55LQ2

- **28 Vin DC/DC Converter**
- **100 Watts**
- **Quad Outputs**

Features

- High Power Density, Low Profile Packaging
- Full Output Power at +85°C Temperature
- Wedgelock, Plug-in Design
- ESS Screening
- Designed with component derating Per (NAVSO P3641)
- EMI Filtering Designed to MIL-STD-461
- Remote Sensing
- Transient Protection per MIL-STD-704

Contents

Description

NAI's **55LQ2** is a high power density, low profile, 28VIN DC/DC switch mode converter. The **55LQ2** is ideally suited for cPCI air-borne, shipboard and ground applications.

Electrical Specifications

DC Input Characteristics:

Input	16 to 36 VDC; 80 VDC maximum with no damage
EMI/RFI Characteristics	Designed to meet the requirements of MIL-STD-461E; CE102
Input Transient Protection	Per MIL-STD-704

DC Output Characteristics:

Output Power	100 Watts, See Table 2
Output Voltage	See ordering information, output channel codes; sheet 3
Efficiency	75% for typical configuration
Line Regulation	Within 0.1% for low to high line changes at constant load
Load Regulation	0.1% for 0 to 100% of rated load at nominal input line
PARD (Noise and Ripple)	50 mV p-p maximum (20 MHz bandwidth)
Load Transient Recovery	Output voltage returns to regulation limits within 0.5 msec (typical), half to full load
Load Transient Under/Overshoot	0.35 V max from nominal output voltage set point for 3.3 & 5.0 outputs, other outputs 5%.
Short Circuit Protection	Continuous Short circuit protection, with automatic recovery

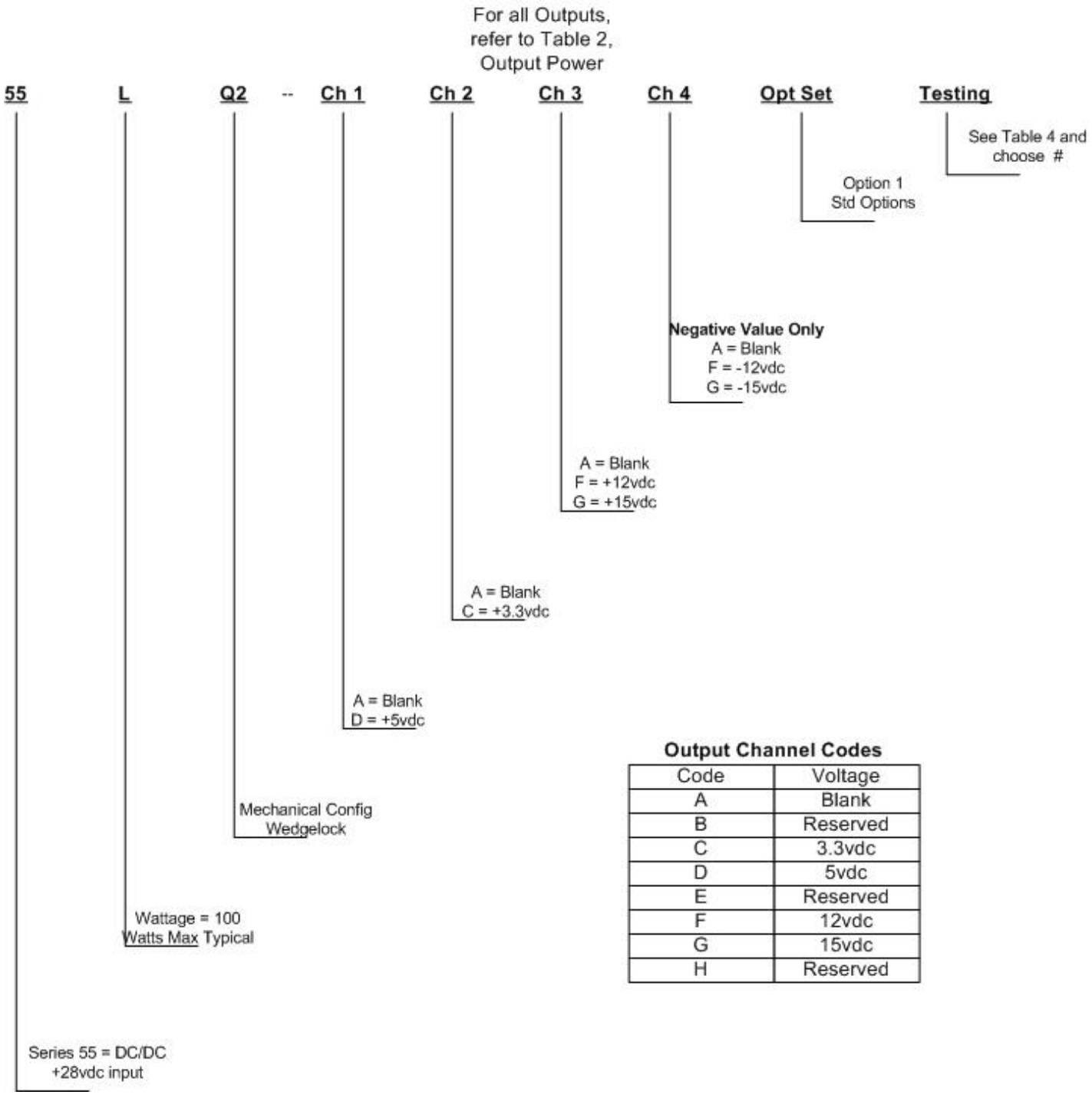
DC Output Characteristics (Continued):

Current Limiting	120% ±10% typical
OverVoltage Protection	Automatic electronic shutdown if voltage exceeds 125% ±10%
Remote Error Sensing	Compensates for up to 0.5-volt drop on +5v output leads
Isolation Voltage	500 VDC input to output and input to case; 100 VDC output to case.
Insulation Resistance	50 Megohm at 50 VDC
Enable	V_{IL} = 1V max, V_{IH} =3V min. Input has 1K Pull-down resistor. Floating or Low enables the switched outputs. High will disable the switched outputs.

Physical/Environmental Specifications

Temperature Range	Operating: -55°C to +85°C at 100% load (Temperature measured at card edge; Storage -55°C to +125°C
Temperature Coefficient	0.01% per °C
Shock	30 G's each axis, per MIL-STD-810C, Method 516.2, Procedure 1. Hammer shock per MIL-S-901C
Acceleration	6 G's per MIL-STD-810C, Method 513.2, Procedure 11, and 14 G's per Procedure 1
Vibration	Per MIL-STD-810C, Method 514.2, Procedure 1A
Reliability (MTBF)	500,000 hours, ground benign, at 50°C baseplate
Humidity	95% at 71°C per MIL-STD-810C, Method 507.1 (non-condensing)
Altitude	40,000 feet per MIL-STD-810C, Method 504.1, Category 6 Equipment
Dimensions	See Mechanical Outline; page 5
Salt & Fog	Per MIL-STD-810C, Method 509.1
Sand/Dust/Fungus	Per MIL-STD-810C
Enclosure	Aluminum housing to aluminum baseplate
Finish	Yellow Chemfilm; IAW Mil-C-5541, Class 1A
Interface	Connections per Table 2
Weight	1.25 lbs. max

55LQ2 Ordering Information



Output Channel Codes

Code	Voltage
A	Blank
B	Reserved
C	3.3vdc
D	5vdc
E	Reserved
F	12vdc
G	15vdc
H	Reserved

Table 2 Available output power

Ch 1	Ch 2	Ch 3	Ch 4	Total Power
10A	10A	2A	2A	100 watts*note

***Note: Output power is limited to 100 watts total**

Table 3. Pinout Designations

Pin #	Signal Name	Description
Column A		
A13	SP	Spare
A14	n/c	No Connection
A15	n/c	No Connection
A16	Ch1S-	Channel 1 Sense -
A17	Ch1S+	Channel 1 Sense +
A18	Ch2	Channel 2 Output
A19	Ch3	Channel 3 Output
A20	Ch4	Channel 4 Output
Column B		
B2	n/c	No Connection
B5	n/c	No Connection
B8	-	No Pin Loaded
B11	CG	Chassis Ground
B13	Ch2	Channel 2 Output
B14	Ch2	Channel 2 Output
B15	Ch2	Channel 2 Output
B16	Ch2	Channel 2 Output
B17	Ch2	Channel 2 Output
B18	Ch2	Channel 2 Output
B19	Ch3	Channel 3 Output
B20	Ch4	Channel 4 Output
B22	Ch1	Channel 1 Output
B25	GND	Ground
B28	+DC	+DC Input
B31	-DC	-DC Input
Column C		
C13	EN#	Enable Signal
C14	n/c	No Connection
C15	n/c	No Connection
C16	Ch2	Channel 2 Output
C17	Ch2	Channel 2 Output
C18	Ch2	Channel 2 Output
C19	Ch3	Channel 3 Output
C20	Ch4	Channel 4 Output

DIN41612 Type M (24 + 8) Connector Layout
SEE MECHANICAL OUTLINE

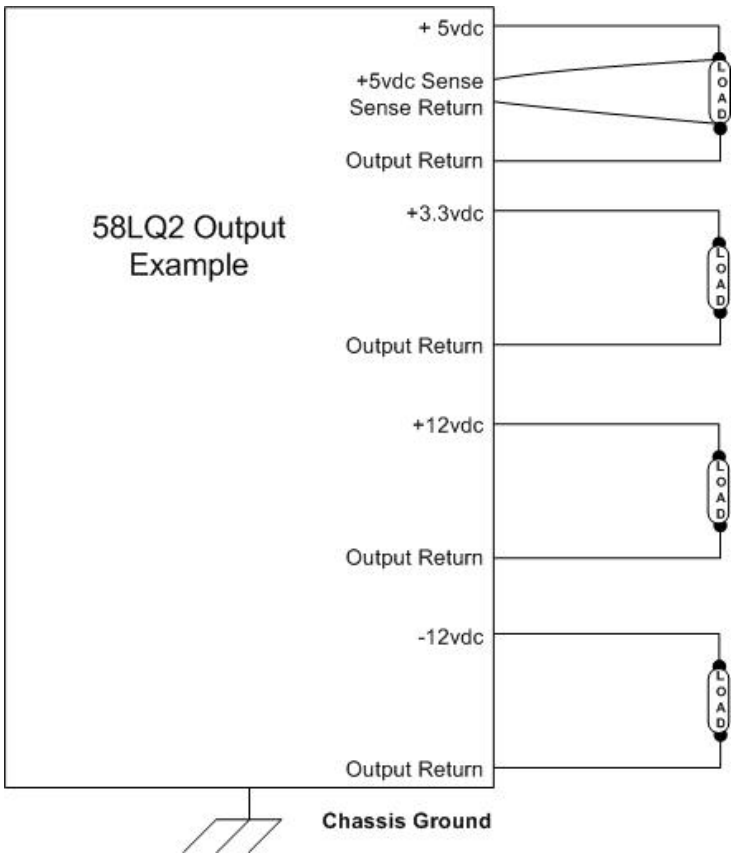
Table 4. Testing Options

Option #	Description
1	Standard Testing, includes ESS Temperature cycling per NAVMAT
2	Optional Testing includes Standard Testing plus 100% vibration testing per NAVMAT. Single axis normal to thermal seating plane.

Connector Specifications

Connector	Part Number - Series
Unit Connector	D In 41612m 24+8 IEC 60603-2
Mating Connector	DIN24+8,FEMALE,STR

Output Wiring Diagram



Mechanical Layout