Westell

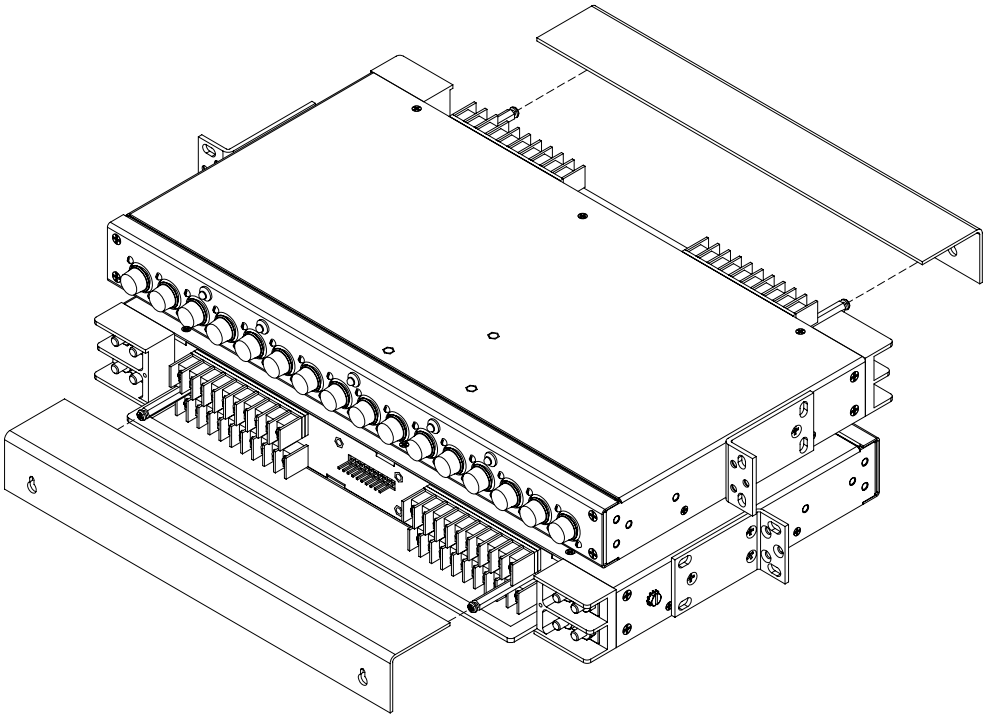
FUSE PANEL

Technical Practice

N280116-N130CY

(+/-130Vdc)

8/8 Type 70



FEATURES

- 2 isolated groups (busses) of 8 Type-70 fuses each (10Amps/Type-70 max).
- Polarity insensitive (+/- 130 Vdc) battery voltage .
- This panel can operate at 160 Amps of output current per panel (80 Amps per Bus).
- Barrier terminal strips for fused outputs and isolated battery returns (grounds).
- Three sets of Form C relay contacts are provided to extend alarms.
- One set of alarm contacts for each; MAJOR Bus A, MAJOR Bus B and MINOR External Input Alarm.
- MINOR External Input Alarm activated by a ground signal applied to the input pin.
- Cable management bar (aka; towel bar) on rear of panel included (flush style).
- Single 1.75” mounting height (single panel space).
- Two sets of mounting brackets are supplied (1” & 1-3/4” spacing), both sets of brackets are universal for 19” and 23” racks, with flush and offset mounting options.

1. GENERAL DESCRIPTION

1.1. The N280116 Fuse Panels provide up to 16 circuits for the distribution of power (+/-130Vdc) to load side equipment. Each of the 16 circuits is individually protected by a Type-70 style telecommunication fuse located on the panel's faceplate. Alarm circuits are provided to indicate and extend alarm conditions when faults occur. Normal Operation LEDs are provided to indicate the status of each bus in the panel.

1.2. Input wiring is connected to an easy access stud input block located at the rear of the panel. Each group of fuses or bus has its own completely isolated inputs, allowing the distribution of two battery voltages through the same panel.

1.3. The power is distributed to the load side equipment through Type-70 style fuses. There are 8 fuses per fuse group and two groups per panel. Each fuse position is available for installer connection at the rear of the panel. A designation card is provided for keeping records of which position is connected to which equipment and what amperage is to be used.

1.4. Each panel is equipped with dummy fuses in all Type 70 positions.

1.5. Alarm circuits are provided to alert service personnel of fault conditions. A fuse alarm is caused when any of the distribution fuses opens. A red fuse alarm LED on the faceplate will illuminate and the Normal Operation LED will extinguish to signal a fuse alarm and also the appropriate MAJOR relay contacts will change states. These fuse panels have common (C), normally open (NO) and normally closed (NC) terminals for both major and minor alarms. A major alarm being a fuse or power failure, and a minor alarm being an external (or Bay) alarm. External alarms are ground activated (20mA required to activate alarm). Note, the use of alarm contacts is optional, if you do not wish to extend the alarms, you don't have to do anything with the alarm pins.

The "Normal" condition of the relay exists when the panel is powered up without any blown fuses or externally activated alarms. The red External Alarm LED on the units face plate will light when a ground is connected to the "Alarm In" terminal (20mA signal required).

1.6. The N280116-N130CY Fuse Panels are made from 0.050" steel and painted off white. Single rack height panels are shipped with universal brackets (1" & 1-3/4" spacing) that will fit both 19" and 23" wide racks and use only one 1.75" panel space. The panel has a clear L shaped lexan to protect the wiring connections on the back of the panel.

2. APPLICATION

2.1. The N280116-N130CY Fuse Panels are designed to be used in the rack level distribution of power. They are rack mount panels that can provide fused power to up to 16 individual circuits (8/8 Type-70), or 8 pieces of equipment, providing redundant battery feeds to each.

3. CIRCUIT DESCRIPTION

3.1. Power is connected to the fuse panel via ¼" studs on 5/8" centers located at the rear of the panel (Torque 5.5 ft-lbs). These inputs are high current stud blocks that supply current to the fuse panel. Connect the battery return cable to the stud input that is labeled "RTN" and the Battery supply cable is connected to the terminals labeled "BAT".

3.2. Distribution of current from each bus is provided by Type-70 style fuses. Each bus has 8 fuse holders for distribution, the fuses are labeled F1 to F8 on each bus. Each fuse position is made available at the rear of the fuse panel. Maximum output current of each fused position is rated at 10 Amps, provided the maximum bus current is not exceeded (each bus is rated 80 Amps max).

3.3. Fuse alarm circuitry provides 1 set of form "C" contacts (C, NO and NC) for each type of alarm (Major Bus A, Major Bus B and Minor-Ext). In the event of a fuse or external alarm, the proper relay will change states, providing a connection between the Normally Open "NO" and Common "C" terminals. The normally closed "NC" terminal will open to high impedance. The MINOR indicates an external ground input alarm (aka; bay or rack alarms). Ground activates the external alarm inputs.

4. INSTALLATION

Please read completely before beginning.

WARNING: Installation should only be performed by an experienced Installer familiar with power distribution systems.

4.1. Unpack and inspect the Fuse Panel for possible damage incurred during shipping. If damage is found, file a claim immediately with the carrier, and notify the customer service department.

4.2. Once the panel is unpacked, verify that there are three mounting brackets. The bracket with the vertical slot is used on both 1" and 1-3/4" spacing. All three brackets are universal for 19" and 23" rack mount spacing and can be mounted so the panel can be installed for a flush mounting or 5" offset. Adjust the position and orientation of the correct mounting brackets on the fuse panel, such that it will fit the rack you wish to mount the panel in. Please see drawing 0234-16D on page 5 for mounting bracket configuration.

4.3. Mount the fuse panel on the rack using the thread forming #12-24 rack mounting screws and tooth lock washers provided.

WARNING: For safety reasons all wiring should be done with the power source removed (when possible).

4.4. Remove the distribution fuse feeding the input cables that are to be connected to the new panel. Using input cables specified by the Job Engineer, hook up the input cables to the input terminal block on the fuse panel ("BAT" & "RTN" for each bus). Each high current input terminal uses a two hole compression lug (1/4" on 5/8", torque to 5.5 ft-lbs).

4.5. The battery outputs are available at the terminal blocks (#6 screw) at the rear of the panel. Each fuse position is numbered and that fused circuit is available at the terminal block position with the same number.

4.6. All battery return ("RTN") connections are terminated on barrier strips on the rear of the panel. Note, these returns are isolated from the chassis.

4.7. This panel has MAJOR Bus A, MAJOR Bus B; and MINOR External alarms. Each has a common (C), normally open (NO) and normally closed (NC) alarm contact.The Minor External Input Alarm is used for alarms that originate outside the panel (bay alarms). A ground signal is supplied from another device in the bay to activate this alarm. In an alarm the "C" contact will short to the "NO" contact, and the "NC" will open. Wire-wrap the alarm connections as per your alarm system requirements. It is recommended you fuse the alarm battery supply (ABS) to 1A or less to protect the alarm wiring and circuitry.

4.8. **CHASSIS GROUND;** For safety reasons, and as recommended by NEBS, this chassis should be electrically connected to the rack ground. From step 4.3. the panel should already be grounded to the rack via the #12-24 thread forming rack screws and outside tooth lock washers. In addition to grounding via the mounting brackets, it is recommended you ground the chassis using a ground cable and the #10 bolt and locks on the side of the chassis (#10 screw torque; 2ft-lbs or 2Nm).

4.9. Power up the panel by installing the distribution fuses supplying the panel. The panel should power up with the Normal Operation LED illuminated and without any red LEDs illuminated, and the relays should be in the "Normal" state ("C" connected to "NC").

4.10. If you wish to verify the fuse alarm circuit, you can insert a blown fuse into one of the empty fuse holders. The red Fuse Alarm LED should light and the Normal Operation LED should extinguish and the appropriate "MAJOR" alarm extension relay should activate (close) to extend the alarm. If you wish to verify the externally activated alarms you can connect a GND to the Alarm In and the External Alarm LED should light and the MINOR-external alarm extension relay should change states to provide the alarm extension.

4.11. Install panel output distribution fuses as required. Use the provided designation card to keep a record of circuits and amperages.

5. SPECIFICATIONS

5.1. Voltage	-/+130Vdc (105-140Vdc)
5.2. Current/Fuse	10 Amps Maximum
5.3. Current/Bus	80 Amps Max.
5.4. Current/Panel	160 Amps
5.5. Output Fuse	Type-70 Fuse Holders
5.6. Output/Bus	8 Fuses (16 per panel)
5.7. Output/Panel	2 Busses per Panel
5.8. Input Block	Two ¼" Stud on 5/8 center
5.9. Output Block	#22 AWG to 12 AWG Wire or fork/ring for #6 Screw, 10awg forks/rings will work
5.10. Alarm Block	0.045" sq wire wrap pins
5.11. Relay output (contact rating)	¼ Amp@130Vdc max 2 Amps@60 Vdc max
5.12. Relay activation	Gnd, 20mA max.
5.13. Dimensions	1¾ H, 17 W,10½ D (excluding brackets)
5.14. Rack Mounting	19" and 23" Racks for 1" or 1-3/4" Panel spaces
5.15. Weight	Appx 8 Lbs
5.16. Operating Temp.	-20° to +60°C (-5° to +140°F)
5.17. Color	Off White

Compatible lugs for input block
2 hole compression lugs for 1/4" studs on 5/8" centers.
Panduit# LCD2-14A 2awg wire
LCD4-14A 4awg wire
LCD6-14A 6awg wire
LCD8-14A 8awg wire
Output lugs (locking fork recommended):
Ring or fork for #6 screw (up to 10awg)

Ordering Options:
1) N280116-NCY **(**+/- 24/48 Vdc)
Same as the N280116-N130CY but for +/- 24/48 Vdc battery voltage.

6. TECHNICAL SERVICES

6.1 If technical or customer assistance is required, contact Westell by calling or using one of the following options:

Voice: (800) 377-8766
email: global_support@westell.com

For additional information about Westell, visit the Westell World Wide Web site at http://www.Westell.com.

6.2 This equipment is identified by a model number ie. N280116-N130CY. Be sure to have the model number and serial number available when making inquiries about the equipment.

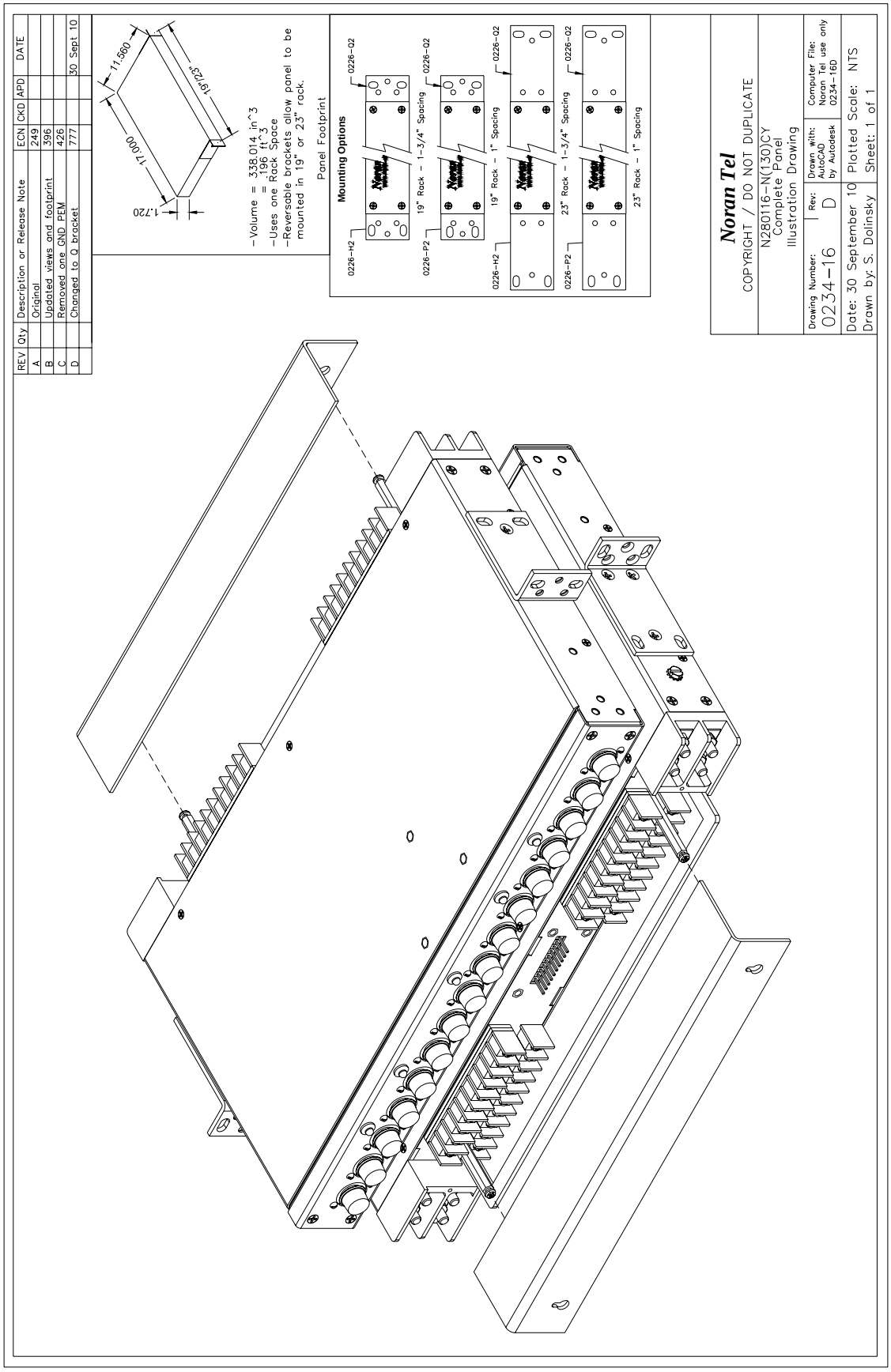
7. WARRANTY & REPAIRS

7.1 Westell warrants this product to be free of defects at the time of shipment. Westell also warrants this product to be fully functional for the time period specified by the terms and conditions governing the sale of the product. Any attempt to repair or modify the equipment by anyone other than an authorized Westell representative will void the warranty.

7.2 Westell will repair or replace any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, or improper installation. To return defective equipment, first request a Return Material Authorization (RMA) number from Westell by calling or emailing (Customer Service) at the address below. Once an RMA number is obtained, return the defective unit (freight prepaid), along with a brief problem description, to the address we will provide to you when you contact us.

email: rgmdept@westell.com
Voice: (800) 377-8766

Replacements will be shipped in the fastest manner consistent with the urgency of the situation. Westell will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact Westell for details.


REV | Qty | Description or Release Note | ECN | CKD | APD | DATE
A | | Original | 249
B | | Updated views and footprint | 396
C | | Removed one GND PEM | 426
D | | Changed to Q bracket | 777 | | | 30 Sept 10
11.560
19.725"
17.000
1.720
-Volume = 338.014 in^3
.196 ft^3
-Uses one Rack Space
-Reversable brackets allow panel to be mounted in 19" or 23" rack.
Panel Footprint
Mounting Options
0226-H2
0226-02
19" Rack - 1-3/4" Spacing
0226-P2
19" Rack - 1" Spacing
23" Rack - 1-3/4" Spacing
23" Rack - 1" Spacing
Noran Tel
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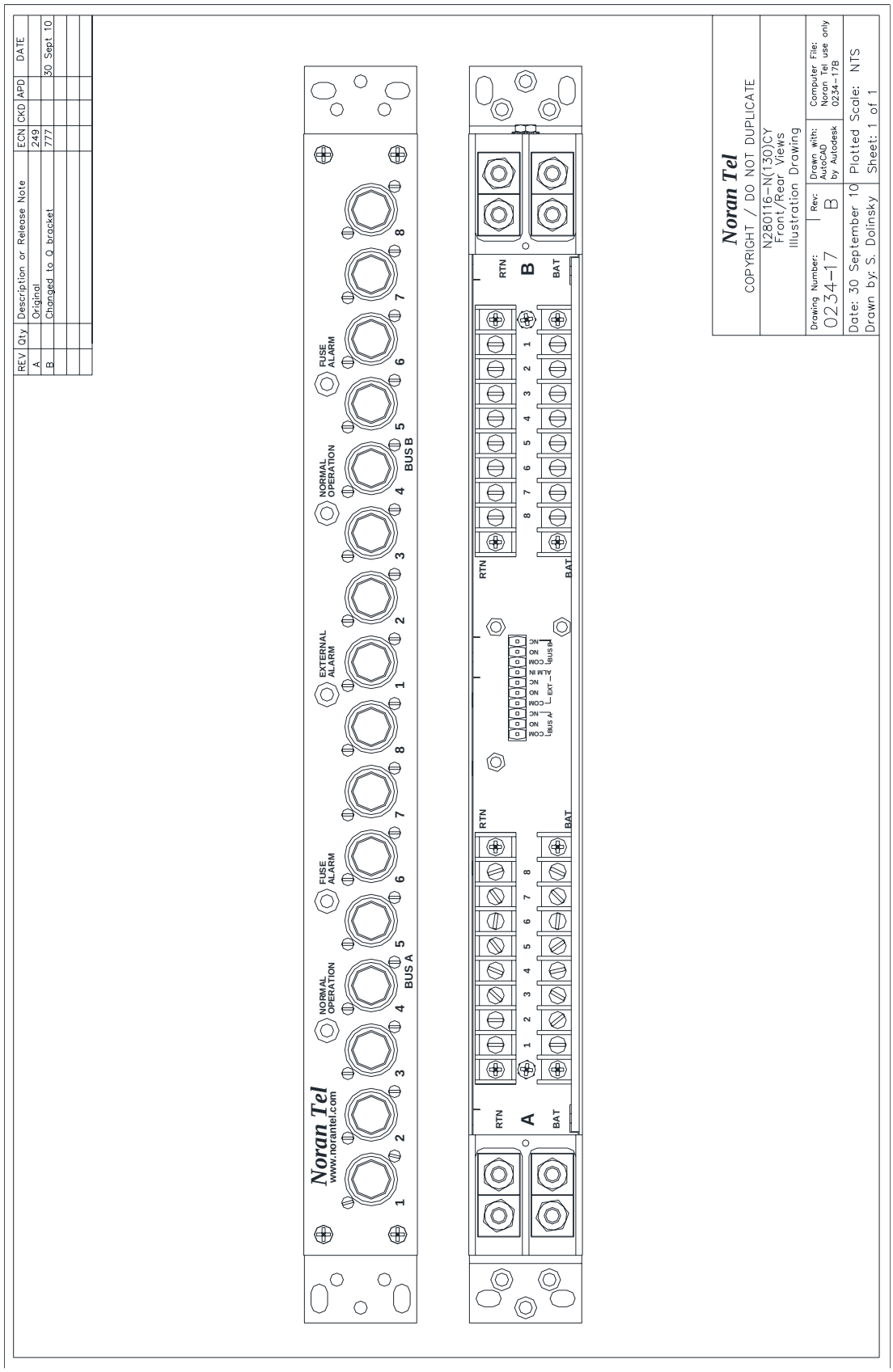
N280116-N(130)CY
Complete Panel
Illustration Drawing
Drawing Number: 0234-16
Rev: D
Drawn with: AutoCAD by Autodesk
Computer File: Noran Tel use only 0234-16D
Date: 30 September 10
Drawn by: S. Dolinsky
Plotted Scale: NTS
Sheet: 1 of 1


REV | Qty | Description or Release Note | ECN | CKD | APD | DATE
A | | Original | 249 | | | 30 Sept 10
B | | Changed to Q bracket | 777 | | |
Noran Tel
www.norantel.com
NORMAL OPERATION
FUSE ALARM
EXTERNAL ALARM
BUS A
BUS B
RTN
BAT
A
B
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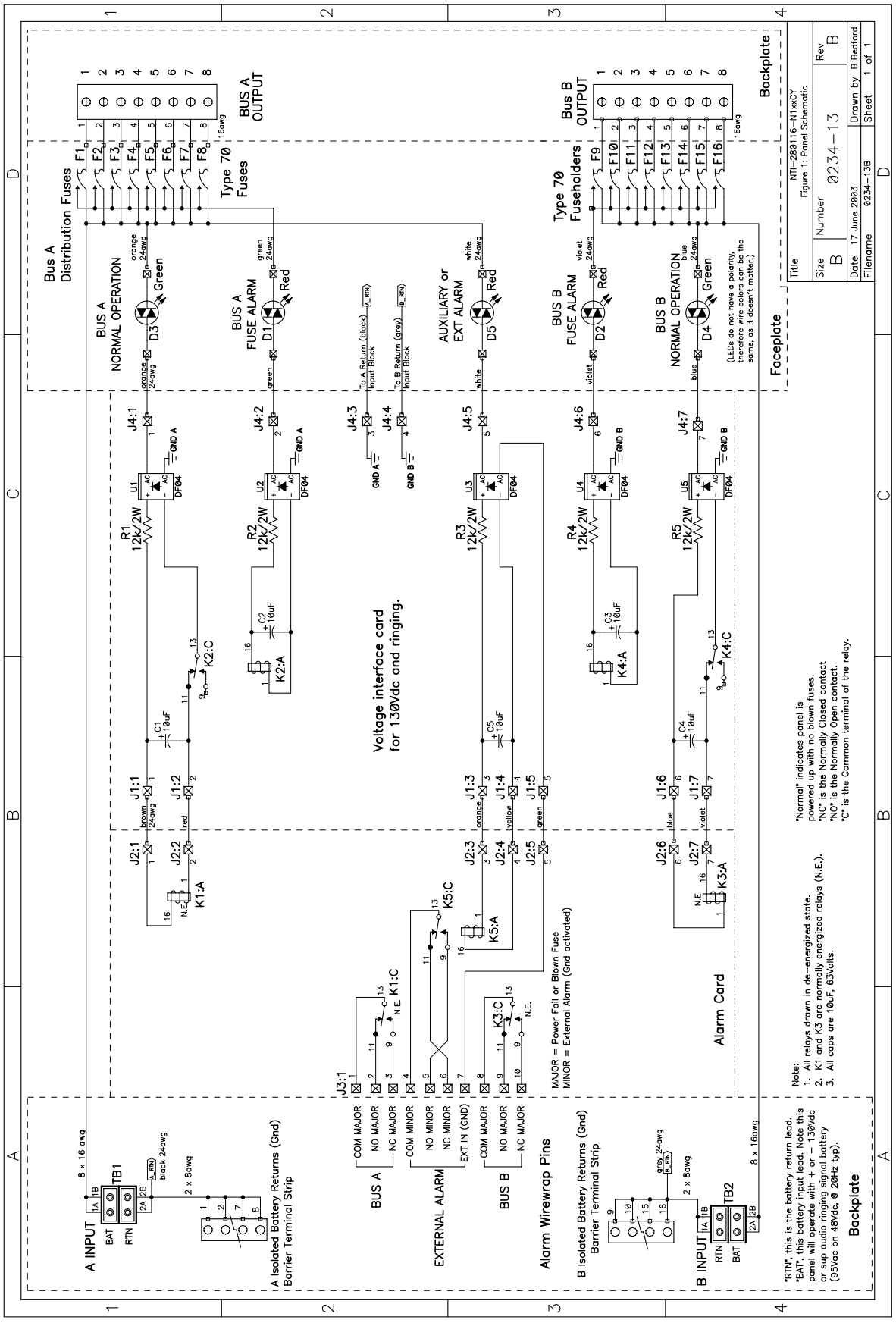
N280116-N(130)CY
Front/Rear Views
Illustration Drawing
Drawing Number: 0234-17
Rev: B
Drawn with: AutoCAD by Autodesk
Computer File: Noran Tel use only 0234-17B
Date: 30 September 10
Drawn by: S. Dolinsky
Plotted Scale: NTS
Sheet: 1 of 1


Bus A
Distribution Fuses
Type 70
Fuses
BUS A
OUTPUT
BUS A
NORMAL OPERATION
D3
Green
BUS A
FUSE ALARM
D1
Red
AUXILIARY or
EXT ALARM
D5
Red
BUS B
FUSE ALARM
D2
Red
BUS B
NORMAL OPERATION
D4
Green
Type 70
Fuseholders
Bus B
OUTPUT
(LEDs do not have a polarity, therefore wire colors can be the same, as it doesn't matter.)
Backplate
Faceplate
Voltage interface card
for 130Vdc and ringing.
Alarm Card
A INPUT
B INPUT
TB1
TB2
BAT
RTN
A Isolated Battery Returns (Gnd)
Barrier Terminal Strip
B Isolated Battery Returns (Gnd)
Barrier Terminal Strip
Alarm Wirewrap Pins
BUS A
EXTERNAL ALARM
BUS B
COM MAJOR
NO MAJOR
NC MAJOR
COM MINOR
NO MINOR
NC MINOR
EXT IN (GND)
MAJOR = Power Fail or Blown Fuse
MINOR = External Alarm (Gnd activated)
"Normal" indicates panel is powered up with no blown fuses.
"NC" is the Normally Closed contact
"NO" is the Normally Open contact.
"C" is the Common terminal of the relay.
Note:
1. All relays drawn in de-energized state.
2. K1 and K3 are normally energized relays (N.E.).
3. All caps are 10uF, 63Volts.
"RTN", this is the battery return lead.
"BAT", this battery input lead. Note this panel will operate with + or – 130Vdc or sup audio ringing signal battery (95Vac on 48Vdc, @ 20Hz typ).
Title
NTI-280116-N1xxCY
Figure 1: Panel Schematic
Size
B
Number
0234-13
Rev
B
Date
17 June 2003
Drawn by
B Bedford
Filename
0234-13B
Sheet
1 of 1