

AMPS ESI Pod Instrument Power and Signals Ozone 2006 (TexAQS 2006)

A. Instrument power requirements

Table 1. 400 Hz, 3 ϕ power requirements

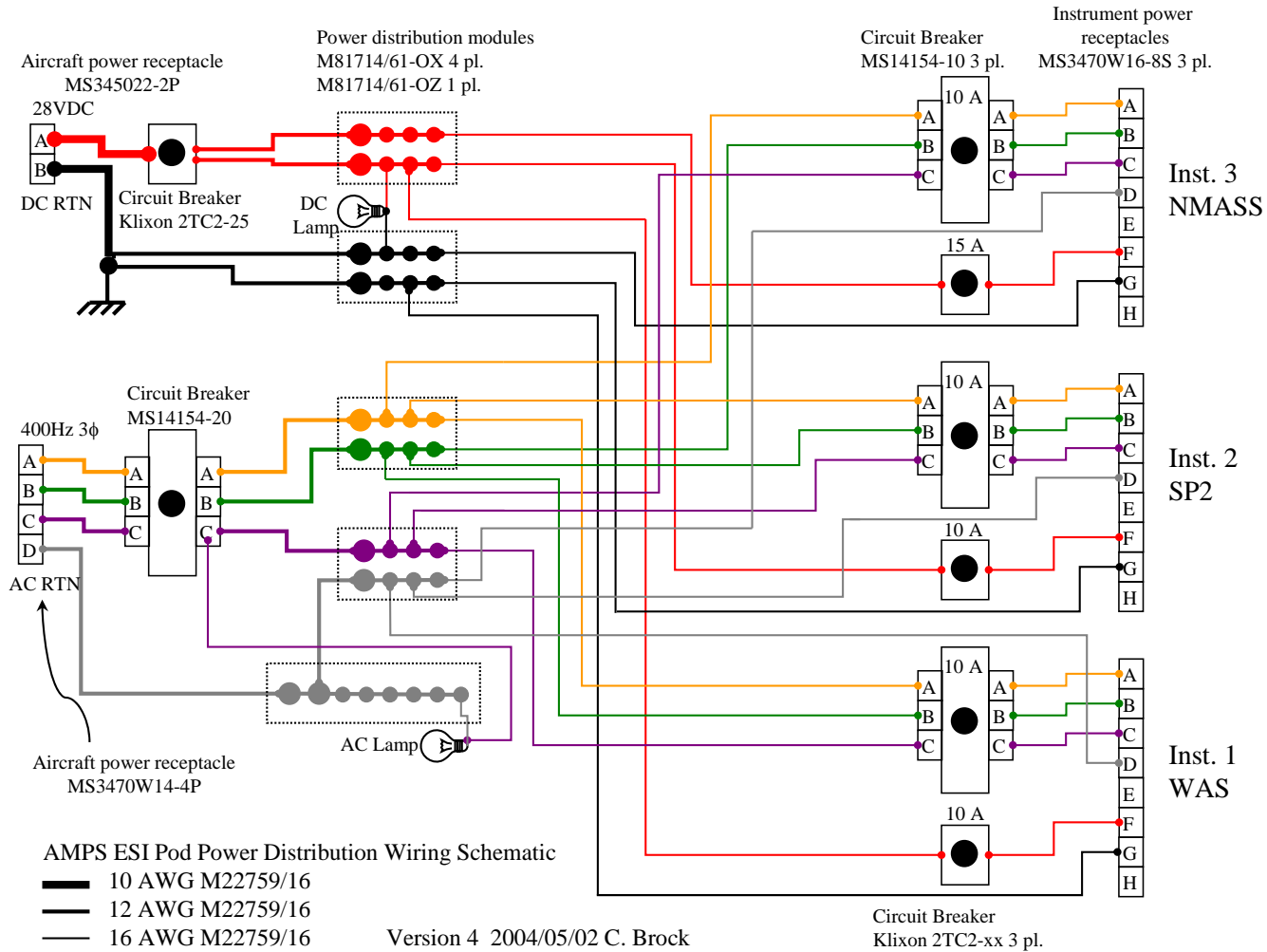
Instrument	Startup (<10 s)			Continuous		
	ϕ A	ϕ B	ϕ C	ϕ A	ϕ B	ϕ C
NMASS	0	0	0	0	0	0
SP2	0	6*	0	0	6	0
WAS	15	15	15	4	4	4
Total	15	21	15	4	10	4

*Load may be configured on any of the phases for aircraft-wide load leveling.

Table 2. 28 VDC power requirements

Instrument	Startup (<10 s)	Continuous
NMASS	15	<12
SP2	10	6
WAS	7	7
Total	32	<25

Figure 1. Schematic of Power Distribution in AMPS ESI Pod Power/Signal Distribution Box



Components for AMPS ESI Pod Power/Signal Distribution Box

BUD Industries HC-14102 enclosure, Newark P/N 99F1012 \$143.53

Ethernet:

Amphenol-PCD RJF21G ethernet receptacle, Mouser P/N 523-RJF21G \$28.98

Amphenol-PCD RJF6G ethernet plug, Mouser P/N 523-RJF6G \$25.55

Adam-6520 5-port ethernet switch, B&B Electronics, \$124.95

Power (all from Circular Connectors):

400 Hz 3 ϕ aircraft receptacle	MS3470W14-4P	\$21.66
400 Hz 3 ϕ aircraft plug	MS3476W14-4S	\$22.66
28VDC aircraft receptacle	MS345022-2P	\$53.85
28VDC aircraft plug	MS345622-2S	\$51.30
Instrument power receptacle	MS3470W16-8S	\$23.99
Instrument power plug	MS3476W16-8P	\$22.73

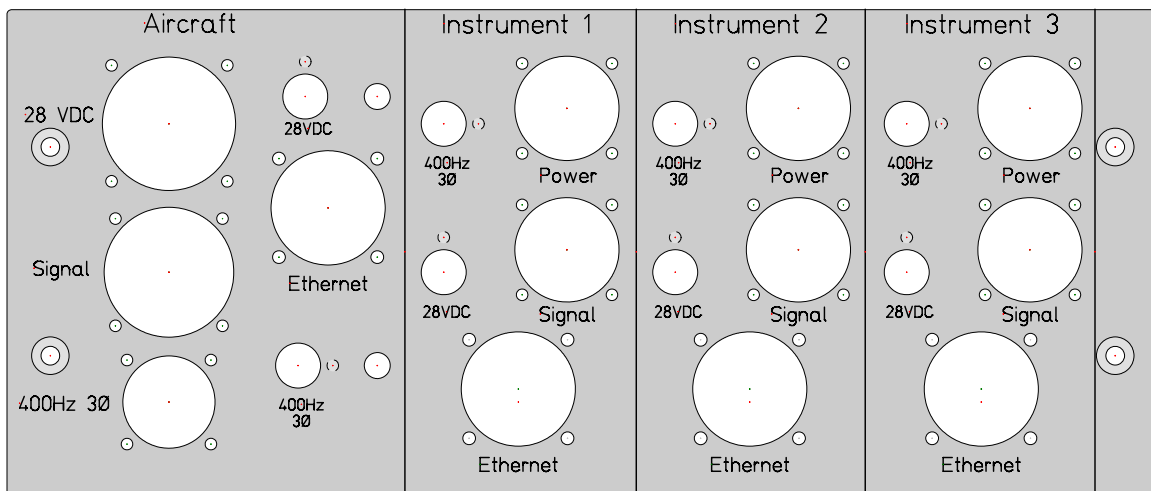
Signal aircraft receptacle:	MS3470W20-41P	\$30.17
-----------------------------	---------------	---------

Signal aircraft plug:	MS3476W20-41S	\$33.11
-----------------------	---------------	---------

Signal instrument receptacle:	MS3470W18-32S	\$29.86
-------------------------------	---------------	---------

Signal instrument plug:	MS3476W18-32P	\$27.14
-------------------------	---------------	---------

Figure 3. AMPS ESI Pod Power/Signal Distribution Box Front Panel

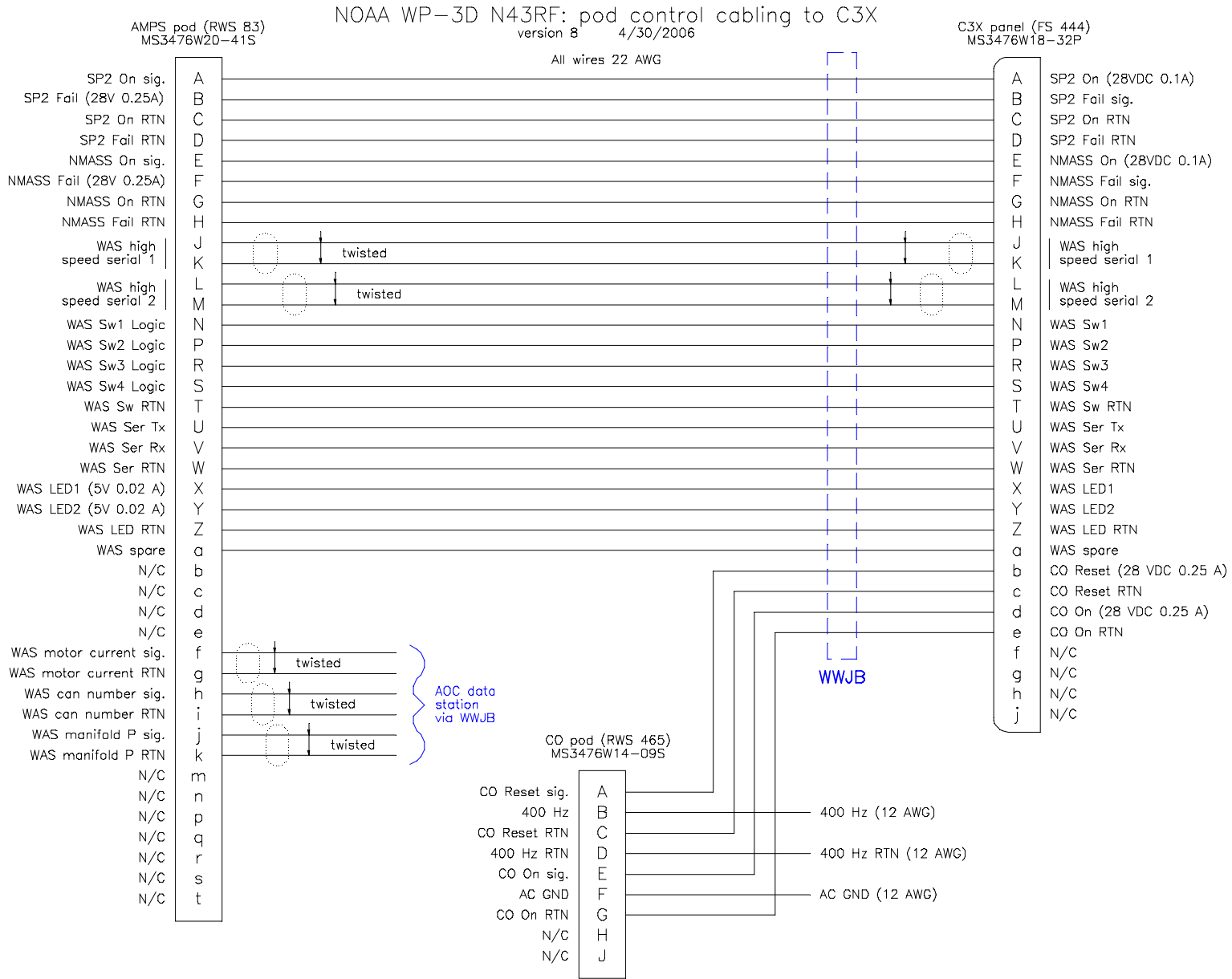


B. Instrument signal requirements

Table 3. Instrument signals and requirements

Instrument	Signal Name	V	I (mA)	AWG	Destination
SP2	On	28	100	22	C3X pod ctrl panel
	Fail	28	250	22	"
	On RTN	0	100	22	"
	Fail RTN	0	250	22	"
NMASS	On	28	100	22	C3X pod ctrl panel
	Fail	28	250	22	"
	On RTN	0	100	22	"
	Fail RTN	0	250	22	"
WAS	HS Serial 1A	15	5	26 TP	C3X pod ctrl panel
	HS Serial 1B	15	5	26 TP	"
	HS Serial 2A	15	5	26 TP	"
	HS Serial 2B	15	5	26 TP	"
	SW1	28	20	22	"
	SW2	28	20	22	"
	SW3	28	20	22	"
	SW4	28	20	22	"
	SW RTN	0	80	22	"
	SerTx	15	5	26	"
	SerRx	15	5	26	"
	SerRTN	0	5	26	"
	LED1	5	50	22	"
	LED2	5	50	22	"
	LED RTN	0	100	22	"
	Spare			22	"
	Motor Current	5	20	22	AOC data system A/D
	Motor Curr. RTN	0	20	22	"
	Can #	5	20	22	"
	Can # return	0	20	22	"
Manifold P	5	20	22	"	
Manifold P RTN	0	20	22	"	

Figure 2. Schematic for C3X Pod Control Panel Connections



Pinouts for instrument connections to power/signal distribution box.

Power connector

Box receptacle: MS3470W16-8S

Cable end: MS3476W16-8P

All contacts are for 16 AWG wire.

All instruments:

A--400 Hz phase A

B--400 Hz phase B

C--400 Hz phase C

D--400 Hz RTN

E--N/C

F--28VDC

G--DC RTN

H--N/C

Signal connectors:

Box receptacle: MS3470W16-26S

Cable end: MS3476W16-26P

All contacts are for 22 AWG wire.

Instrument 1: WAS

A--HS Serial 1A

B--HS Serial 1B

C--Serial 2A

D--HS Serial 2B

E--SW1

F--SW2

G--SW3

H--SW4

J--SW RTN

K--SerTx

L--SerRx

M--SerRTN

N--LED1

P--LED2

R--LED RTN

S--Spare

T--Motor Current

U--Motor Curr. RTN

V--Can #

W--Can # return

X--Manifold P

Y--Manifold P RTN

Instrument 2: SP2

A--SP2 "on" 28VDC signal

B--SP2 "fail" signal

C--SP2 "on" RTN

D--SP2 "fail" RTN

Instrument 3: NMASS

A--NMASS "on" 28VDC signal

B--NMASS "fail" signal

C--NMASS "on" RTN

D--NMASS "fail" RTN