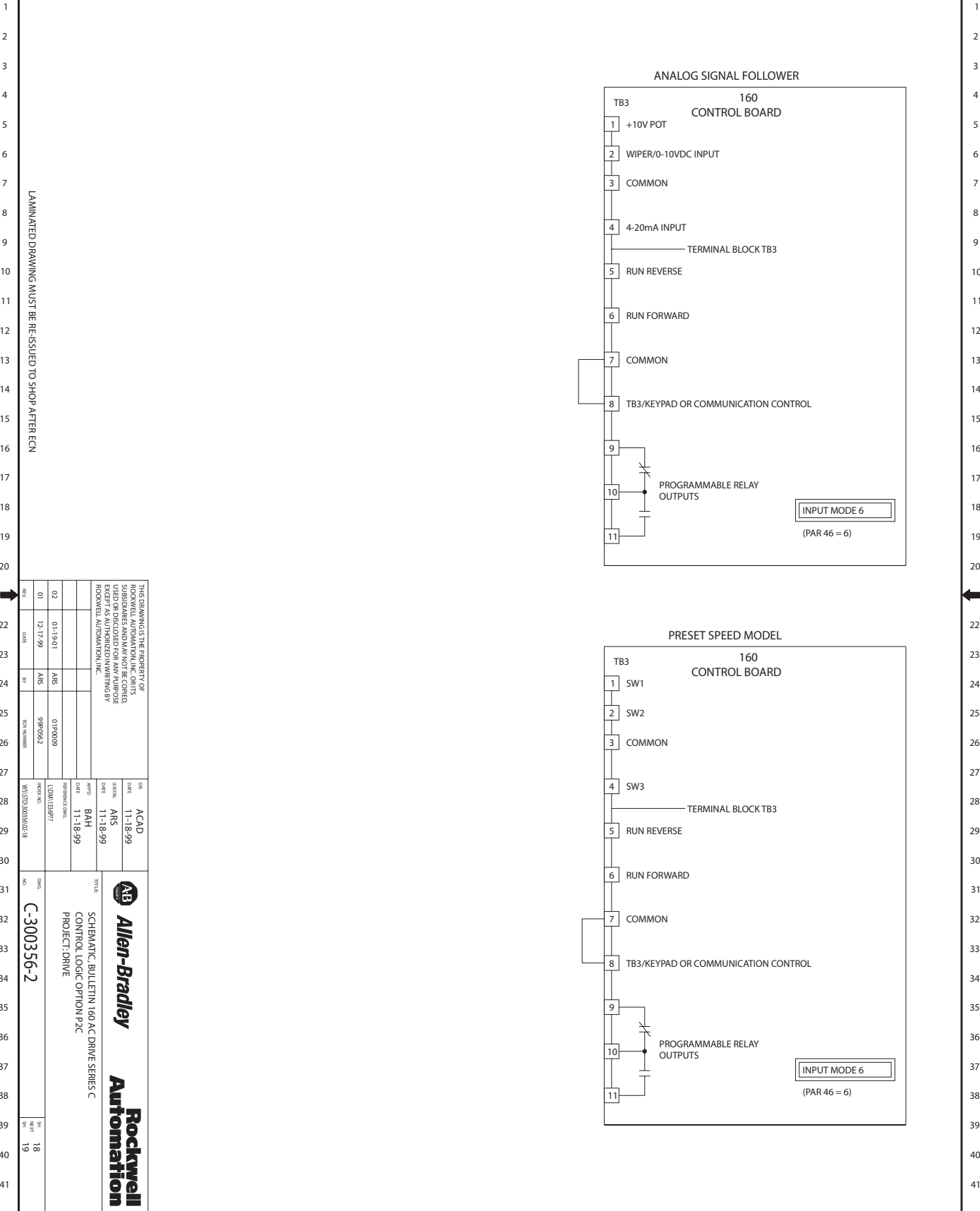


LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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TITLE: Allen-Bradley Rockwell Automation SCHEMATIC: BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D61 WITH KEYPAD OR COMMUNICATION CONTROL OPTION PROJECT: DRIVE					PART NO: C-300356-2 REV: 15 REV: 16				

NOTE 1:
WIRE TB3-7 TO TB3-8 IF OPTIONS D13, D33 OR MX12 ARE NOT ORDERED.

H G F E D C B A



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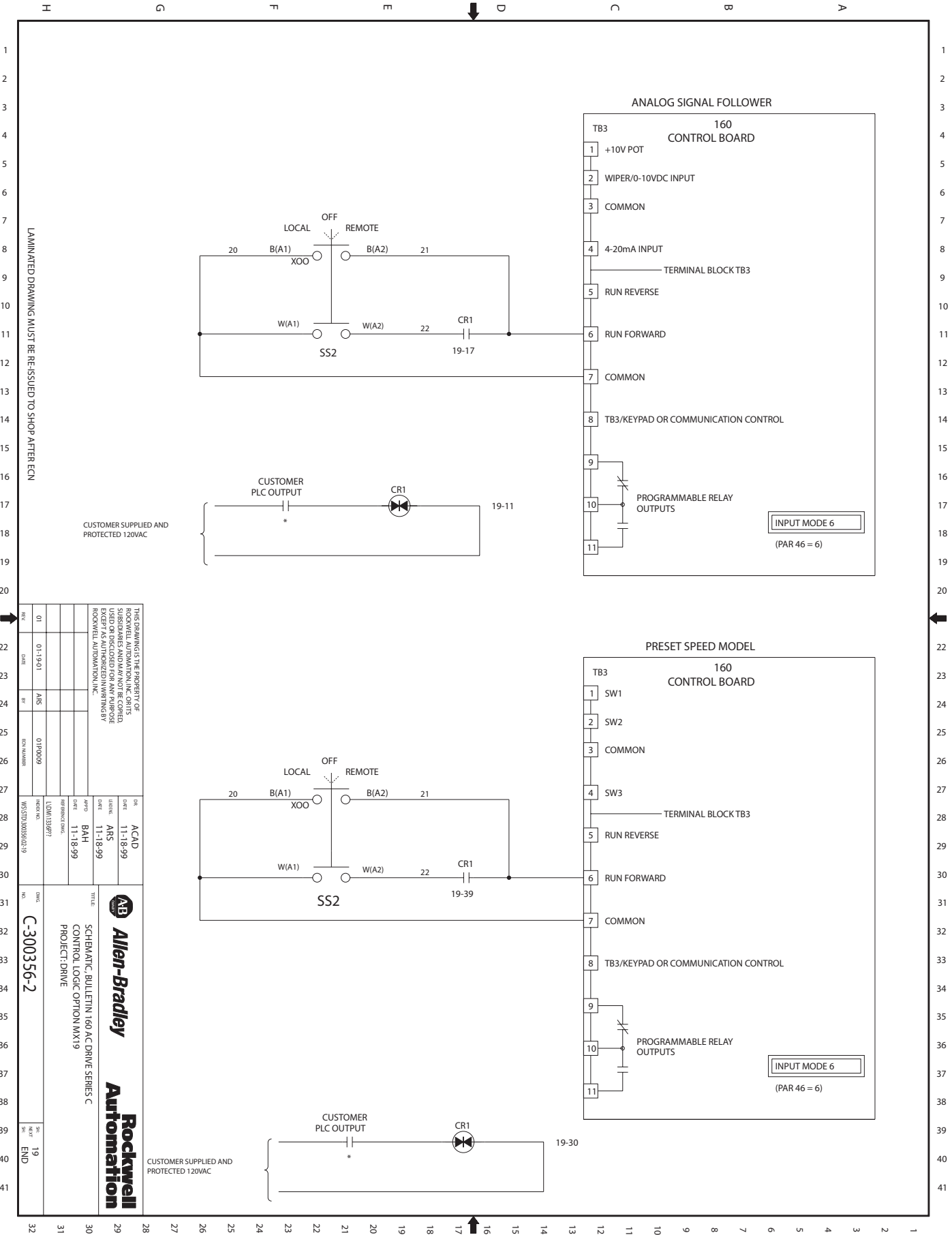
REV	DATE	BY	APP'D	DESCRIPTION
01	12-17-99	ARS	...	99R00624
02	01-19-01	ARS	...	01P0009

REV	DATE	BY	APP'D	DESCRIPTION
01	12-17-99	ARS	...	99R00624
02	01-19-01	ARS	...	01P0009

REV	DATE	BY	APP'D	DESCRIPTION
01	12-17-99	ARS	...	99R00624
02	01-19-01	ARS	...	01P0009

REV	DATE	BY	APP'D	DESCRIPTION
01	12-17-99	ARS	...	99R00624
02	01-19-01	ARS	...	01P0009

REV	DATE	BY	APP'D	DESCRIPTION
01	12-17-99	ARS	...	99R00624
02	01-19-01	ARS	...	01P0009



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

CUSTOMER SUPPLIED AND PROTECTED 120VAC

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REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	01-19-91	ARS	017P009	
02	11-18-99	ARS	017P009	
03	11-18-99	BAH	017P009	
04	11-18-99	BAH	017P009	

ACAD
 DATE: 11-18-99
 LDATE: ARS
 DATE: 11-18-99

BAH
 DATE: 11-18-99

UDM132821
 WPS15103005002019

AB Allen-Bradley Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION MX19 PROJECT: DRIVE

NO. **C-300356-2**

REV. **19**
 END

CUSTOMER SUPPLIED AND PROTECTED 120VAC

Notes

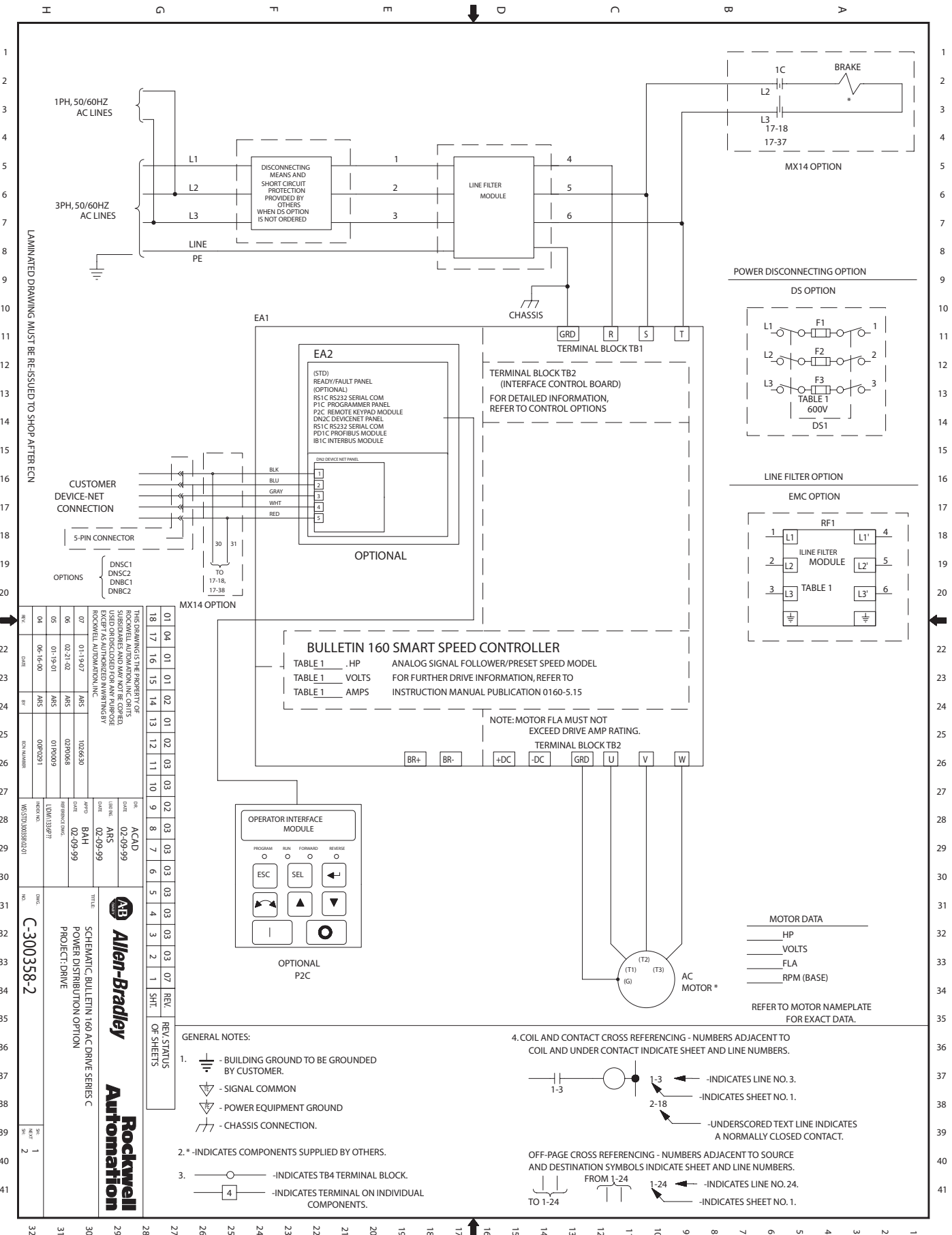
Twenty-Four Volt DC (24VDC) Control Interface for Analog and Preset Drives

Power Distribution and DS Option	28
Operator Interface Options DN2C, RS1C, P1C, RPAC, P2C, and Ready/Fault Panel	28
Enclosure Mounted DeviceNet Connector Options: DNSC1, DNSC2, DNBC1, DNBC2	28
Drive Ratings and DS Option Ratings	29

Product Control Logic Options

D13 Without P2C	30
D13 With P2C	31
D17	32
D32	33
D33	34
D13 and D32 Without P2C	35
D13 and D32 With P2C	36
D17 and D32	37
D32 and D33	38
D35 and D36 Without Keypad or Comm Control Options	39
D35 and D36 With Keypad or Comm Control Options	40
D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options . . .	41
D61 for Analog Signal Follower Drives With Keypad or Comm Control Options	42
MX12	43
MX14	28 and 44
MX19	45

Power Distribution and DS Option



REV	DATE	BY	CHK	DESCRIPTION																
01	04-01	01	01	02	01	02	01	02	03	03	02	03	03	03	03	03	03	03	07	REV
02	04-01	01	01	02	01	02	01	02	03	03	02	03	03	03	03	03	03	03	07	REV
03	04-01	01	01	02	01	02	01	02	03	03	02	03	03	03	03	03	03	03	07	REV
04	06-16-00	ANS	ANS	01R0009	00P0201															REV
05	01-19-01	ANS	ANS	01R0009																REV
06	02-21-02	ANS	ANS	02R0068																REV
07	01-19-97	ANS	ANS	102R639																REV
08	02-09-99	ANS	ANS	02-09-99																REV
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22	01-19-01	ANS	ANS	01R0009																REV
23	06-16-00	ANS	ANS	00P0201																REV
24	01-19-97	ANS	ANS	102R639																REV
25	02-21-02	ANS	ANS	02R0068																REV
26	01-19-01	ANS	ANS	01R0009																REV
27	06-16-00	ANS	ANS	00P0201																REV
28	01-19-97	ANS	ANS	102R639																REV
29	02-21-02	ANS	ANS	02R0068																REV
30	01-19-01	ANS	ANS	01R0009																REV
31	06-16-00	ANS	ANS	00P0201																REV
32	01-19-97	ANS	ANS	102R639																REV

Drive Ratings and DS Option Ratings

TABLE 1

SINGLE PHASE

DRIVE RATINGS			FUSE RATINGS (DS OPTION)			LINE FILTER MODULE
CATALOG NO.	VOLTAGE	FLA	TYPE	AMP	VOLT	CATALOG NUMBER
160S-AA02* (.5)	200-240V	2.3A	LPJ	6A	600V	160S-RFA-9-A
160S-AA03* (.75)	200-240V	3.0A	LPJ	10A	600V	160S-RFA-9-A
160S-AA04* (1)	200-240V	4.5A	LPJ	15A	600V	160S-RFA-9-A
160S-AA08* (2)	200-240V	8.0A	LPJ	30A	600V	160S-RFA-16-B

THREE PHASE

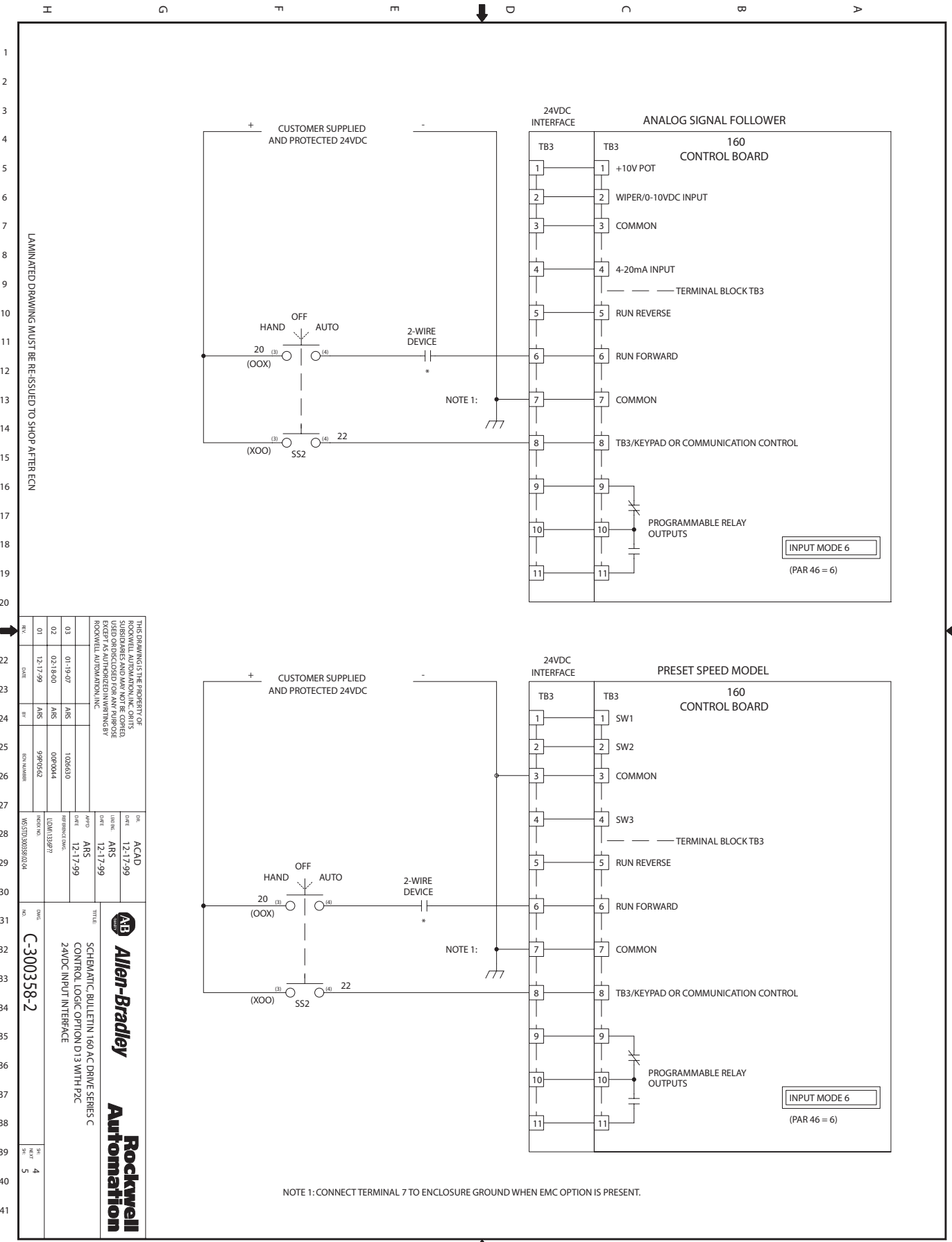
DRIVE RATINGS			FUSE RATINGS (DS OPTION)			LINE FILTER MODULE
CATALOG NO. (HP)	VOLTAGE	FLA	TYPE	AMP	VOLT	CATALOG NUMBER
160-AA02* (.5)	200-240V	2.3A	LPJ	6A	600V	160-RFB-5-A
160-AA03* (.75)	200-240V	3.0A	LPJ	6A	600V	160-RFB-5-A
160-AA04* (1)	200-240V	4.5A	LPJ	10A	600V	160-RFB-5-A
160-AA08* (2)	200-240V	8.0A	LPJ	15A	600V	160-RFB-14-A
160-AA12* (3)	200-240V	12.0A	LPJ	20A	600V	160-RFB-14-A
160-AA18* (5)	200-240V	18.0A	LPJ	30A	600V	160-RFB-22-B
160-BA01* (.5)	380-460V	1.2A	LPJ	4A	600V	160-RFB-5-A
160-BA02* (.75)	380-460V	1.7A	LPJ	4A	600V	160-RFB-5-A
160-BA03* (1)	380-460V	2.3A	LPJ	5A	600V	160-RFB-5-A
160-BA04* (2)	380-460V	4.0A	LPJ	8A	600V	160-RFB-5-A
160-BA06* (3)	380-460V	6.0A	LPJ	15A	600V	160-RFB-14-A
160-BA10* (5)	380-460V	10.5A	LPJ	20A	600V	160-RFB-14-B

* - CATALOG NO. SUFFIX CAN CONTAIN "SF1" OR "PS1"

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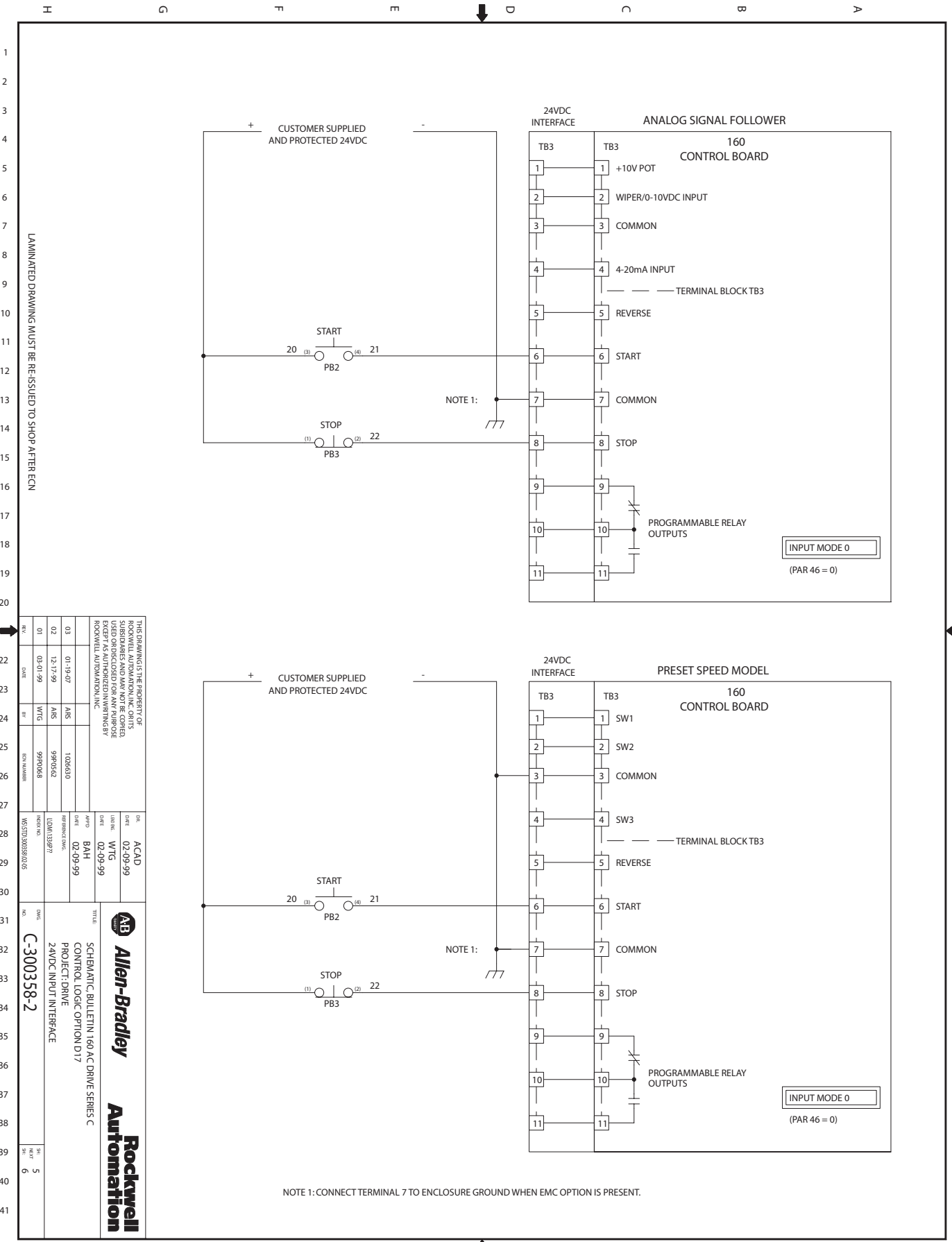
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NO. 01 DATE: 03-31-99 BY: WFG REVISION: 1	NO. 02 DATE: 02-18-00 BY: ARS REVISION: 2	NO. 03 DATE: 01-19-01 BY: ARS REVISION: 3	NO. 04 DATE: 02-09-99 BY: ARS REVISION: 4
ECR NUMBER: 99P0068 WPSSTD0003800202		ECR NUMBER: 99P0068 WPSSTD0003800202	
NO. C-300358-2		NO. 2 NO. 3	

D13 With P2C



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REV.	DATE	BY	CHK	DESCRIPTION
01	12-17-99	ARS	ARS	99P0062
02	02-18-00	ARS	00P0044	
03	01-19-07	ARS	1020630	
ACAD DATE: 12-17-99 IUCR: ARS DATE: 12-17-99 APPR: ARS DATE: 12-17-99 REFERENCE DATE: 12/13/2007 WBS STD 300358-02/4				
Allen-Bradley Automation		TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 WITH P2C 24VDC INPUT INTERFACE		
REV.	DATE	BY	CHK	DESCRIPTION
4				
5				



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REV.	DATE	BY	ECN NUMBER
01	03-21-99	WTC	99090368
02	12-17-99	ANS	99090662
03	01-19-07	ANS	10206310

DATE	TIME	ACAD
02-09-99	02:09:99	WTC
DATE	TIME	APPD
02-09-99	02:09:99	BAH

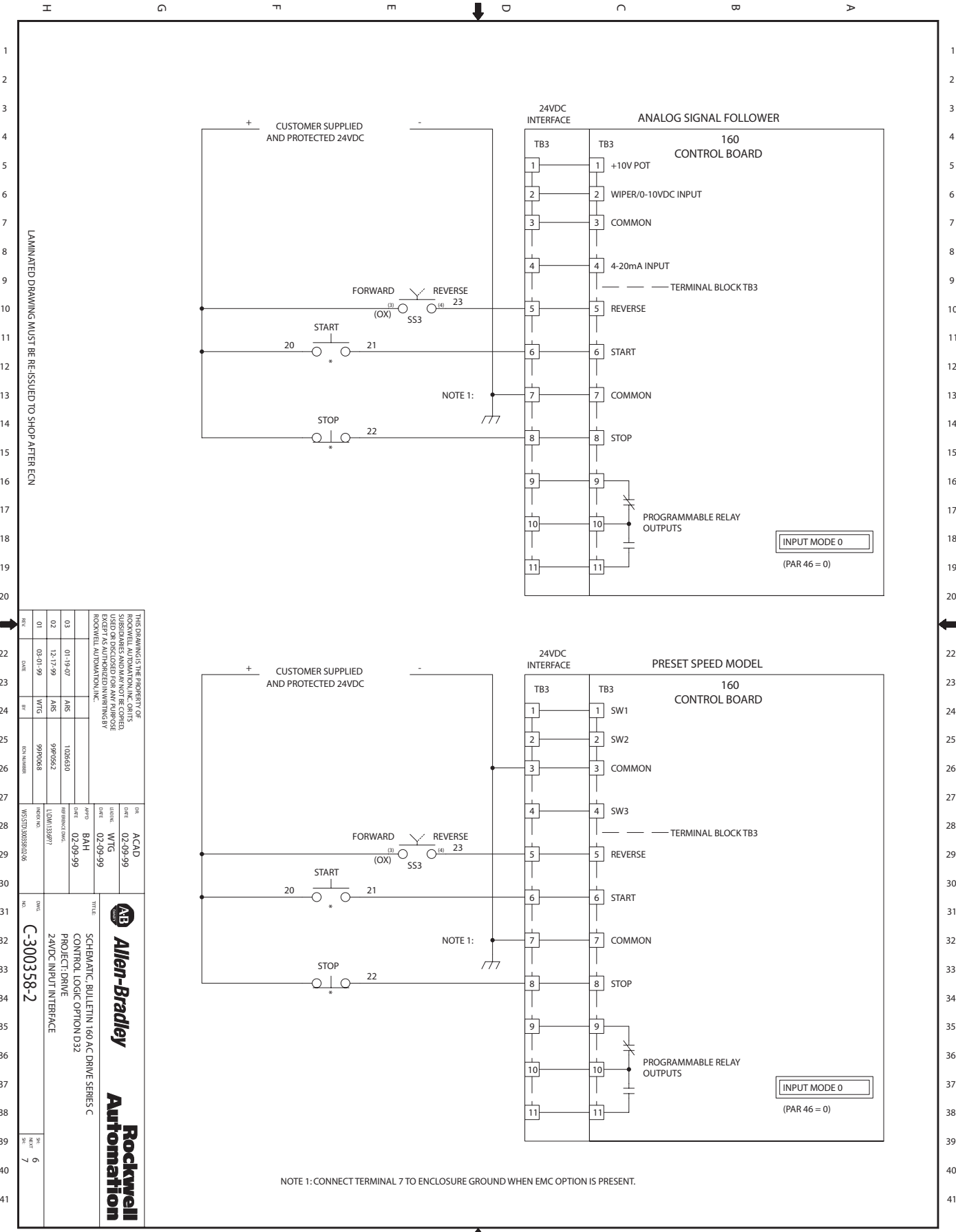
PROJECT: DRIVE
PROJECT: DRIVE
24VDC INPUT INTERFACE

Allen-Bradley
Rockwell Automation

300358-2

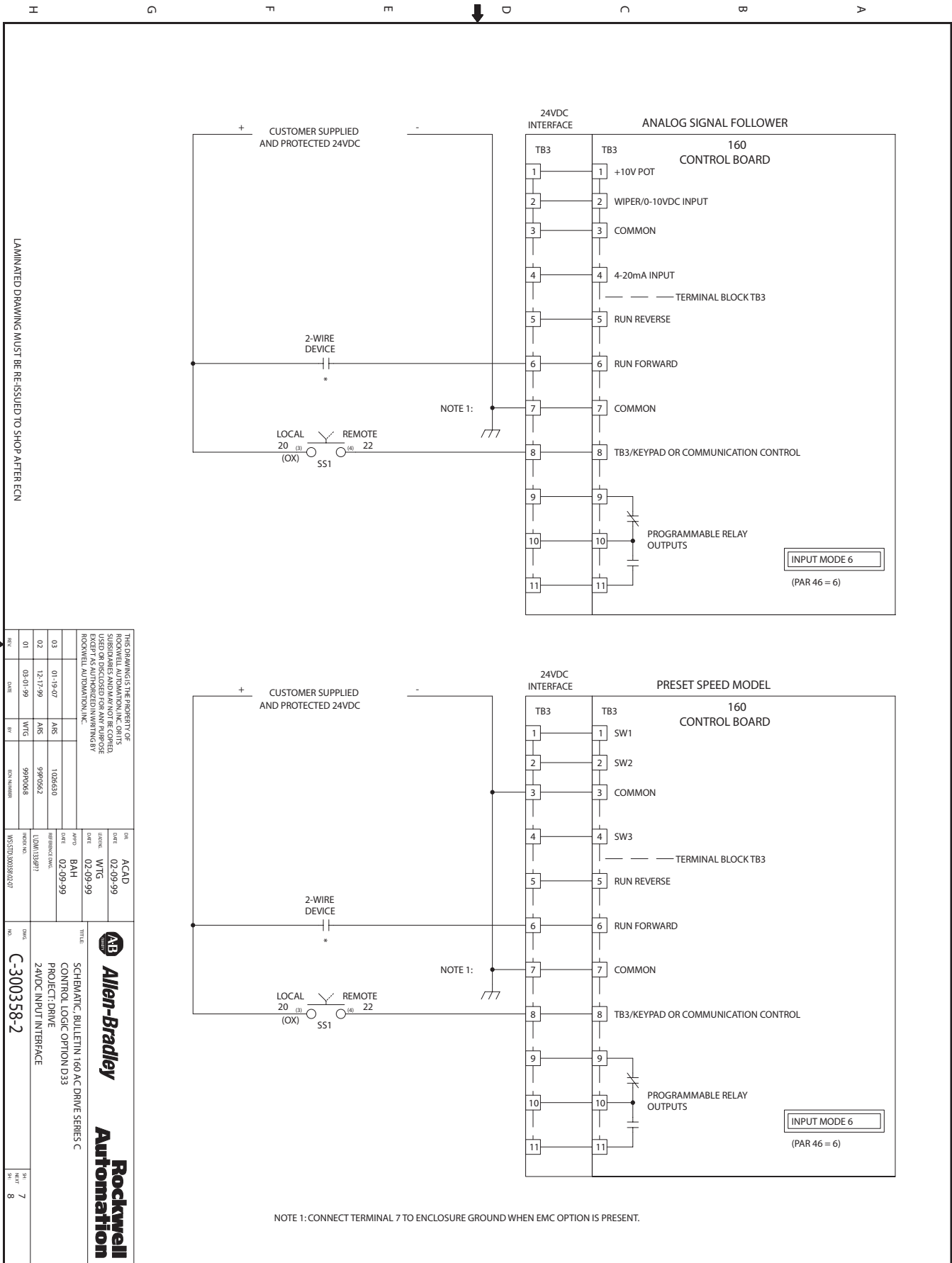
REV.	DATE	BY
5		
6		

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	APP'D	DATE	REV	DATE	BY	APP'D	DATE	REV	DATE	BY	APP'D	DATE
01	03-01-99	WJG			02-09-99	01	03-01-99	WJG		02-09-99	03	01-19-07	ANS		02-09-99
02	12-17-99	ANS			02-09-99	02	12-17-99	ANS		02-09-99	04	01-19-07	ANS		02-09-99
03	01-19-07	ANS			02-09-99	03	01-19-07	ANS		02-09-99	05	01-19-07	ANS		02-09-99
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ACAD 02-09-99															
WJG 02-09-99															
BAH 02-09-99															
C-300358-2															
Allen-Bradley Automation															
SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D32 PROJECT DRIVE 24VDC INPUT INTERFACE															
REV 6															
REV 7															



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REV	DATE	BY	FOR NUMBER
01	03-01-99	WFG	99P0R068
02	12-17-99	ANS	99P0R062
03	01-19-07	ANS	1026530

REV	DATE	BY	FOR NUMBER
01	02-09-99	WFG	99P0R068
02	02-09-99	WFG	99P0R062
03	02-09-99	WFG	1026530

REV	DATE	BY	FOR NUMBER
01	02-09-99	WFG	99P0R068
02	02-09-99	WFG	99P0R062
03	02-09-99	WFG	1026530

Allen-Bradley
Rockwell Automation

ACAD
DATE: 02-09-99
DATE: 02-09-99
DATE: 02-09-99

WFG
WFG
WFG

BAH
DATE: 02-09-99

U0M132801
99P0R068

WVS5TD300358-02/0

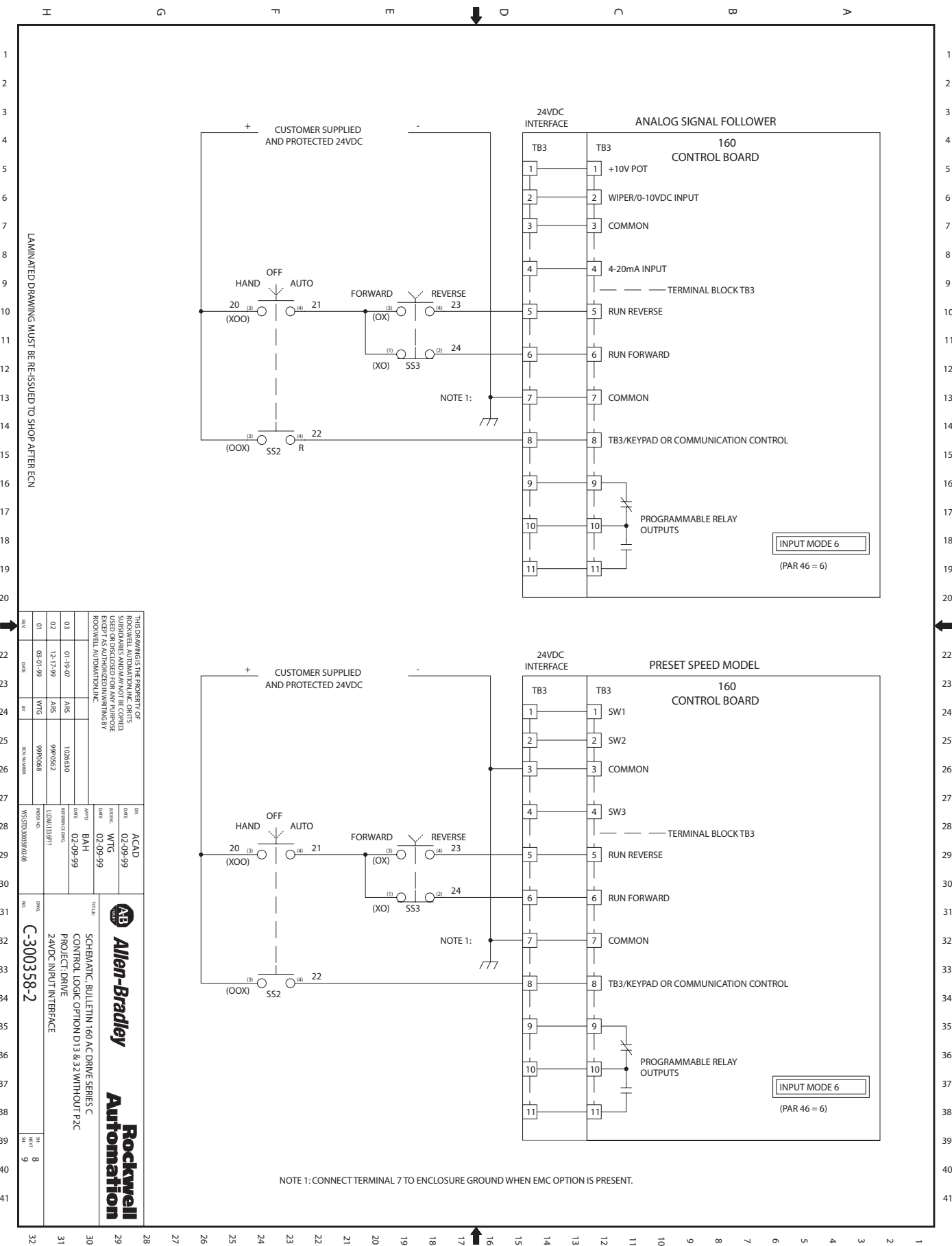
AB
SCHEMATIC BULLETIN 160 AC DRIVE SERIES C
CONTROL LOGIC OPTION D33
PROJECT DRIVE
24VDC INPUT INTERFACE

C-300358-2

REV 7
REV 8

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

D13 and D32 Without P2C

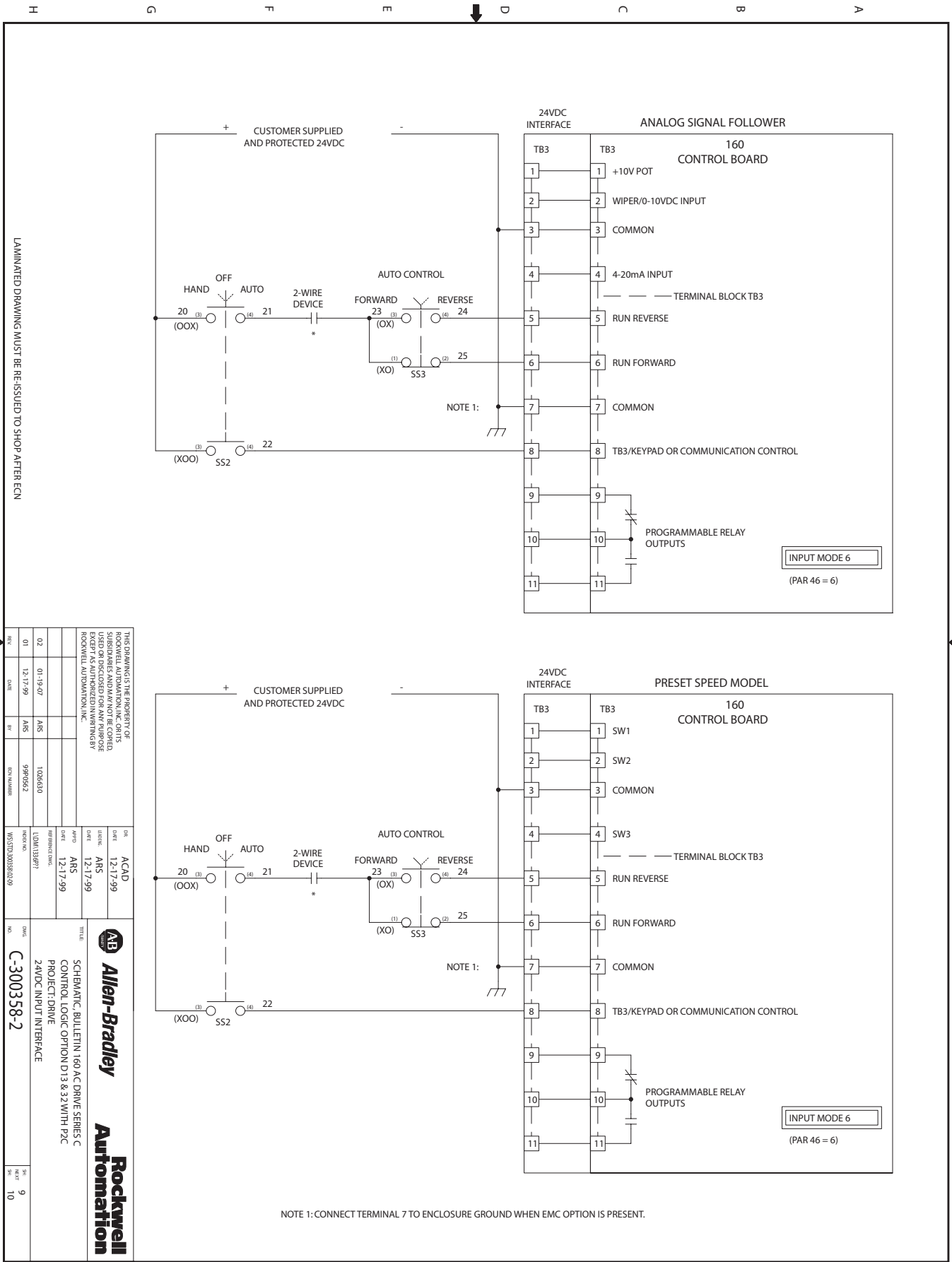


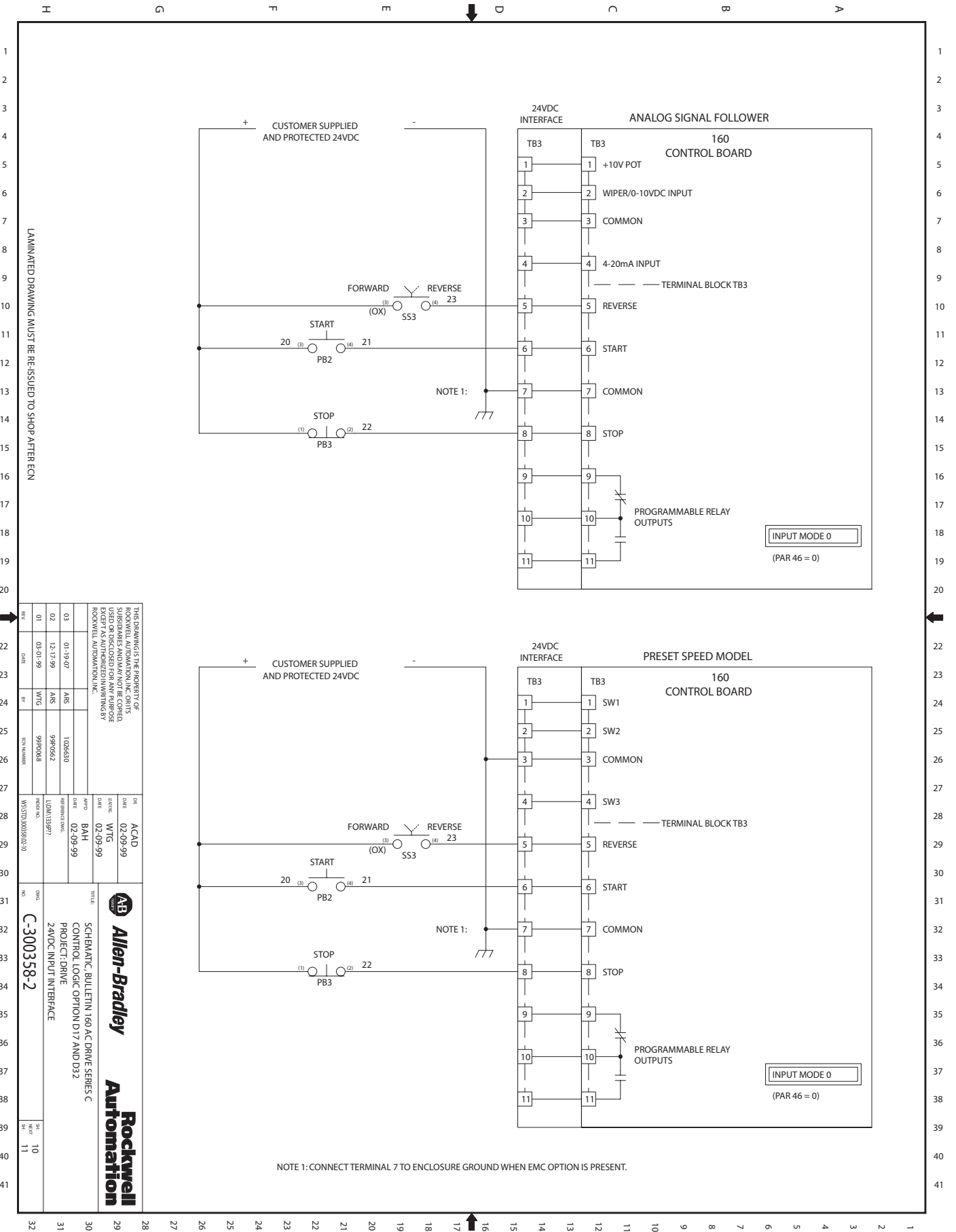
LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE		BY		APP'D		CHK'D		DATE		REV		DATE		BY		APP'D		CHK'D		DATE	
01	02-01-99	WFG		99P09068																			
02	12-17-99	ANS		99P09062																			
03	01-19-07	ANS		1026530																			
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ACAD		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
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WFG																							
BAH		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
BAH		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99		02-09-99	
UDM132871																							
C-300358-2																							
Rockwell Automation																							
Allen-Bradley																							
Schematic Bulletin 160 AC Drive Series C																							
Control Logic Option D13 & 32 Without P2C																							
24VDC Input Interface																							
REV		DATE		BY		APP'D		CHK'D		DATE		REV		DATE		BY		APP'D		CHK'D		DATE	
8																							
9																							

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

D13 and D32 With P2C





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REV		DATE	BY	APP'D	DESCRIPTION
01	02-01-99	WJG	99R0406		ISSUE FOR REVISED PROJECT
02	12-17-99	ANS	99R0662		ISSUE FOR REVISED PROJECT
03	01-19-07	ANS	1026530		ISSUE FOR REVISED PROJECT

DATE	02-09-99	ACAD
DATE	02-09-99	WJG
DATE	02-09-99	BAH
DATE	02-09-99	WJG

NO.	DATE	REV
10	11	

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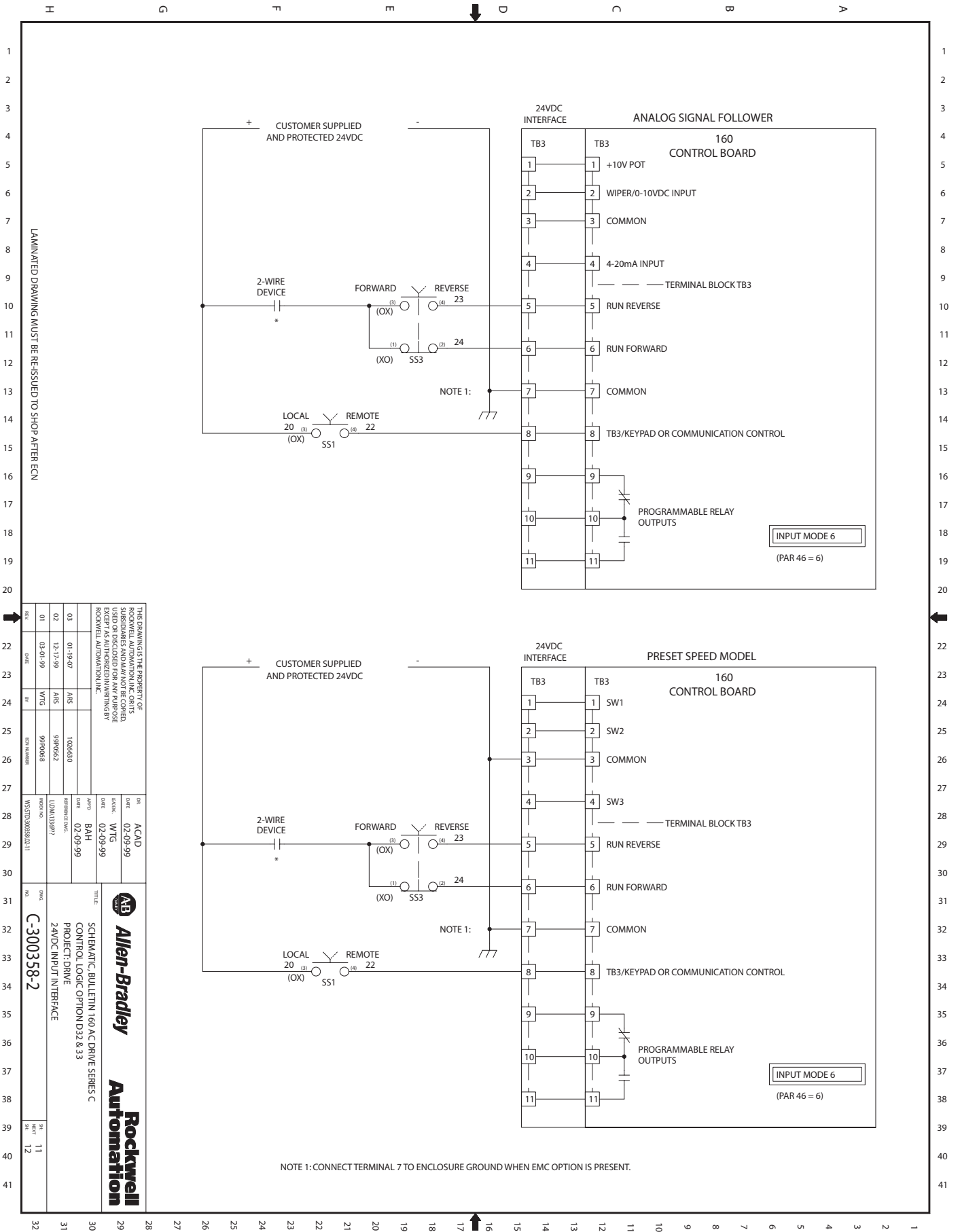
Allen-Bradley
Rockwell Automation

SCHMATIC BULLETIN 160 AC DRIVE SERIES C
CONTROL LOGIC OPTION D17 AND D32
24VDC INPUT INTERFACE

C-300358-2

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

D32 and D33



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REV	DATE	BY	FOR NUMBER
01	03-31-99	WJG	99P04068
02	12-17-99	ANS	99P0662
03	01-19-07	ANS	1026530

REV	DATE	BY	FOR NUMBER
01	02-09-99	WJG	99P04068
02	02-09-99	WJG	99P04068
03	02-09-99	WJG	99P04068

REV	DATE	BY	FOR NUMBER
01	02-09-99	WJG	99P04068
02	02-09-99	WJG	99P04068
03	02-09-99	WJG	99P04068

ACAD
DATE: 02-09-99
USER: WJG

BAH
DATE: 02-09-99
USER: WJG

Allen-Bradley
Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D32 & 33 PROJECT DRIVE 24VDC INPUT INTERFACE

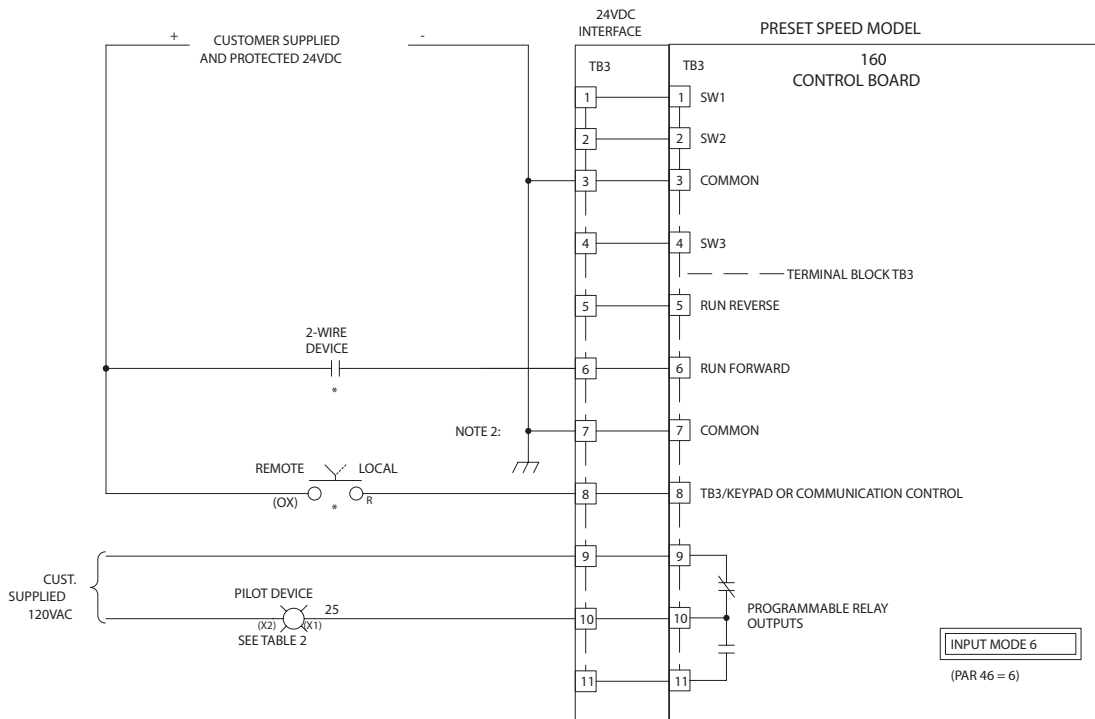
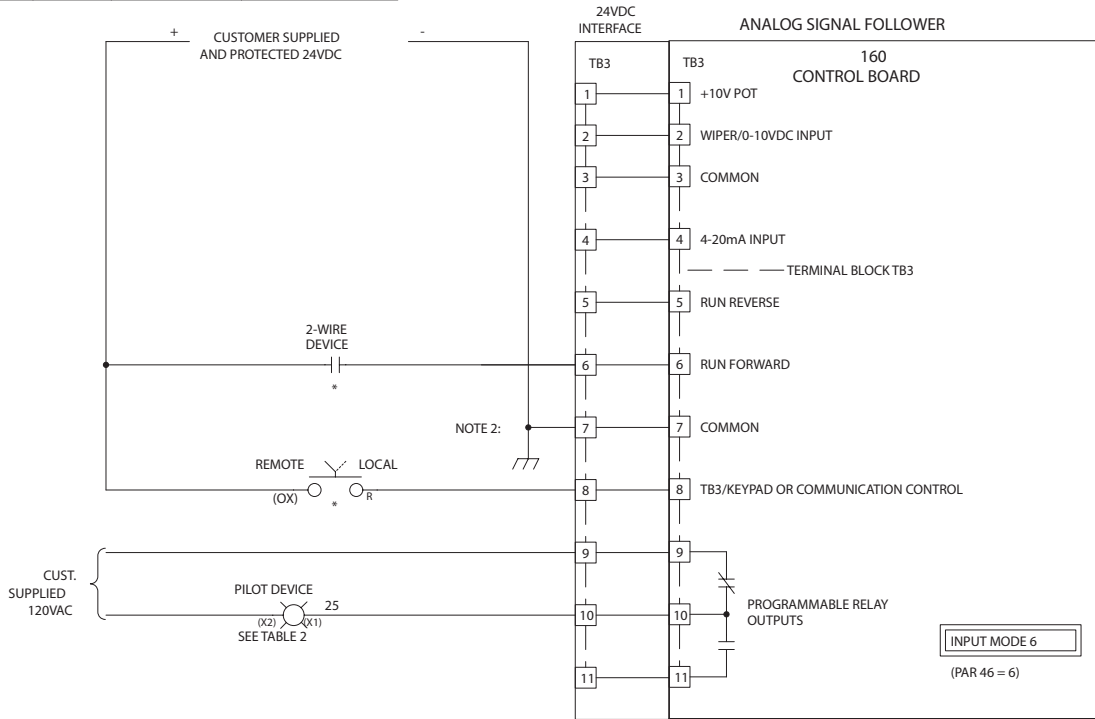
NO. **C-300358-2**

REV: 11
REV: 12

D35 and D36 With Keypad or Comm Control Options

TABLE 2

OPTION	SYMBOL	COLOR	LEGEND	PAR 47 SETTING
D35	PL3	WHITE	DRIVE RUN	2
D36	PL4	RED	DRIVE FAULT	0 (DEFAULT)



NOTE 1: CONNECT THE -24VDC & +24VDC TO TERMINALS TB3-7 & TB3-8 RESPECTIVELY WHEN D13, D33 OR MX12 ARE NOT ORDERED.

NOTE 2: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

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REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	12-17-99	ARS	99R00624	
02	12-17-99	ARS	99R00624	

REV	DATE	BY	FOR NUMBER	DESCRIPTION
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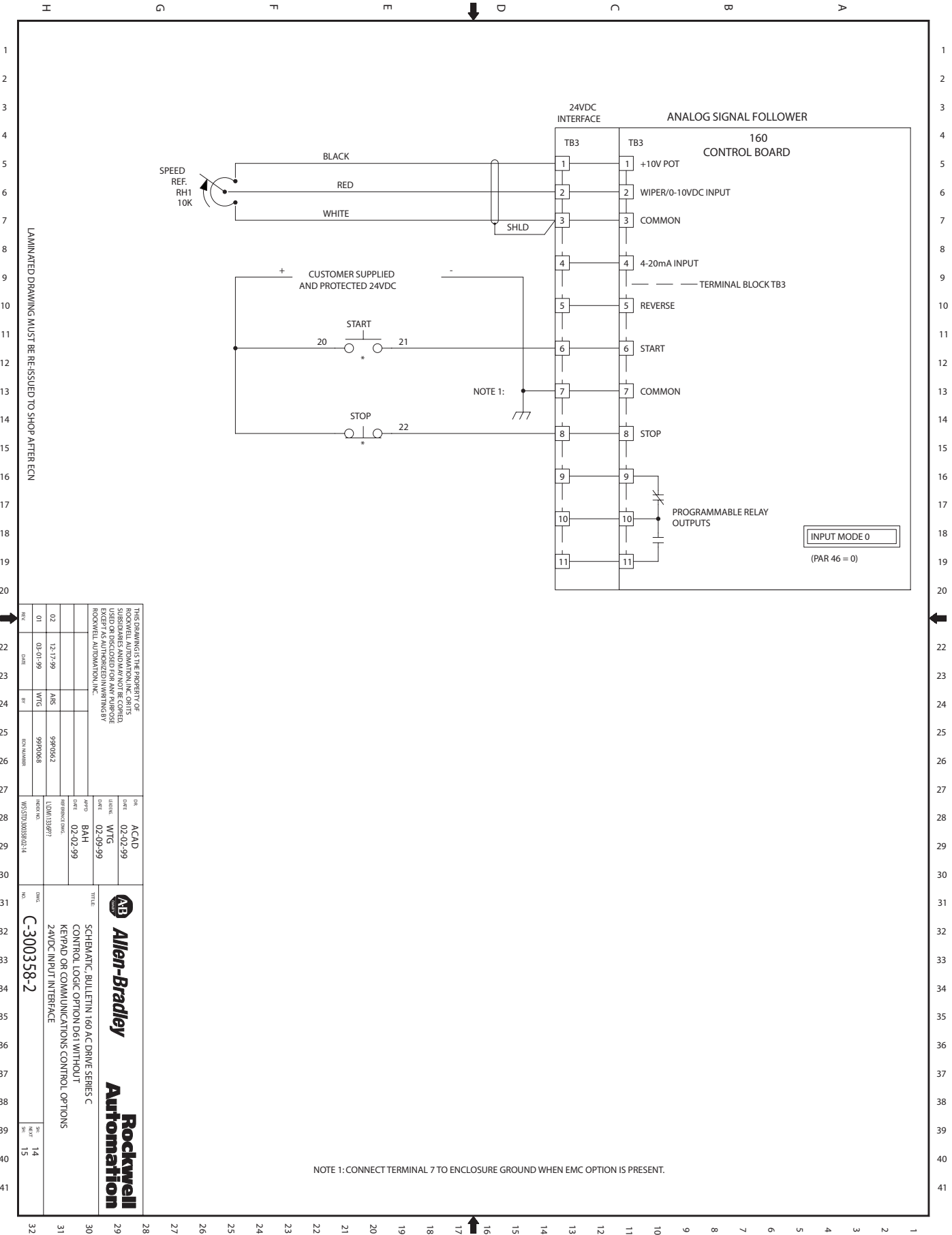
Allen-Bradley
Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D35 & 36 WITH KEYPAD OR COMMUNICATION CONTROL OPTIONS 24VDC INPUT INTERFACE

NO. **C-300358-2**

REV. 13
REV. 14

D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options

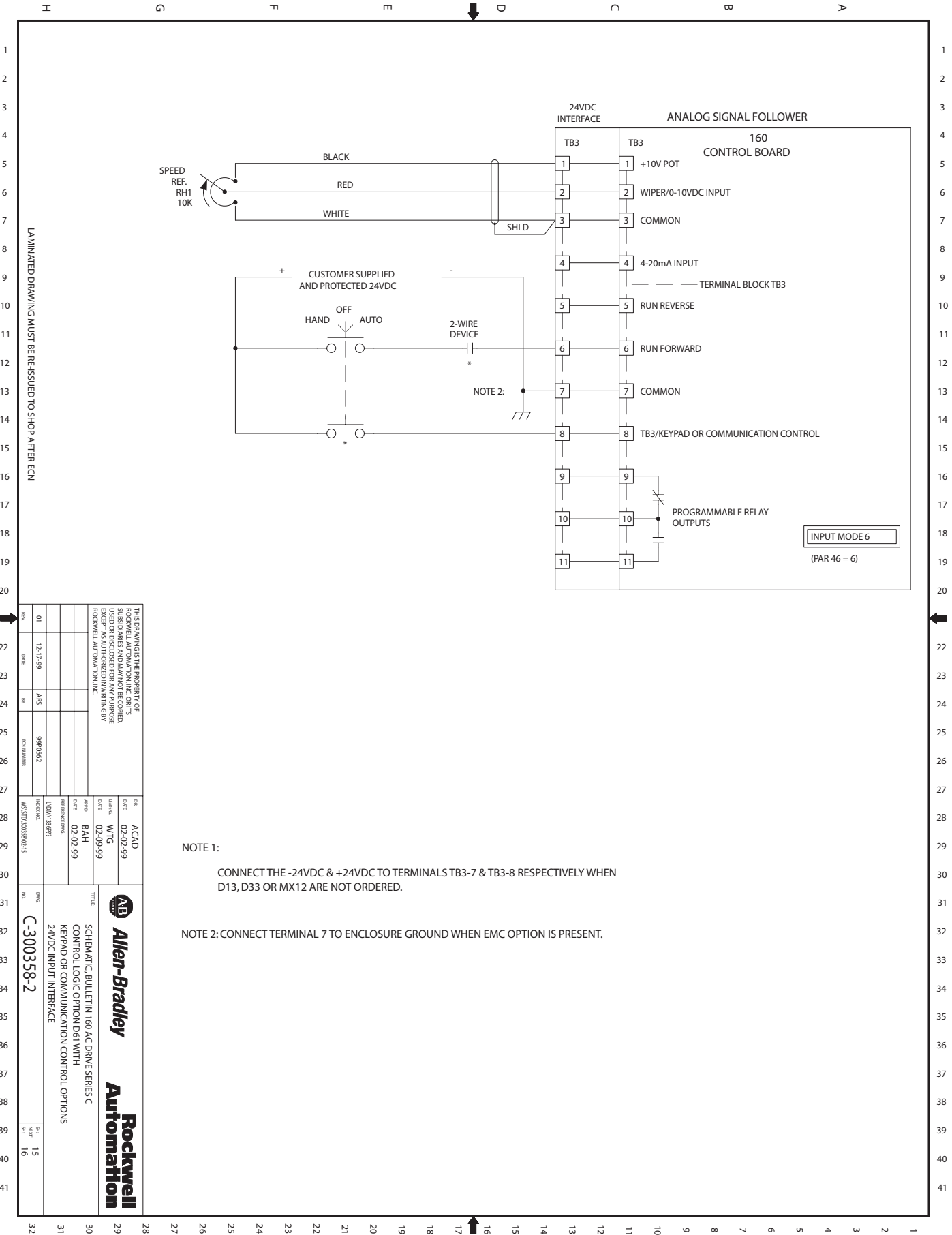


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REV	DATE	BY	FOR NUMBER
01	03-01-99	WFG	99P0R068
02	12-17-99	AHS	99P0R062
DATE: 02-02-99 TIME: 02-09-99		APPROV: BAH DATE: 02-02-99 REFERENCE: UDM132871	TITLE: Allen-Bradley Schematic Bulletin 160 AC Drive Series C Control Logic Option D61 Without Keypad or Communications Control Options 24VDC Input Interface
NO.	DATE	REV.	REV.
C-300358-2	14	14	15

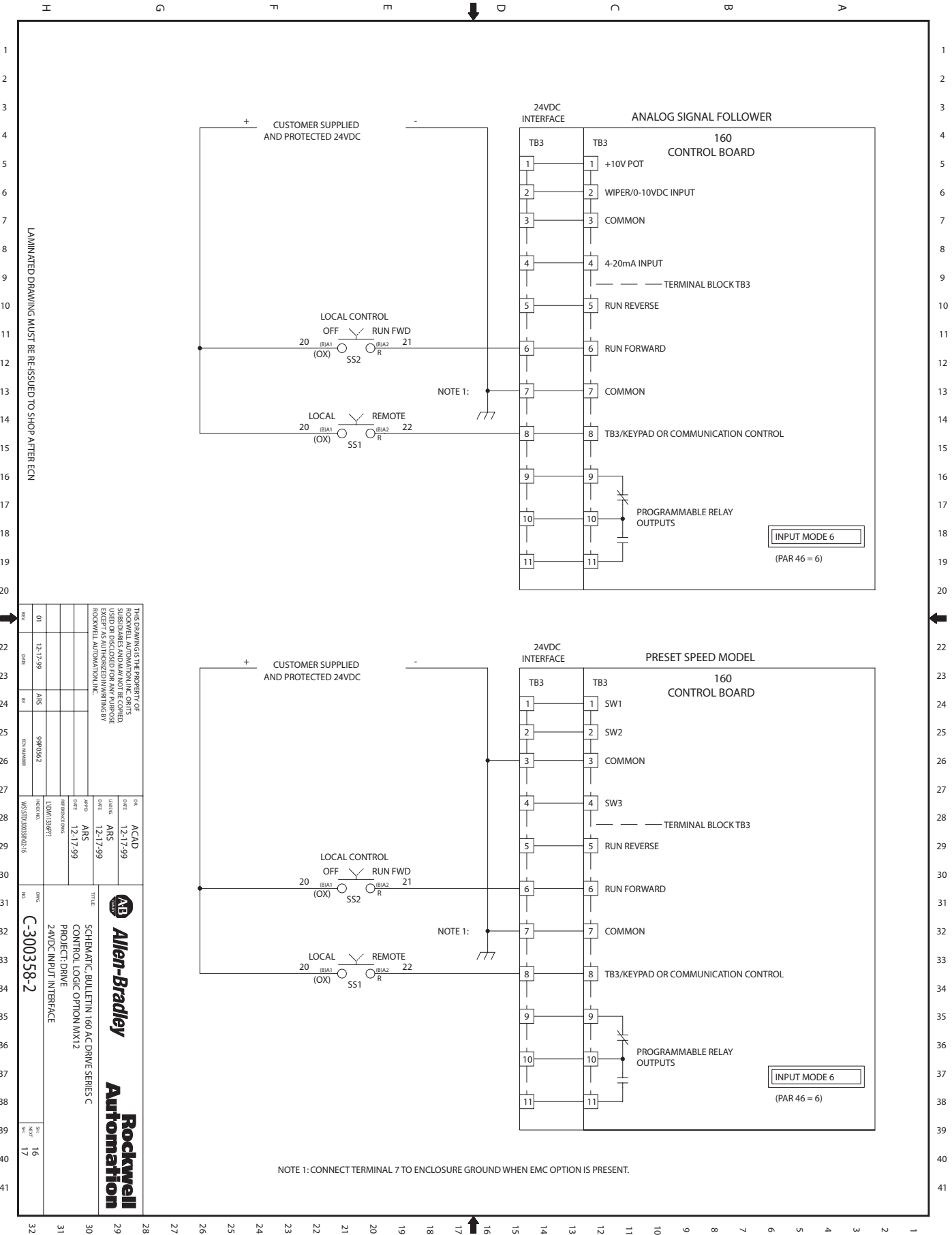
NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

D61 for Analog Signal Follower Drives With Keypad or Comm Control Options



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REV		DATE		BY		FOR NUMBER		DESCRIPTION	
01	12-17-99	AIS	99R0642	WVS5TD300358-02-13	ACAD	02-02-99	WTG	BAH	02-02-99
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Allen-Bradley Rockwell Automation									
TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D61 WITH KEYPAD OR COMMUNICATION CONTROL OPTIONS 24VDC INPUT INTERFACE PART NUMBER: C-300358-2 REV: 15 SHEET: 16									



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REV	DATE	BY	FOR NUMBER	DESCRIPTION
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03	12-17-99	ARS	99R00624	

REV	DATE	BY	FOR NUMBER	DESCRIPTION
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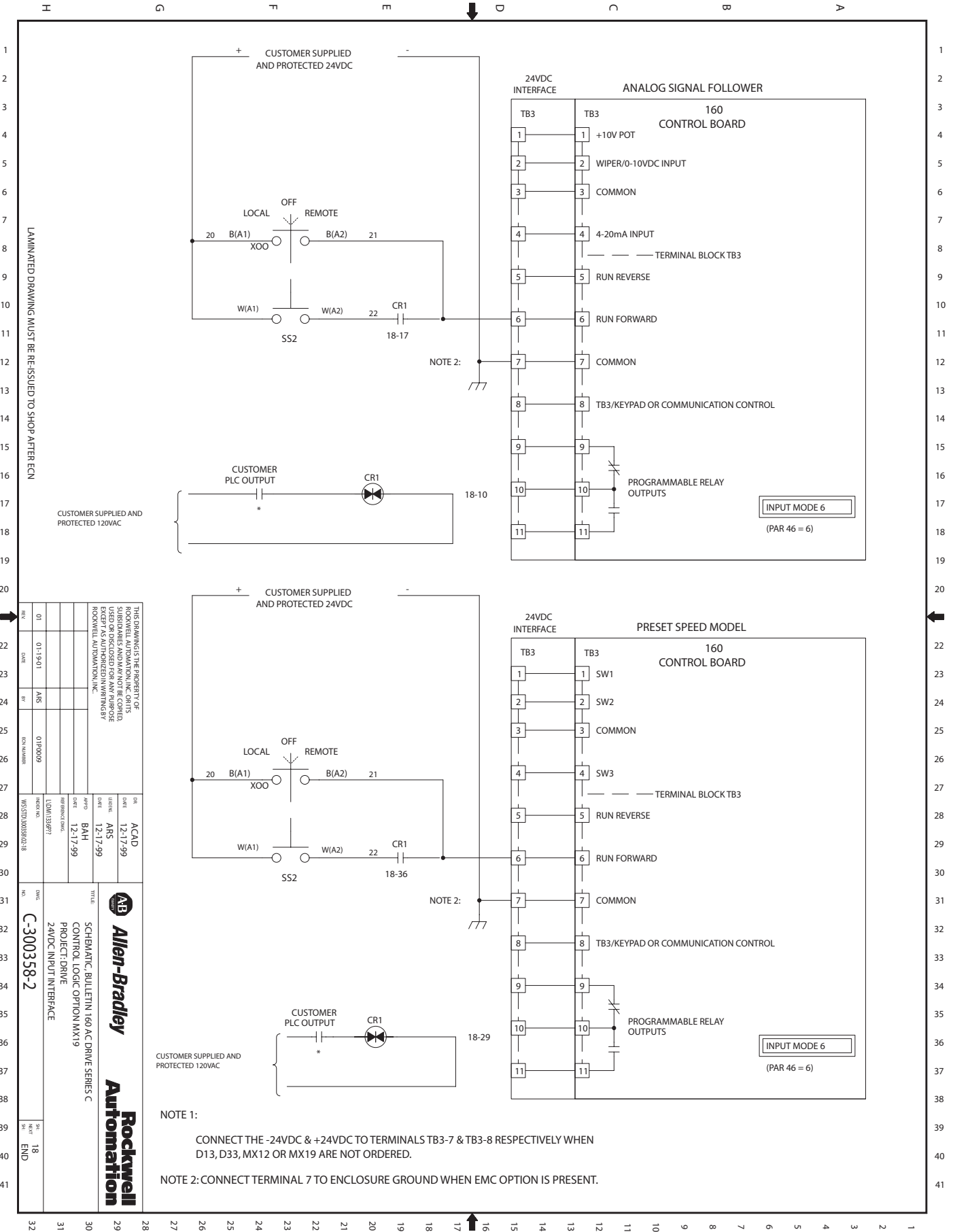
ACAD
 DATE: 12-17-99
 LDATE: ARS
 DATE: 12-17-99
 APRO: ARS
 DATE: 12-17-99
 REFERENCE DWG: UDM132821

AB Allen-Bradley Rockwell Automation

TITLE: SCHEMATIC, BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION MX12 24VDC INPUT INTERFACE

NO. **C-300358-2**

REV: 16
 SHEET: 17



Notes

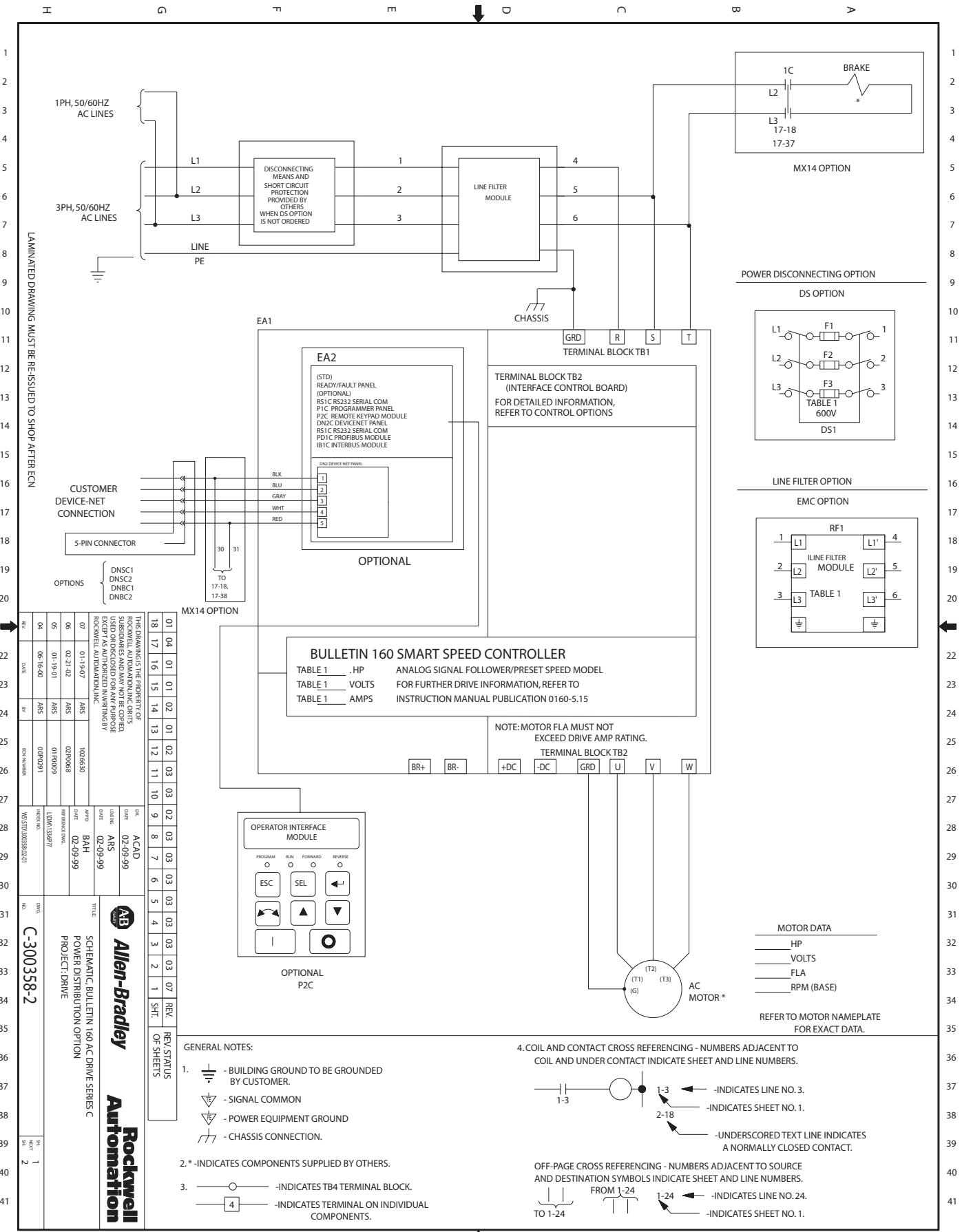
One Hundred Twenty Volt AC (120VAC) Control Interface for Analog and Preset Drives

Power Distribution and DS Option	48
Operator Interface Options DN2C, RS1C, P1C, RPAC, P2C, and Ready/Fault Panel	48
Enclosure Mounted DeviceNet Connector Options: DNSC1, DNSC2, DNBC1, DNBC2	48
Drive Ratings and DS Option Ratings	49

Product Control Logic Options

D13 Without P2C	50
D13 With P2C	51
D17	52
D32	53
D33	54
D13 and D32 Without P2C	55
D13 and D32 With P2C	56
D17 and D32	57
D32 and D33	58
D35 and D36 Without Keypad or Comm Control Options	59
D35 and D36 With Keypad or Comm Control Options	60
D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options . . .	61
D61 for Analog Signal Follower Drives With Keypad or Comm Control Options	62
MX12	63
MX14	48 and 64
MX19	65

Power Distribution and DS Option



01	04	01	01	02	01	02	03	03	02	03	03	03	03	03	03	07	REV.	STATUS	
18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	SH1	OF SHEETS
07	01-19-97	ARS	ARS	10/26/93	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE
06	02-21-02	ARS	ARS	02/06/06	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE
05	01-19-01	ARS	ARS	01/06/09	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE
04	06-16-00	ARS	ARS	06/02/01	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE	02-09-99	DATE
REV.	DATE	BY	CHKD	DESCRIPTION	REV.	DATE	BY	CHKD	DESCRIPTION	REV.	DATE	BY	CHKD	DESCRIPTION	REV.	DATE	BY	CHKD	DESCRIPTION
01	04	01	01	02	01	02	03	03	02	03	03	03	03	03	07	REV.	STATUS		
01	04	01	01	02	01	02	03	03	02	03	03	03	03	03	07	REV.	STATUS		
01	04	01	01	02	01	02	03	03	02	03	03	03	03	07	REV.	STATUS			

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ACAD
DATE: 02-09-99
BY: ARS
CHKD: ARS

BAH
DATE: 02-09-99
BY: BAH
CHKD: BAH

U2M132871
REV. 01

AB Allen-Bradley
Rockwell Automation

SCHMATIC: BULLETIN 160 AC DRIVE SERIES C POWER DISTRIBUTION OPTION PROJECT: DRIVE

C-300358-2

REV. 1

REV. 2

Drive Ratings and DS Option Ratings

TABLE 1

SINGLE PHASE						
DRIVE RATINGS			FUSE RATINGS (DS OPTION)			LINE FILTER MODULE
CATALOG NO.	VOLTAGE	FLA	TYPE	AMP	VOLT	CATALOG NUMBER
160S-AA02* (.5)	200-240V	2.3A	LPJ	6A	600V	160S-RFA-9-A
160S-AA03* (.75)	200-240V	3.0A	LPJ	10A	600V	160S-RFA-9-A
160S-AA04* (1)	200-240V	4.5A	LPJ	15A	600V	160S-RFA-9-A
160S-AA08* (2)	200-240V	8.0A	LPJ	30A	600V	160S-RFA-16-B

THREE PHASE						
DRIVE RATINGS			FUSE RATINGS (DS OPTION)			LINE FILTER MODULE
CATALOG NO. (HP)	VOLTAGE	FLA	TYPE	AMP	VOLT	CATALOG NUMBER
160-AA02* (.5)	200-240V	2.3A	LPJ	6A	600V	160-RFB-5-A
160-AA03* (.75)	200-240V	3.0A	LPJ	6A	600V	160-RFB-5-A
160-AA04* (1)	200-240V	4.5A	LPJ	10A	600V	160-RFB-5-A
160-AA08* (2)	200-240V	8.0A	LPJ	15A	600V	160-RFB-14-A
160-AA12* (3)	200-240V	12.0A	LPJ	20A	600V	160-RFB-14-A
160-AA18* (5)	200-240V	18.0A	LPJ	30A	600V	160-RFB-22-B
160-BA01* (.5)	380-460V	1.2A	LPJ	4A	600V	160-RFB-5-A
160-BA02* (.75)	380-460V	1.7A	LPJ	4A	600V	160-RFB-5-A
160-BA03* (1)	380-460V	2.3A	LPJ	5A	600V	160-RFB-5-A
160-BA04* (2)	380-460V	4.0A	LPJ	8A	600V	160-RFB-5-A
160-BA06* (3)	380-460V	6.0A	LPJ	15A	600V	160-RFB-14-A
160-BA10* (5)	380-460V	10.5A	LPJ	20A	600V	160-RFB-14-B

* - CATALOG NO. SUFFIX CAN CONTAIN "SF1" OR "PS1"

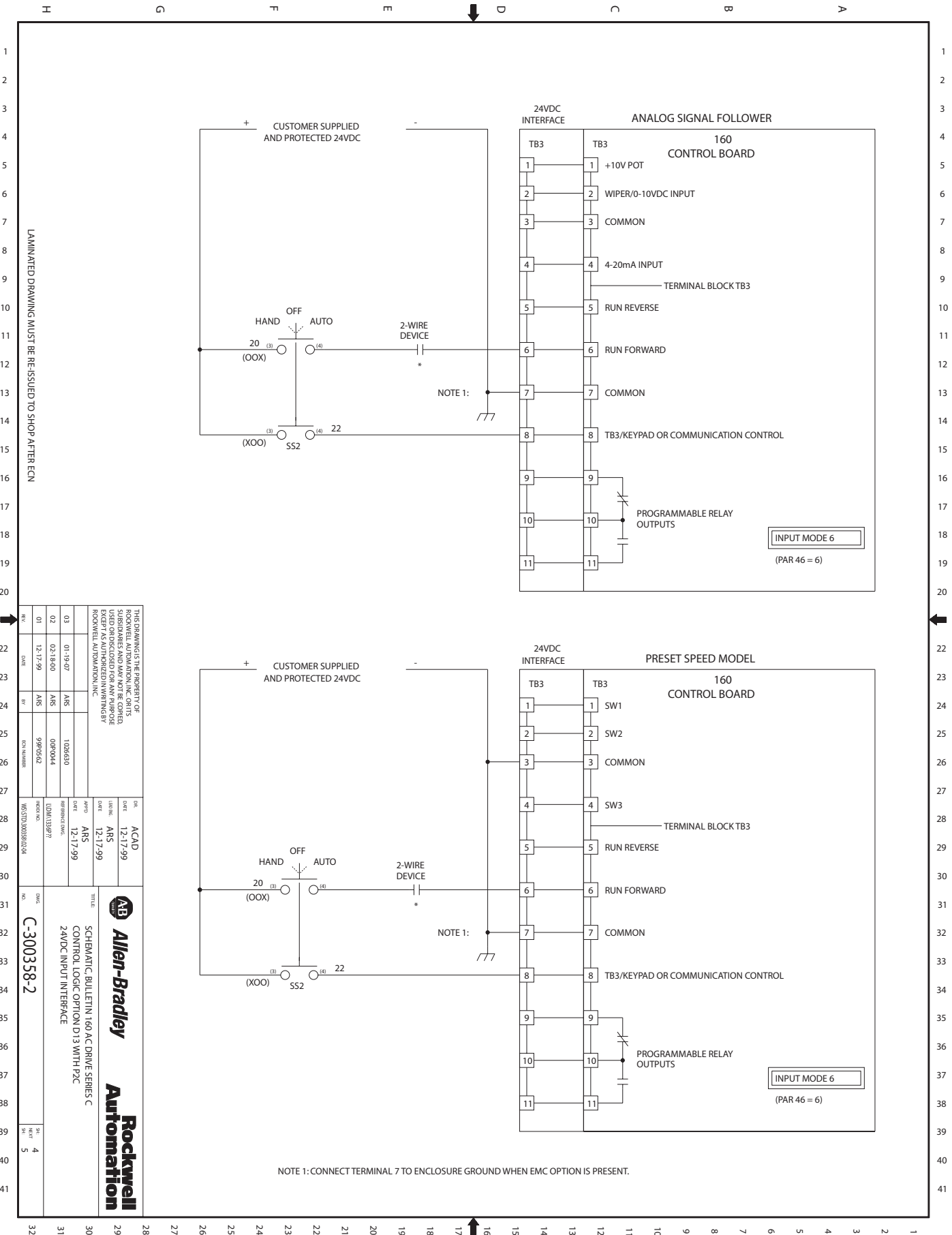
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NO. 01 DATE: 03-31-99 BY: WFG ECN NUMBER: 99P0068	NO. 02 DATE: 02-18-00 BY: ARS ECN NUMBER: 00P0044	NO. 03 DATE: 01-19-01 BY: ARS ECN NUMBER: 01P0009	NO. 04 DATE: 02-18-00 BY: ARS ECN NUMBER: 00P0044
NO. 05 DATE: 03-31-99 BY: WFG ECN NUMBER: 99P0068		NO. 06 DATE: 02-09-99 USER: ARS APPRO: BAH DATE: 02-09-99 REVISION: 1 REVISION: 2 REVISION: 3	NO. 07 DATE: 02-09-99 USER: ARS APPRO: BAH DATE: 02-09-99 REVISION: 1 REVISION: 2 REVISION: 3



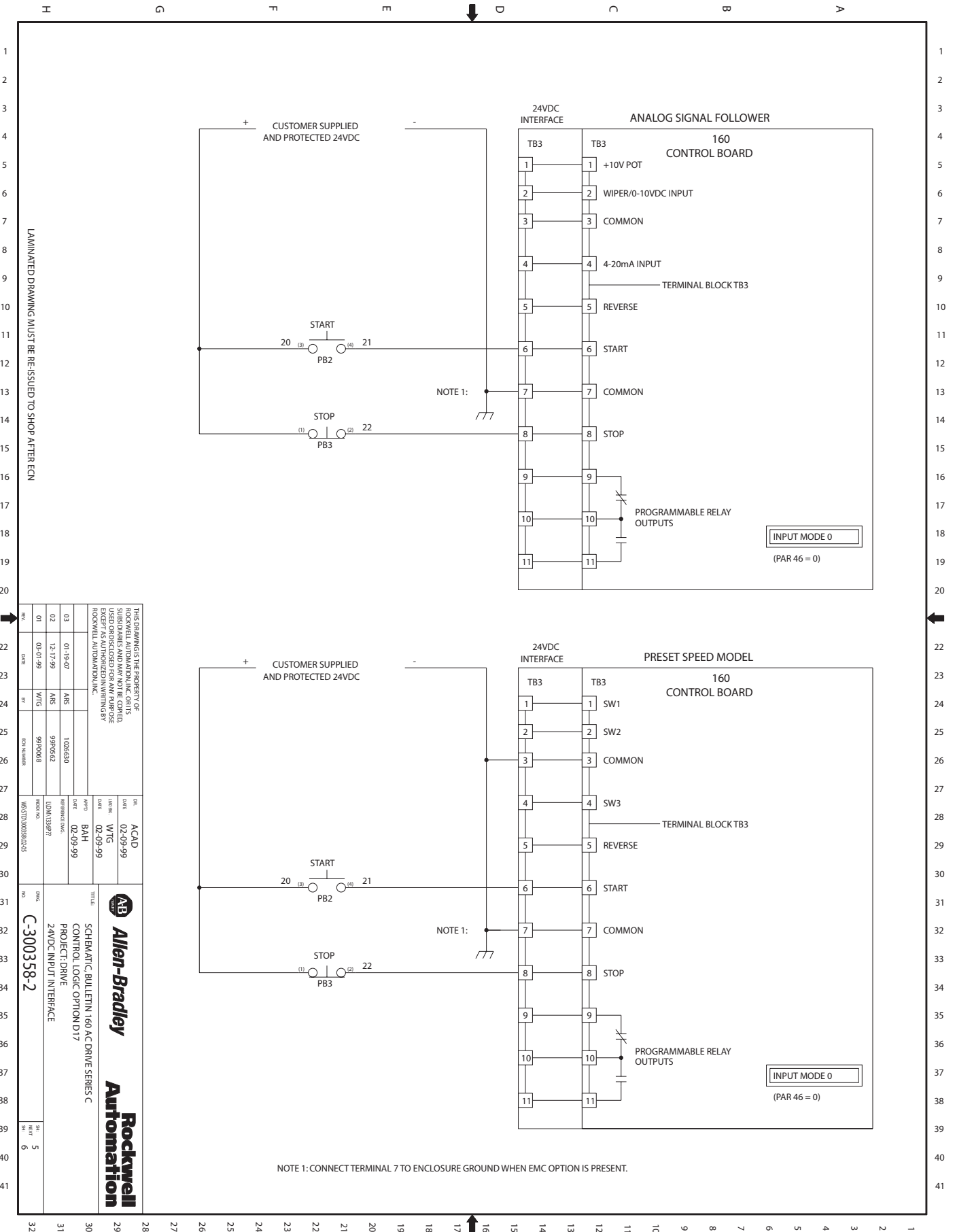
C-300358-2

D13 With P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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NO. 01 DATE: 12-17-99 BY: ARS ECN NUMBER: 99P0062	NO. 02 DATE: 02-18-00 BY: ARS ECN NUMBER: 00P0044	NO. 03 DATE: 01-19-07 BY: ARS ECN NUMBER: 1020630	NO. 04 DATE: 12-17-99 BY: ARS ECN NUMBER: 00P0044
NO. C-300358-2		NO. 4	NO. 5



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REV.	DATE	BY	RCN NUMBER
01	03-21-99	WTC	990P0068
02	12-17-99	ANS	990P0662
03	01-19-07	ANS	10206303

DATE	TIME	ACAD
02-09-99	WTC	
02-09-99	BAH	

WES STD 300358-02/5

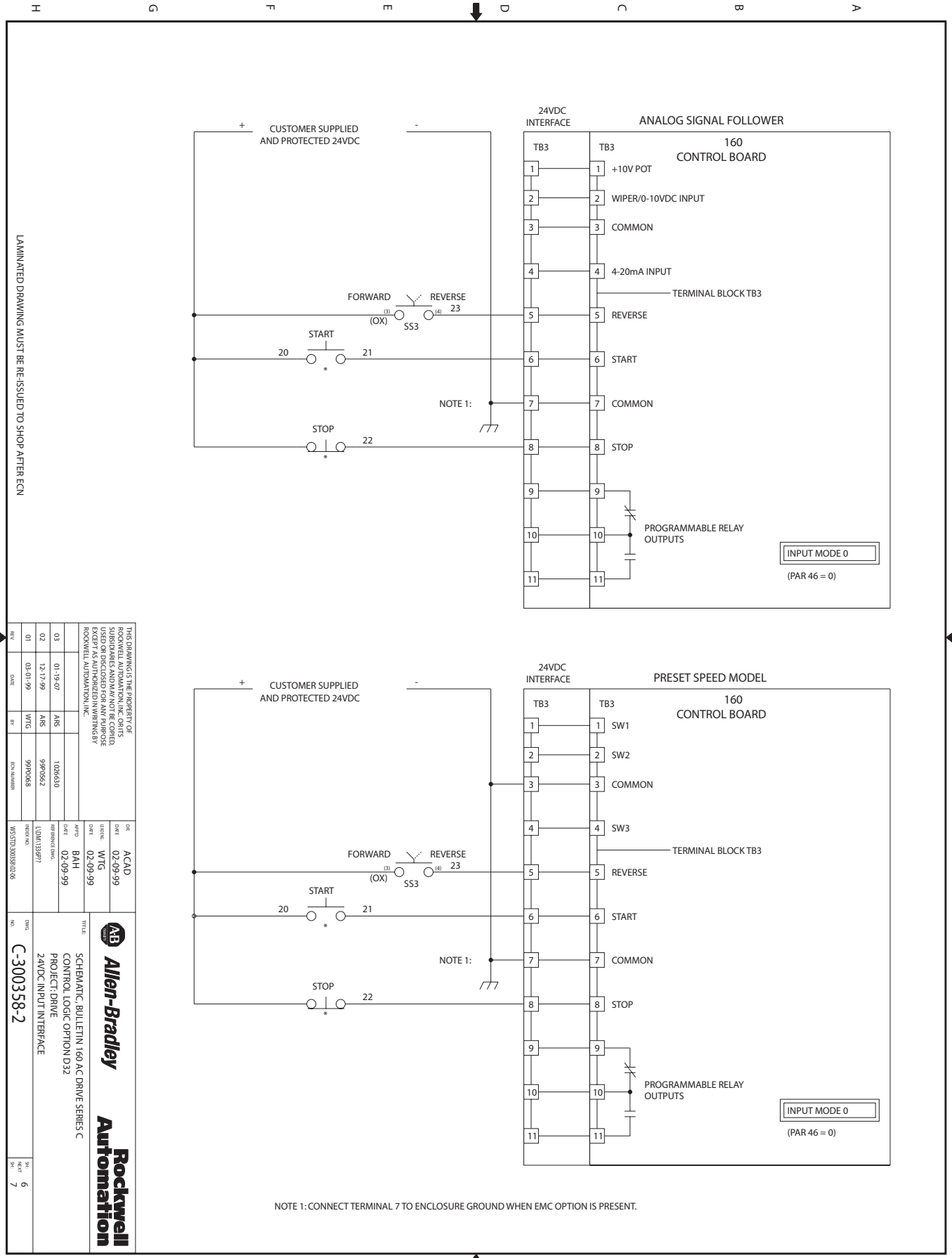
Allen-Bradley

Rockwell Automation

SCHWARTZ, BULLETTI 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D17 PROJECT DRIVE 24VDC INPUT INTERFACE

C-300358-2

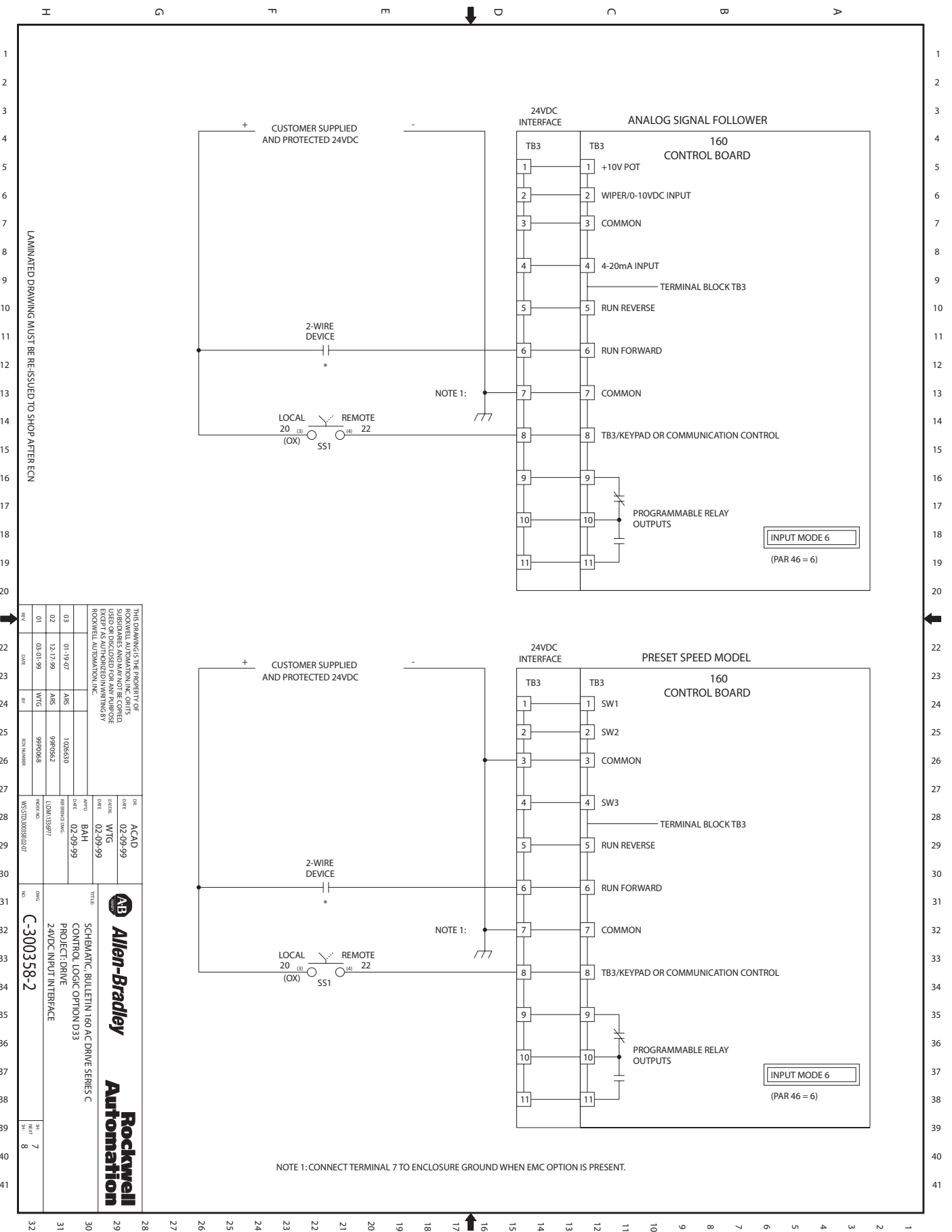
REV.	DATE	BY
5		
6		



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	APP'D	DESCRIPTION
01	03-31-99	WFG	99R0406	WVS	WVS512030038802/03
02	12-17-99	ANS	99R0662	BAH	REVISION 02-09-99
03	01-19-07	ANS	1026530	BAH	REVISION 02-09-99
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REV		DATE	BY	APP'D	DESCRIPTION
01	02-09-99	WFG	99R0406	WVS	WVS512030038802/03
02	12-17-99	ANS	99R0662	BAH	REVISION 02-09-99
03	01-19-07	ANS	1026530	BAH	REVISION 02-09-99
TITLE: Allen-Bradley SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D32 PROJECT DRIVE 24VDC INPUT INTERFACE Rockwell Automation C-300358-2 REV 6 SHEET 7					

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

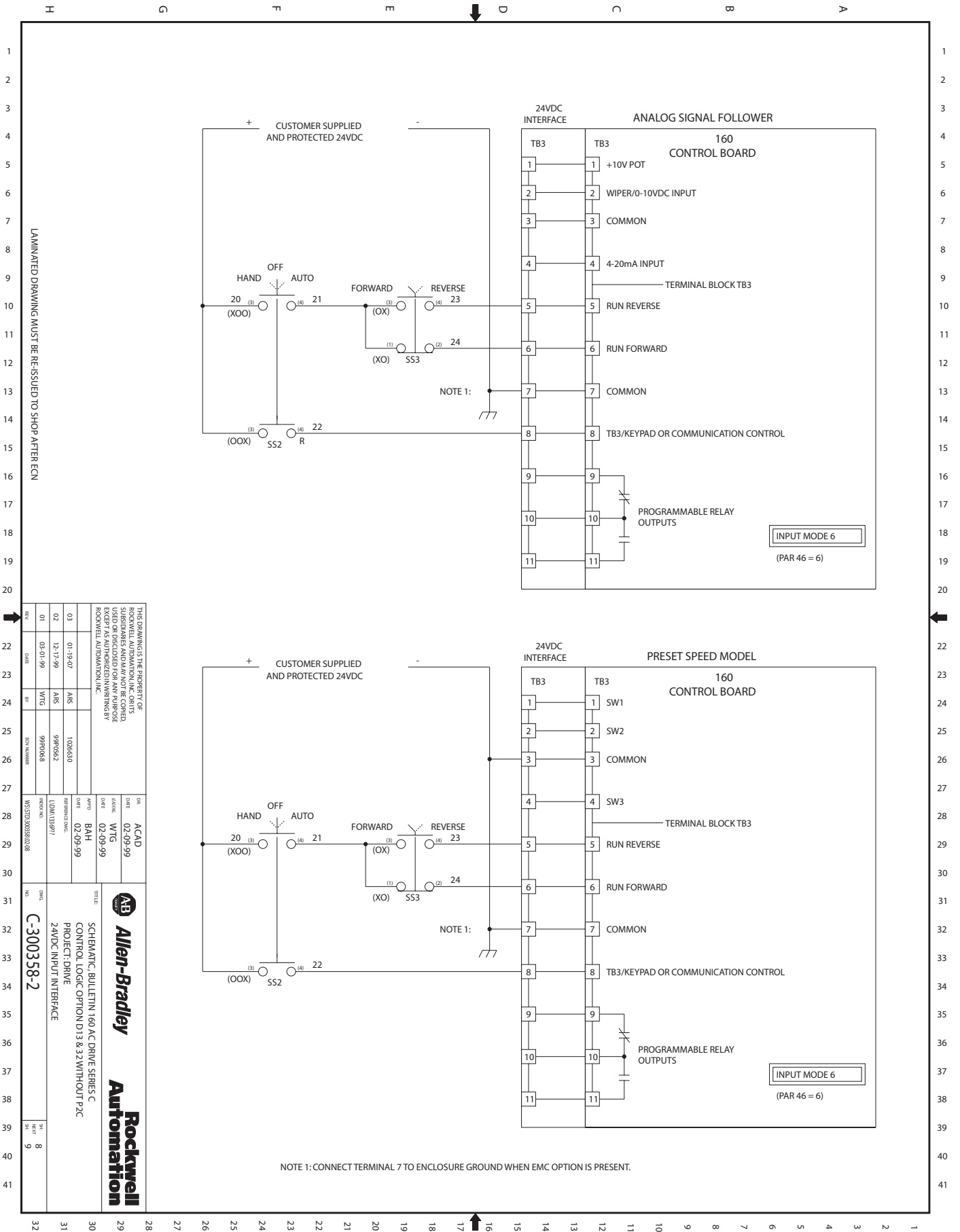


LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV	DATE	BY	FOR NUMBER
03	01-19-07	ANS	1026530
02	12-17-99	ANS	99P0062
01	09-01-99	WFG	99P0068
ACAD DATE 02-09-99			
WGTG DATE 02-09-99			
BAH DATE 02-09-99			
LDM DATE 02-09-99			
WVS DATE 03-08-02/07			
Allen-Bradley SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D33 PROJECT DRIVE 24VDC INPUT INTERFACE Rockwell Automation			
NO.	DATE	REV	NO.
C-300358-2		7	8

NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

D13 and D32 Without P2C



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV	DATE	BY	FOR NUMBER	REV	DATE	BY	DESCRIPTION
01	03-31-99	WJG	99P09068	01	01-19-07	ANS	1026330
02	12-17-99	WJG	99P09062	02	12-17-99	ANS	99P09062
03	01-19-07	ANS	1026330	03	02-09-99	WJG	02-09-99

REV	DATE	BY	DESCRIPTION
01	02-09-99	WJG	02-09-99
02	02-09-99	WJG	02-09-99

REV	DATE	BY	DESCRIPTION
01	02-09-99	WJG	02-09-99
02	02-09-99	WJG	02-09-99

Allen-Bradley

Rockwell Automation

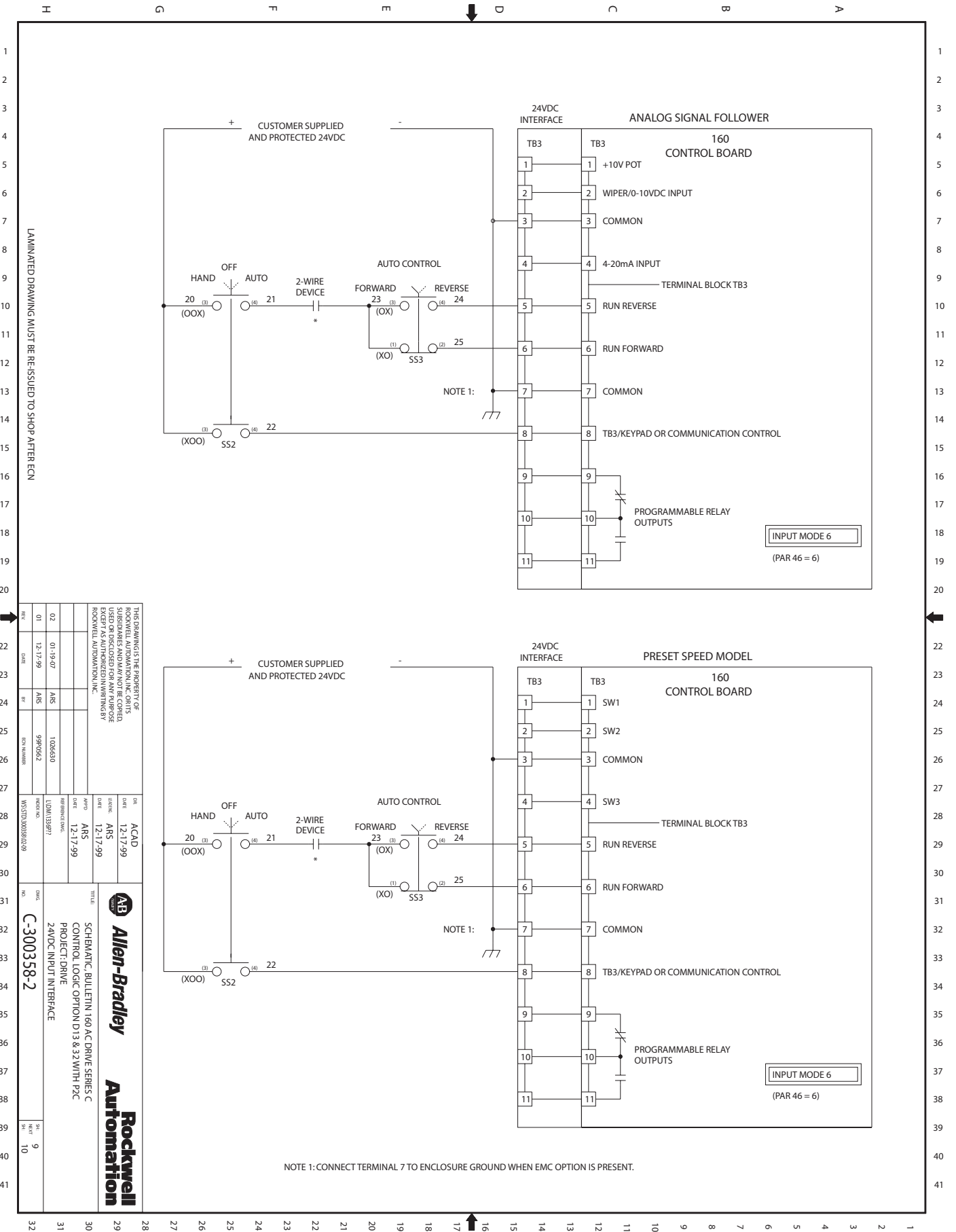
SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 & 32 WITHOUT P2C 24VDC INPUT INTERFACE

C-300358-2

REV 8

REV 9

D13 and D32 With P2C



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REV	DATE	BY	CHK	DESCRIPTION
01	12-17-99	ARS	ARS	99R0642
02	01-19-07	ARS	ARS	1006630

REV	DATE	BY	CHK	DESCRIPTION
01	12-17-99	ARS	ARS	99R0642
02	01-19-07	ARS	ARS	1006630

REV	DATE	BY	CHK	DESCRIPTION
01	12-17-99	ARS	ARS	99R0642
02	01-19-07	ARS	ARS	1006630

ACAD
 DATE: 12-17-99
 LDATE: ARS
 APPD: ARS
 DATE: 12-17-99
 REFERENCE DWG: UDM1292871

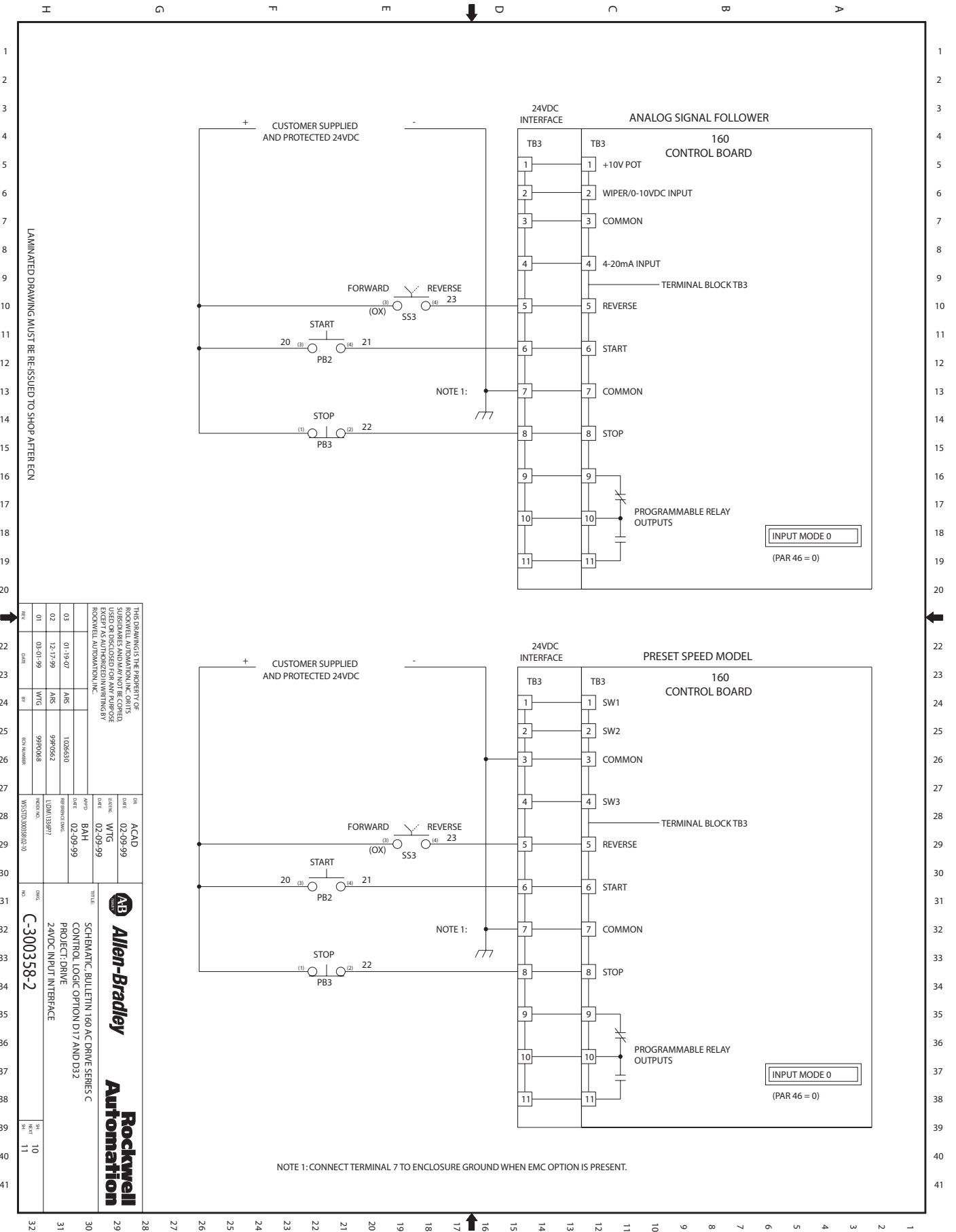
AB Allen-Bradley Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D13 & 32 WITH P2C 24VDC INPUT INTERFACE

NO. **C-300358-2**

REV: 9
 DATE: 01-19-07

D17 and D32



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	APP'D	CHK'D	DESCRIPTION
01	02-01-99	WJG	99R0406		WVS	300358-01-10
02	12-17-99	ANS	99R0662		WJG	
03	01-19-07	ANS	1006530		WJG	

DATE	02-09-99	ACAD
DATE	02-09-99	WJG
DATE	02-09-99	BAH
DATE	02-09-99	WVS

REV	DATE	BY	APP'D	CHK'D	DESCRIPTION
10					
11					

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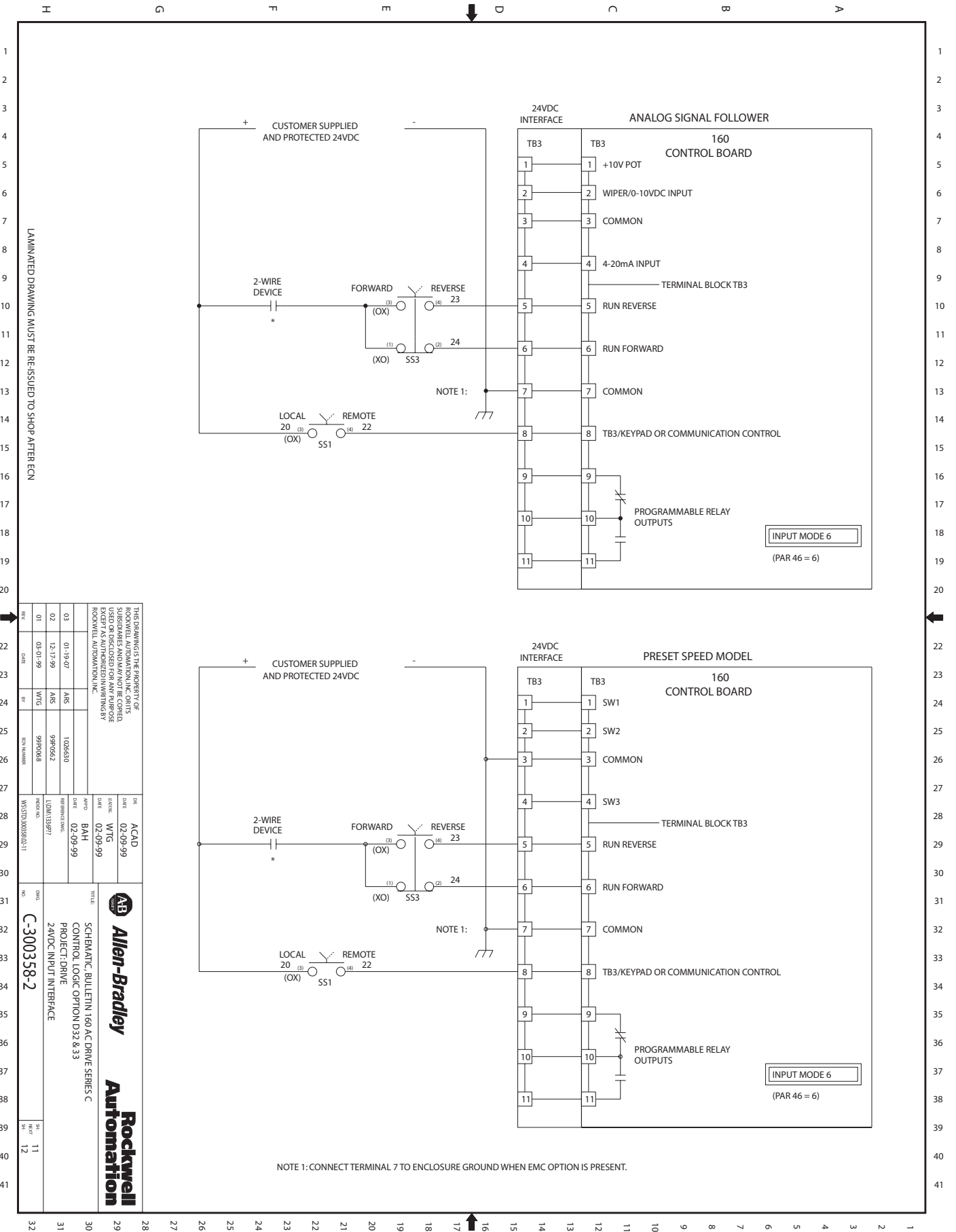
Allen-Bradley

Rockwell Automation

SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D17 AND D32 24VDC INPUT INTERFACE

C-300358-2

D32 and D33



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	APP'D	DESCRIPTION
01	02-01-99	WJG	99R0406		REVISED FOR REVISED PROJECT
02	12-17-99	ANS	99R0662		REVISED FOR REVISED PROJECT
03	01-19-07	ANS	1026530		REVISED FOR REVISED PROJECT

DATE	02-09-99	DATE	02-09-99
DATE	02-09-99	DATE	02-09-99
DATE	02-09-99	DATE	02-09-99

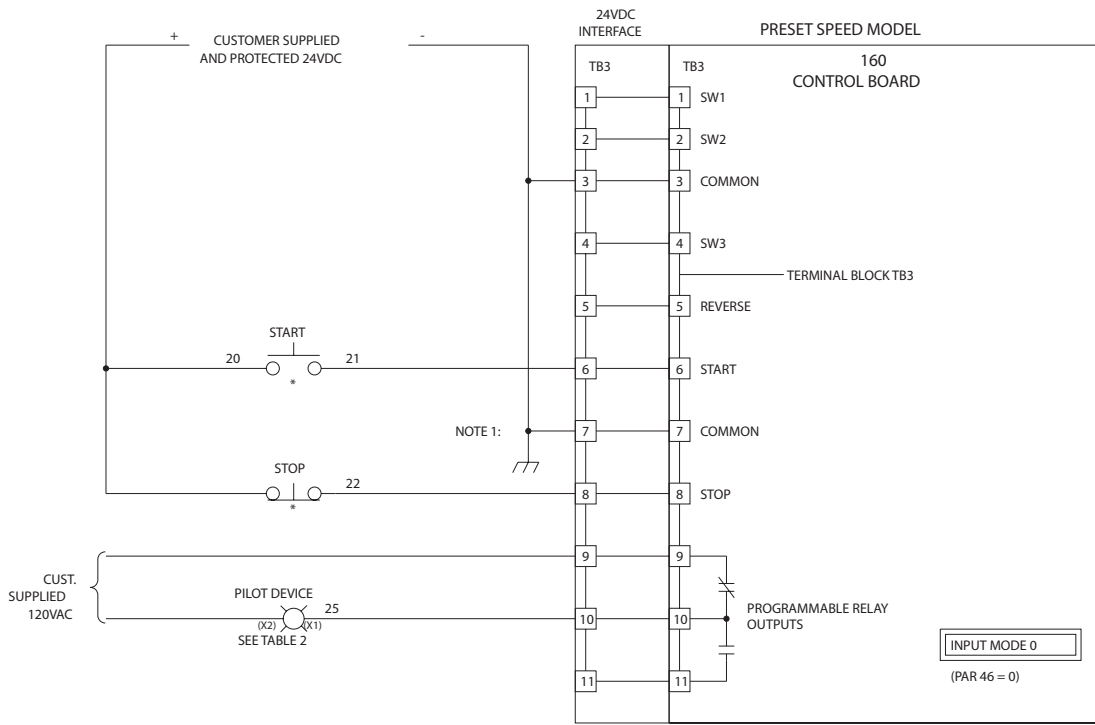
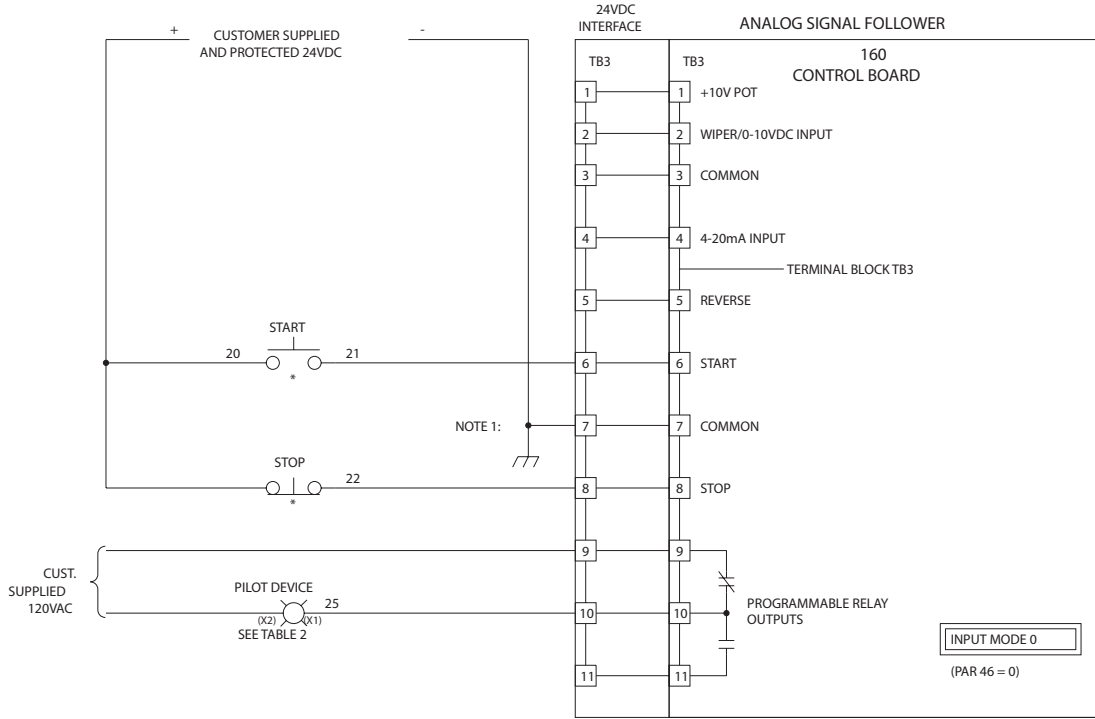
REV	DATE	BY	APP'D	DESCRIPTION
01	02-09-99	WJG	99R0406	REVISED FOR REVISED PROJECT
02	12-17-99	ANS	99R0662	REVISED FOR REVISED PROJECT
03	01-19-07	ANS	1026530	REVISED FOR REVISED PROJECT

REV	DATE	BY	APP'D	DESCRIPTION
01	02-09-99	WJG	99R0406	REVISED FOR REVISED PROJECT
02	12-17-99	ANS	99R0662	REVISED FOR REVISED PROJECT
03	01-19-07	ANS	1026530	REVISED FOR REVISED PROJECT

REV	DATE	BY	APP'D	DESCRIPTION
01	02-09-99	WJG	99R0406	REVISED FOR REVISED PROJECT
02	12-17-99	ANS	99R0662	REVISED FOR REVISED PROJECT
03	01-19-07	ANS	1026530	REVISED FOR REVISED PROJECT

D35 and D36 Without Keypad or Comm Control Options

OPTION	SYMBOL	COLOR	LEGEND	PAR 47 SETTING
D35	PL3	WHITE	DRIVE RUN	2
D36	PL4	RED	DRIVE FAULT	0 (DEFAULT)



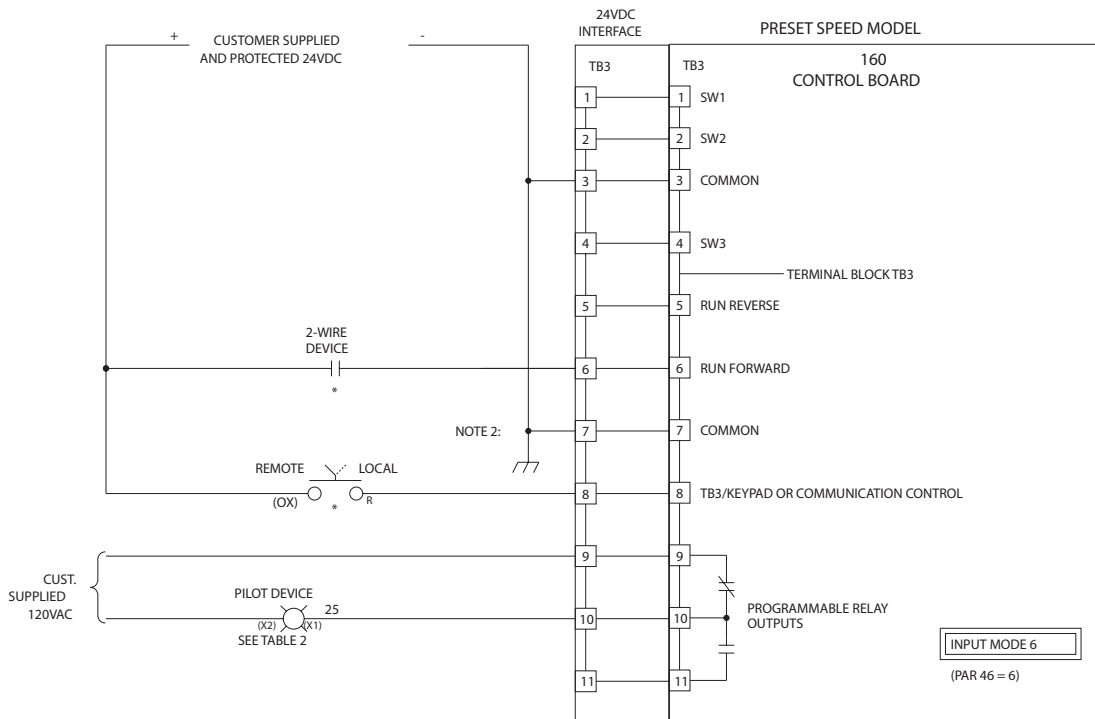
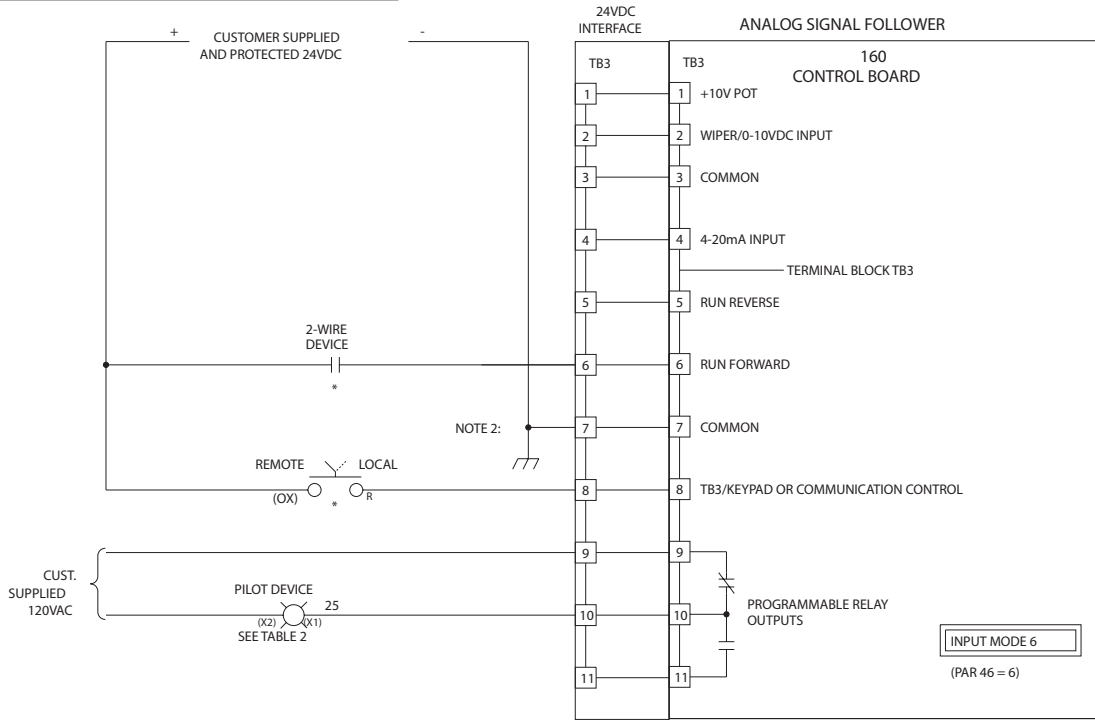
NOTE 1: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	CHK	DESCRIPTION
01	03-01-99	WJG			FOR NUMBER
02	12-17-99	AHS			99P0962
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DATE	02-09-99	DATE	02-09-99	DATE	02-09-99
ACAD	WJG	WJG	BAH	WJG	WJG
TITLE: SCHEMATIC, BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D35 & 36 WITHOUT KEYPAD OR COMMUNICATION CONTROL OPTIONS 24VDC INPUT INTERFACE					
NO.	DATE	REV	NO.	DATE	REV
C-300358-2	12	13			

D35 and D36 With Keypad or Comm Control Options

OPTION	SYMBOL	COLOR	LEGEND	PAR 47 SETTING
D35	PL3	WHITE	DRIVE RUN	2
D36	PL4	RED	DRIVE FAULT	0 (DEFAULT)



NOTE 1: CONNECT THE -24VDC & +24VDC TO TERMINALS TB3-7 & TB3-8 RESPECTIVELY WHEN D13, D33 OR MX12 ARE NOT ORDERED.

NOTE 2: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.

LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	12-17-99	ARS	99R00624	

REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	12-17-99	ARS	99R00624	

REV	DATE	BY	FOR NUMBER	DESCRIPTION
01	12-17-99	ARS	99R00624	

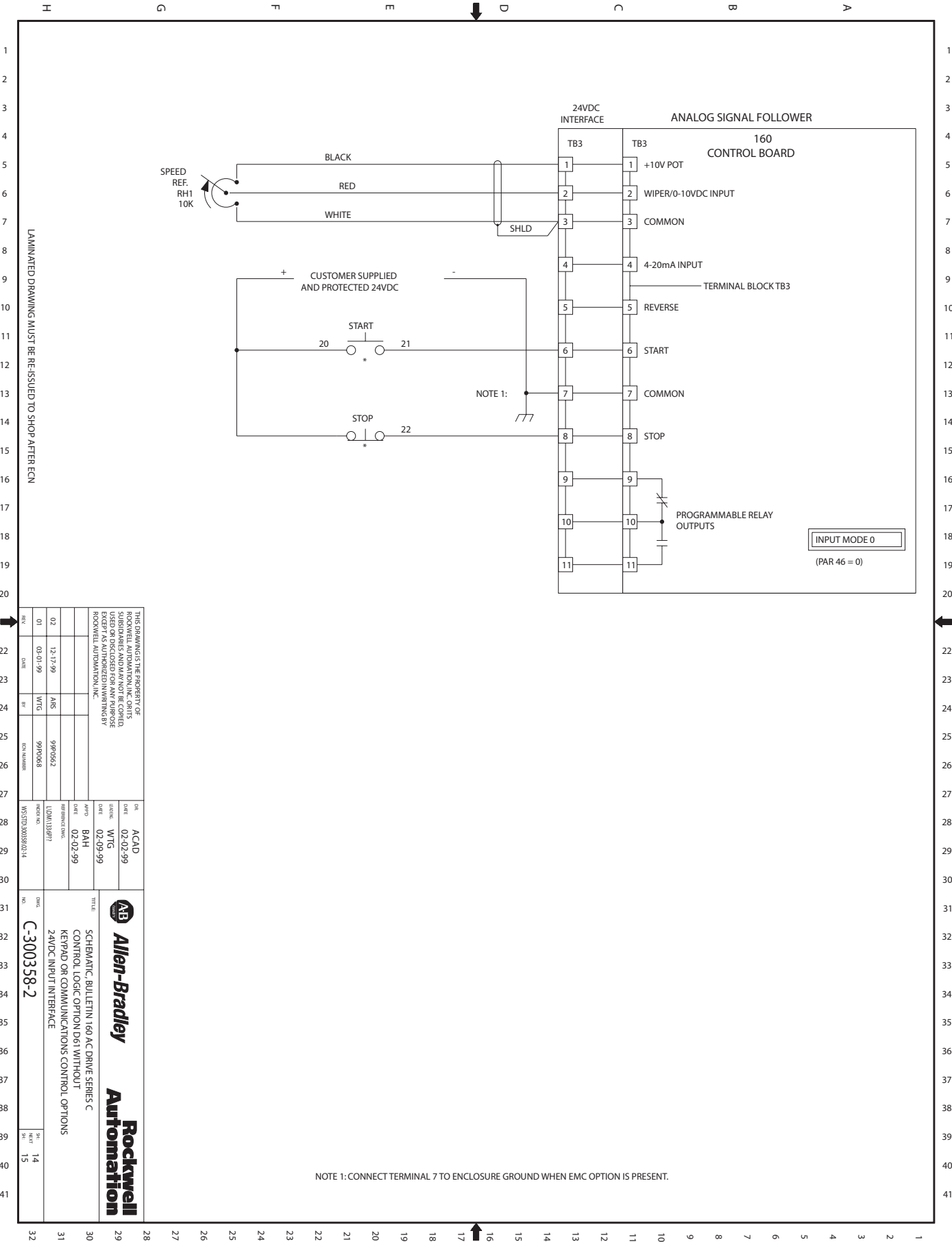
Allen-Bradley
Rockwell Automation

TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION D35 & 36 WITH KEYPAD OR COMMUNICATION CONTROL OPTIONS 24VDC INPUT INTERFACE

NO. **C-300358-2**

REV. 13
REV. 14

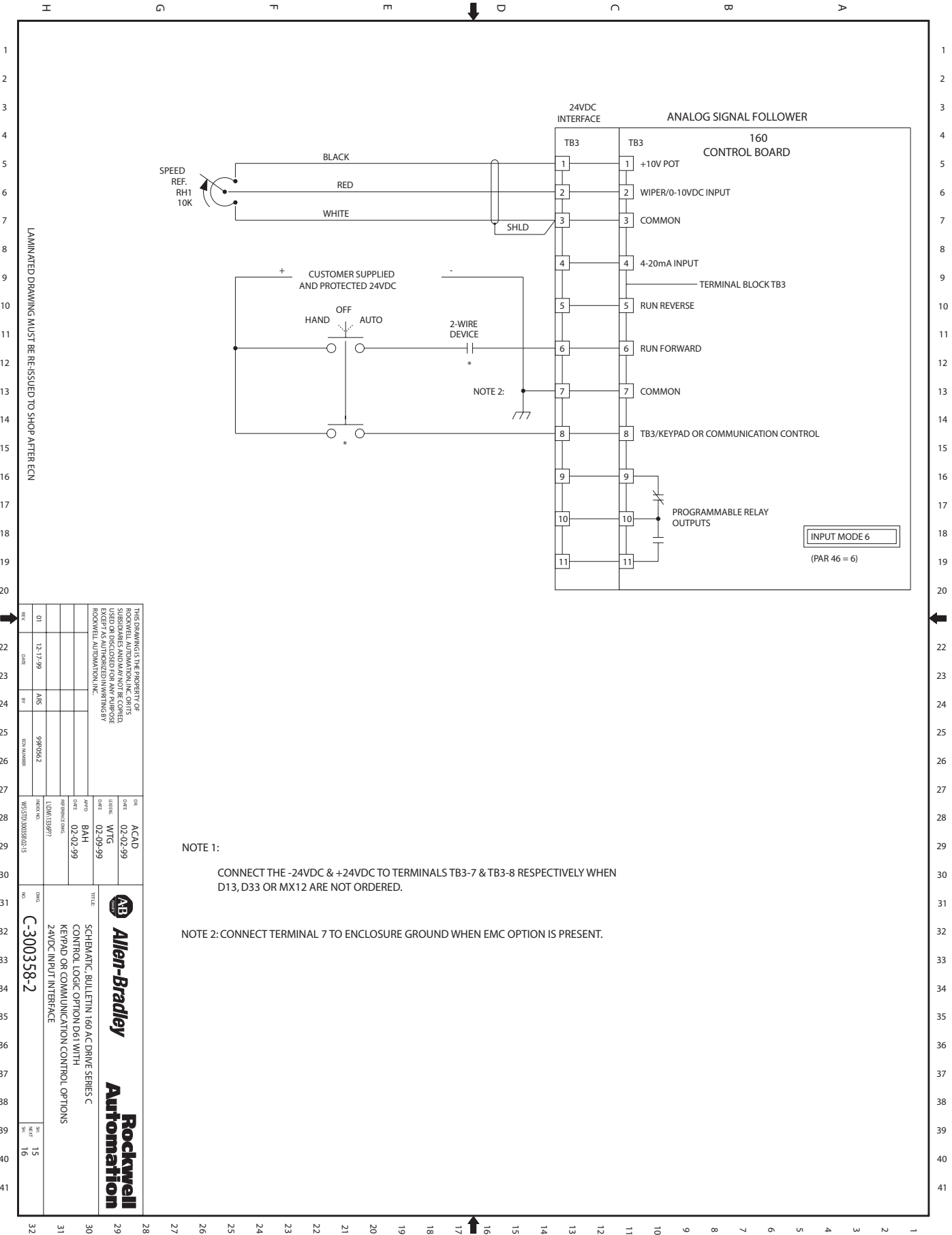
D61 for Analog Signal Follower Drives Without Keypad or Comm Control Options



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE		BY		FOR NUMBER	
01	03-01-99	WFG		99P0662	WFS5TD300358-02-14		
02	12-17-99	AHS		99P0662			
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DATE	02-02-99	ACAD					
DATE	02-09-99	WFG					
DATE	02-02-99	BAH					
DATE	02-02-99	WFG					
TITLE		Allen-Bradley Rockwell Automation					
NO.		C-300358-2					
REV	14						
REV	15						

D61 for Analog Signal Follower Drives With Keypad or Comm Control Options



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01	12-17-99	AIS	99R0642	01	02-02-99	BAH	15M132821

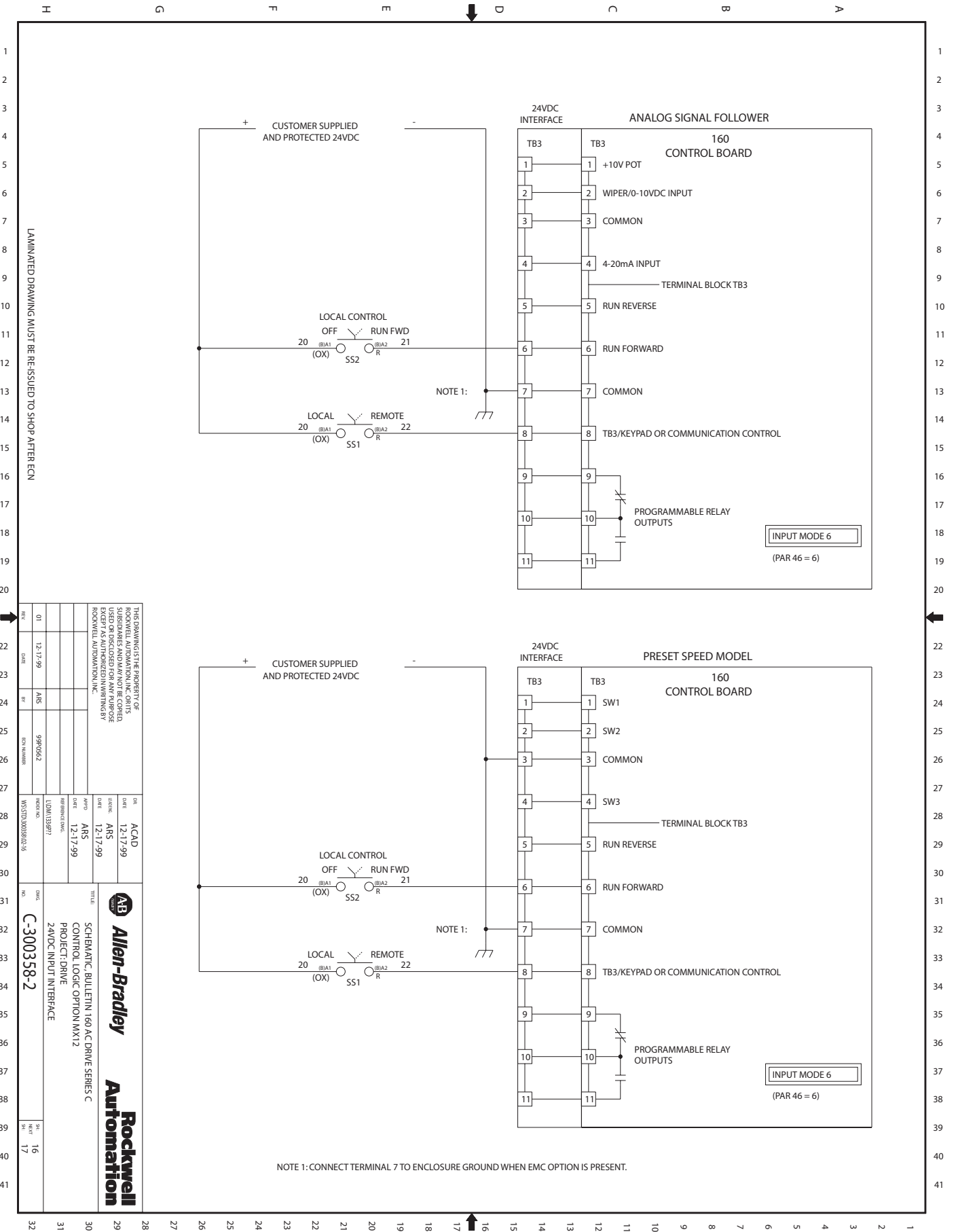
REV	DATE	BY	FOR NUMBER
01	02-02-99	WTS	300358-01-15

REV	DATE	BY	FOR NUMBER
01	02-02-99	WTS	300358-01-15

REV	DATE	BY	FOR NUMBER
01	02-02-99	WTS	300358-01-15

NOTE 1:
CONNECT THE -24VDC & +24VDC TO TERMINALS TB3-7 & TB3-8 RESPECTIVELY WHEN D13, D33 OR MX12 ARE NOT ORDERED.

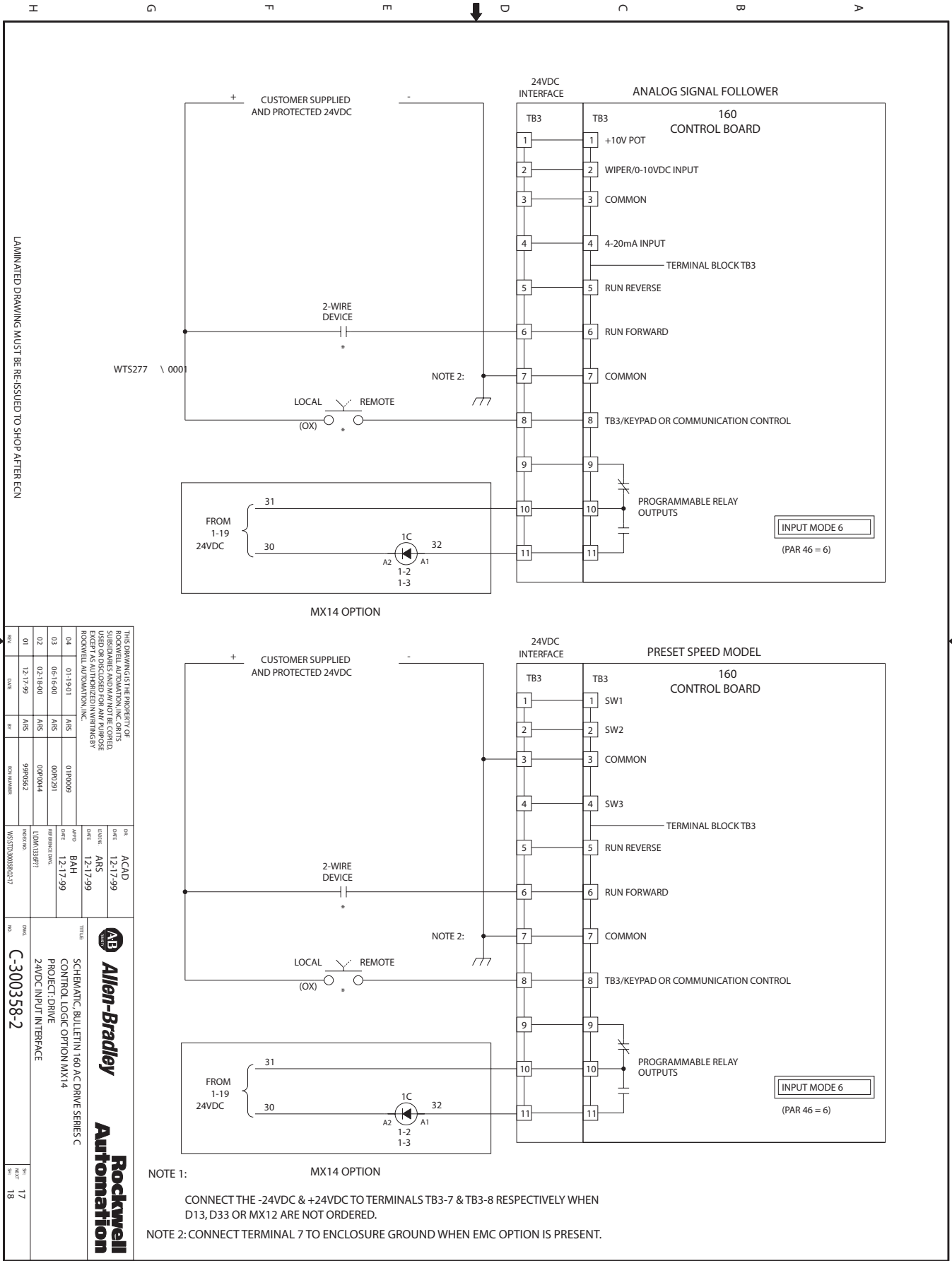
NOTE 2: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.



LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

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REV	DATE	BY	FOR NUMBER	DESCRIPTION																								
01	12-17-99	ARS	99R00624																									
<table border="1"> <tr> <td>REV</td> <td>DATE</td> <td>BY</td> <td>DESCRIPTION</td> </tr> <tr> <td></td> <td>12-17-99</td> <td>ARS</td> <td>ACAD</td> </tr> <tr> <td></td> <td>12-17-99</td> <td>ARS</td> <td>LOGIC</td> </tr> <tr> <td></td> <td>12-17-99</td> <td>ARS</td> <td>APP'D</td> </tr> <tr> <td></td> <td>12-17-99</td> <td>ARS</td> <td>REFINISHED DWG</td> </tr> <tr> <td></td> <td>12-17-99</td> <td>ARS</td> <td>REVISED DWG</td> </tr> </table>					REV	DATE	BY	DESCRIPTION		12-17-99	ARS	ACAD		12-17-99	ARS	LOGIC		12-17-99	ARS	APP'D		12-17-99	ARS	REFINISHED DWG		12-17-99	ARS	REVISED DWG
REV	DATE	BY	DESCRIPTION																									
	12-17-99	ARS	ACAD																									
	12-17-99	ARS	LOGIC																									
	12-17-99	ARS	APP'D																									
	12-17-99	ARS	REFINISHED DWG																									
	12-17-99	ARS	REVISED DWG																									
<p>Allen-Bradley</p> <p>Rockwell Automation</p>				<p>DATE: 12-17-99</p> <p>LOGIC: ARS</p> <p>APP'D: ARS</p> <p>DATE: 12-17-99</p> <p>REFINISHED DWG: UDM1328271</p> <p>REVISED DWG: WVS5TD300358-02-13</p>																								
<p>TITLE: Allen-Bradley</p> <p>SCHMATIC, BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION MX12 PROJECT DRIVE 24VDC INPUT INTERFACE</p>				<p>NO. C-300358-2</p> <p>REV: 16</p> <p>REV: 17</p>																								



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REV	DATE	BY	FOR NUMBER
01	12-17-99	ARS	99R00642
02	02-18-00	ARS	00P0044
03	06-16-00	ARS	00P0291
04	01-19-01	ARS	01P0009

REV	DATE	BY	FOR NUMBER
01	12-17-99	ARS	99R00642
02	02-18-00	ARS	00P0044
03	06-16-00	ARS	00P0291
04	01-19-01	ARS	01P0009

Allen-Bradley
Rockwell Automation

ACAD
DATE: 12-17-99
ENGINE: ARS

BAH
DATE: 12-17-99
REFERENCE: UDM132821

WTS277 3008380217

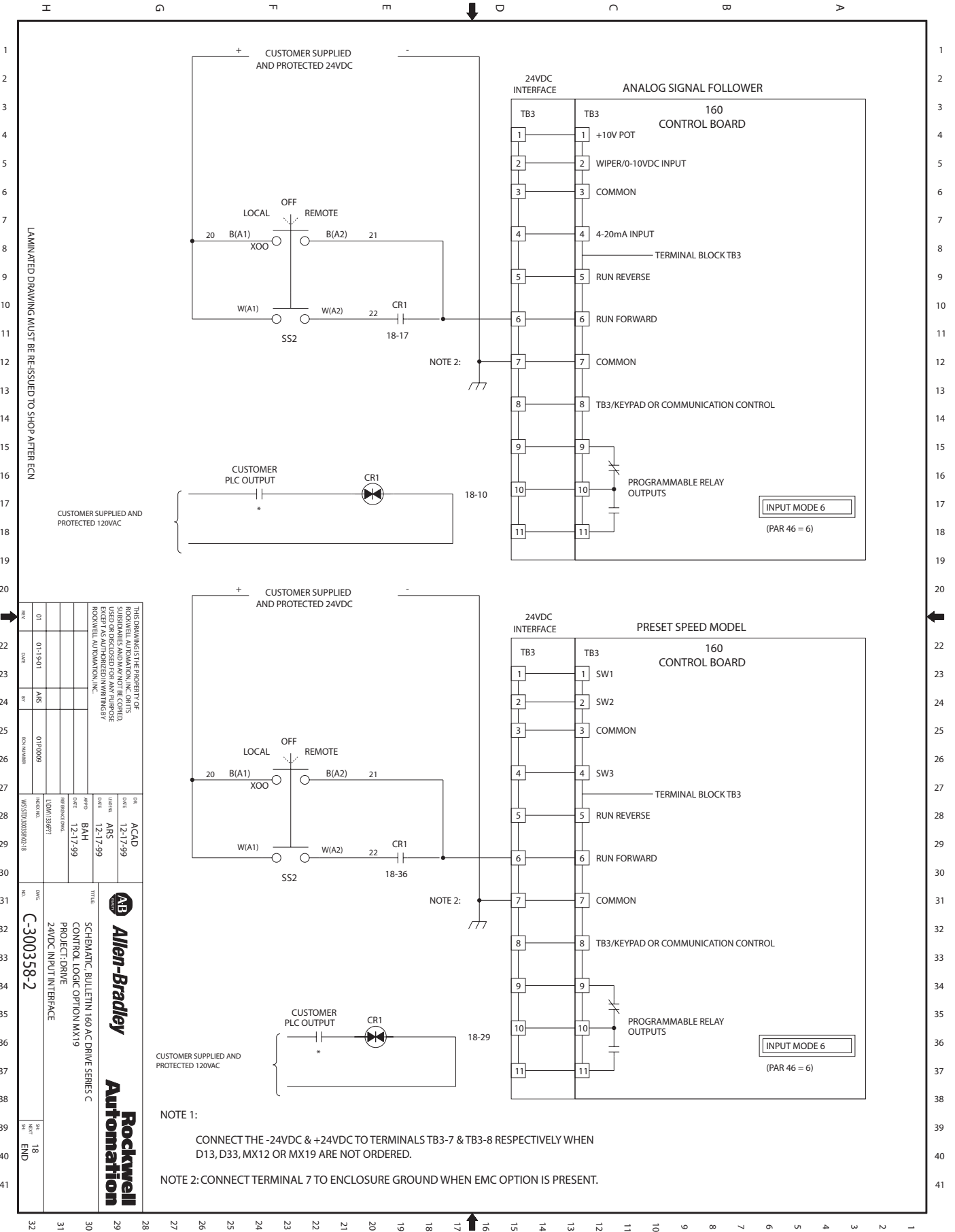
SCHMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION MX14 24VDC INPUT INTERFACE

NO. C-300358-2

REV. 17
REV. 18

NOTE 1: MX14 OPTION
CONNECT THE -24VDC & +24VDC TO TERMINALS TB3-7 & TB3-8 RESPECTIVELY WHEN D13, D33 OR MX12 ARE NOT ORDERED.

NOTE 2: CONNECT TERMINAL 7 TO ENCLOSURE GROUND WHEN EMC OPTION IS PRESENT.




LAMINATED DRAWING MUST BE RE-ISSUED TO SHOP AFTER ECN

REV		DATE	BY	CHK	DESCRIPTION
01	01-19-91	ARS	01P/909		REVISED FOR REVISED
<p>THIS DRAWING IS THE PROPERTY OF ROCKWELL AUTOMATION, INC. OR ITS SUBSIDIARIES AND MAY NOT BE COPIED, USED OR DISCLOSED FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF ROCKWELL AUTOMATION, INC.</p>					
DATE	DATE	DATE	DATE	DATE	DATE
12-17-99	12-17-99	12-17-99	12-17-99	12-17-99	12-17-99
DATE	DATE	DATE	DATE	DATE	DATE
12-17-99	12-17-99	12-17-99	12-17-99	12-17-99	12-17-99
<p>Allen-Bradley</p> <p>Rockwell Automation</p>					
<p>TITLE: SCHEMATIC BULLETIN 160 AC DRIVE SERIES C CONTROL LOGIC OPTION MX19 PROJECT DRIVE 24VDC INPUT INTERFACE</p>					
NO.	DATE	NO.	DATE	NO.	DATE
C-300358-2	18	END	18	END	18

Material List for Spare Parts

H		G		F		E		D		C		B		A	
REPLACEMENT COMPONENTS LIST															
SYM.	DESCRIPTION	A-B PART NO.		MANUFACTURER/PART NO.											
EA1	DRIVE	N/A		REFER TO C-300316-12 FOR DRIVE CATALOG NO.											
F1-F3	FUSES	N/A		BUSSMAN/LPJ-1*SP (NOTE 1)											
DS	DISCONNECT	N/A		A-B/194R-NJ030P3											
RF1	LINE FILTER	N/A		REFER TO C-300356-2, PAGE 2, TABLE 1 FOR CATALOG NO.											
P1	PROG. KEYPAD	N/A		A-B/160-P1											
P2	OP INTRF MOD	N/A		A-B/160-P2											
DN2	DEVICENET MOD	N/A		A-B/160-DN2											
RS1	SERIAL COMM. MOD.	N/A		A-B/160-RS1											
DMPS1	24V PRESET INTERFACE	N/A		A-B/160-DM-PS1											
DMSF1	24V ANALOG INTERFACE	N/A		A-B/160-DM-SF1											
LTN120	115V INTERFACE (SF)	N/A		LEAF TECHNOLOGY/LT160-SF1-120VAC											
LTN120	115V INTERFACE (PS)	N/A		LEAF TECHNOLOGY/LT160-PS1-120VAC											
SS1	LOCAL/REMOTE SS	N/A		A-B/800FP-SM22PX10											
SS2	H/O/A SELECTOR SWITCH	N/A		A-B/800FP-SM32PX20											
SS3	FOR/REV SS	N/A		A-B/800FP-SM22PX11											
PB2	START PB	N/A		A-B/800FP-E3PX10											
PB3	STOP PB	N/A		A-B/800FP-E4PX01											
PL3	PILOT LIGHT, WHITE	N/A		A-B/800FP-P7PD5C											
PL4	PILOT LIGHT, RED	N/A		A-B/800FP-P4PD5C											
RH1	FREQUENCY MODULE	N/A		A-B/800FP-POT6											
1C	CONTACTOR	N/A		A-B/100-M05NZ243											
IB1	INTERBUS MODULE	N/A		A-B/160-IB1											
PD1	PROFIBUS MODULE	N/A		A-B/160-PD1											
DNR	DEVICENET I/O RELAY	N/A		A-B/100-DNY42R											
SS1	LOCAL CONTROL	N/A		A-B/800T-H2D1R		} MX12 OPTION ONLY									
SS2	OFF/RUN FWD SS LOCAL/REMOTE SS	N/A		A-B/800T-H2D1R											
SS2	FUSE	N/A		A-B/800T-J2A		} MX19 OPTION ONLY									
CR1	HIM	N/A		A-B/700-HA32A1											

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REV	DATE	BY	FUNCTION	DESCRIPTION	DATE	BY	FUNCTION	DESCRIPTION	DATE	BY	FUNCTION	DESCRIPTION	DATE	BY	FUNCTION
01	01-15-07	ARS	RELEASE		01-15-07	ARS	ACAD		01-15-06	ARS	ACAD		01-15-07	ARS	ACAD
 <p>Allen-Bradley Rockwell Automation</p>															
<p>INTERCONNECTION, 160 AC DRIVE INTERCONNECT WIRE & PARTS LIST PROJECT:</p>															
<p>C-300315</p>															
<p>1 END</p>															

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