PG-Flex® FRE-868 and FRE-869 Indoor Remote Terminal Enclosures
Quick Installation Guide

RT Enclosure Features

The FRE-868 and FRE-869 RT enclosures are to be mounted indoors only

These indoor units support from one to four 24 channel systems and can be line powered from the central office or locally powered (Table 1). When line powered, two additional power pairs are required from the COT shelf to the RT Enclosure for each Doubler installed. These units include terminations for four RT external alarms.

Table 1. RT Enclosure Features

RT Enclosures		FRE-868				FRE-869	
		L1 A	L2 A	L3 A	L4 A	L1 A	L2 A
Mounting	Indoor Rack						X
	Indoor Wall	X	X	X	X	X	
Subscriber Lines	24 Channel		X		X		
	48 Channel	X		X			
	96 Channel					X	X
Subscriber Termination	25-Pair Amphenol (male)	X	X	X	X	X	X
HDSL Termination	25-Pair Amphenol (male)					X	X
	Screw Terminals	X	X	X	X		
HDSL Protection	5-Pin Sockets			X	X		
	None	X	X			X	X

The following instructions assume you are mounting the RT Enclosure to a plywood backboard. If you are mounting the RT Enclosure to a different surface, follow the appropriate local practice for mounting the RT Enclosure.

Installing the FRE-868

1. Install the wall mounting brackets to the RT enclosure using 10-32 x 3/8-inch screws as shown in Figure 1.
2. Mount the RT Enclosure to the plywood backboard, using $1^1/_2$-inch long #12 wood screws (minimum size) (Figure 1).

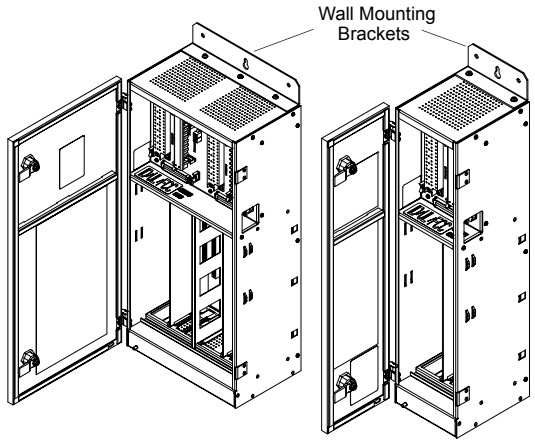

Figure 1. Install the FRE-868

3. When the remote terminal enclosure is line powered, terminate all HDSL, auxiliary power, and bypass terminations on the terminal strip shown in Figure 2.

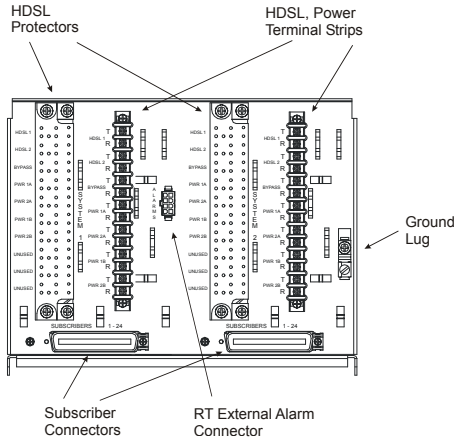

Figure 2. FRE-868 Connections

4. When the remote terminal enclosure is locally powered, connect power as shown in Table 2. Use one pair of 24 AWG wire for each connection; individual conductors of each pair should be connected to the Tip and Ring terminals.

Table 2. FRE-868 Local Power Connections

Power Input	Terminal Block
Battery A (Return)	PWR 1A – TIP & RING
Battery B (Return)	PWR 2A – TIP & RING
Battery A (-48 V)	PWR 1B – TIP & RING
Battery B (-48 V)	PWR 2B – TIP & RING

5. Terminate the subscriber circuits according to Table 6. Subscriber circuits for each system in the FRE-868 are terminated on a 25-pair male Amphenol connector.

Installing the FRE-869

1. Mount the RT Enclosure L1A to the plywood backboard, using $1^1/_2$-inch long #12 wood screws (minimum size) (Figure 3).

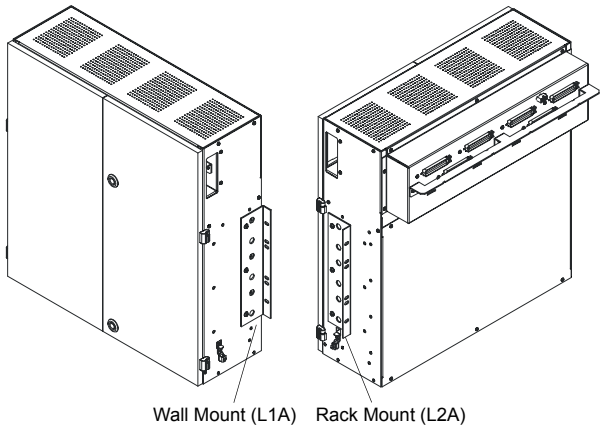

Figure 3. Install the FRE-869

2. Mount the RT Enclosure L2A to a rack, using the mounting slots. Follow local practices to ensure a secure mounting.

3. When the remote terminal enclosure is line powered, terminate all HDSL, auxiliary power, and bypass terminations on a 25-pair male Amphenol connector as shown in Table 5.
4. When the remote terminal enclosure is locally powered, connect power as shown in Table 3.

Table 3. FRE-869 Local Power Connections

Power Input	System 1/System 3				System 2/System 4			
	AmphenolP inout		Color		AmphenolP inout		Color	
	Tip	Ring	Tip	Ring	Tip	Ring	Tip	Ring
Battery A (Return)	29	4	WH	BN	36	11	BK	BL
Battery B (Return)	30	5	WH	SL	37	12	BK	OR
Battery A (-48 V)	31	6	RD	BL	38	13	BK	GN
Battery B (-48 V)	32	7	RD	OR	39	14	BK	BN

5. Terminate the subscriber circuits according to Table 6. Subscriber circuits for each system in the FRE-869 are terminated on a 25-pair male Amphenol connector.
6. Optional RT External Alarm inputs are provided through a connectorized cable stub. See Figure 2 and Table 4 for alarm cable assignments.

RT External Alarm Wiring

Optional RT External Alarm inputs are provided through a connectorized 6 ft. cable stub. See Table 4 for alarm cable assignments. The alarm connector for the FRE-868 RT Enclosures is shown in Figure 2. The alarm connector for the FRE-869 L1A RT Enclosure is located on the rear of the enclosure adjacent to the Ampenol connectors. The alarm connector for the FRE-869 L1A RT Enclosure is located on the front of the enclosure, behind the cover doors, adjacent to the Amphenol connectors.

Table 4. Alarm Cable Assignments

Cable Stub		
NO	COM	Description
WH	BL	RT External Alarm #1
WH	OR	RT External Alarm #2
WH	GN	RT External Alarm #3
WH	BN	RT External Alarm #4

Chassis Ground Wiring

To install the chassis ground lug, perform the following steps for the appropriate unit. The ground lug for the FRE-869 is located externally as shown in Figure 4. The ground lug for the FRE-868 models is on the inside beside the HDSL Terminal Strip (see Figure 2).

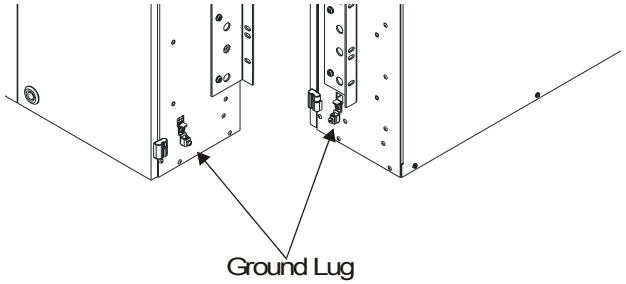

Figure 4. FRE869 Ground Lug

Use 6 AWG wire to ensure a good ground connection to the FRE-86x.

1. For the FRE-869, connect the chassis ground wire to the ground lug on the outside of the unit as shown in Figure 4.
2. For the FRE-868, route one end of the chassis ground wire through the hole provided on either side of the RT Enclosure, and connect it to the ground lug.
3. Connect the other end of the chassis ground wire to a suitable ground termination point (ground rod or cold water pipe) per local code.

Table 5. HDSL Circuit Assignments

Pairs	System 1/System 3				System 2/System 4			
	AmphenolP inout		Color		Amphenol Pinout		Color	
	Tip	Ring	Tip	Ring	Tip	Ring	Tip	Ring
HDSL Pair #1	26	1	WH	BL	33	8	RD	GN
HDSL Pair #2	27	2	WH	OR	34	9	RD	BN
Metallic Bypass Pair	28	3	WH	GN	35	10	RD	SL
Aux Pwr Pair #1A	29	4	WH	BN	36	11	BK	BL
Aux Pwr Pair #2A	30	5	WH	SL	37	12	BK	OR
Aux Pwr Pair #1B	31	6	RD	BL	38	13	BK	GN
Aux Pwr Pair #2B	32	7	RD	OR	39	14	BK	BN

Table 6. Circuit Assignments

Channel Unit Service Configuration		Channel		Amphenol Subscriber Pinout		Subscriber Color	
POTS	ISDN	Unit	LED	Tip	Ring	Tip	Ring
Ckt 1	Ckt 1	1	1	26	1	WH	BL
Ckt 2	Ckt 2		2	27	2	WH	OR
Ckt 3	Ckt 3		3	28	3	WH	GR
Ckt 4	Ckt 4		4	29	4	WH	BN
Ckt 5			5	30	5	WH	SL
Ckt 6			6	31	6	RD	BL
Ckt 7			7	32	7	RD	OR
Ckt 8			8	33	8	RD	GN
Ckt 1	Ckt 1	2	1	34	9	RD	BN
Ckt 2	Ckt 2		2	35	10	RD	SL
Ckt 3	Ckt 3		3	36	11	BK	BL
Ckt 4	Ckt 4		4	37	12	BK	OR
Ckt 5			5	38	13	BK	GN
Ckt 6			6	39	14	BK	BN
Ckt 7			7	40	15	BK	SL
Ckt 8			8	41	16	YL	BL
Ckt 1	Ckt 1	3	1	42	17	YL	OR
Ckt 2	Ckt 2		2	43	18	YL	GN
Ckt 3	Ckt 3		3	44	19	YL	BN
Ckt 4	Ckt 4		4	45	20	YL	SL
Ckt 5			5	46	21	VI	BL
Ckt 6			6	47	22	VI	OR
Ckt 7			7	48	23	VI	GN
Ckt 8			8	49	24	VI	BN

Turn-up and Testing

Refer to the COLU Technical Practice or RTLU Technical Practice for complete COT and RT turn-up and testing procedures.

Limited Warranty

Product warranty is determined by your service agreement. Refer to the ADC Warranty/Software Handbook for additional information, or contact your sales representative or Customer Service for details.

FCC Class B Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by ADC voids the user's warranty.

All wiring external to the product(s) should follow the provisions of the current edition of the National Electrical Code.

Technical Support

Technical assistance is available 24 hours a day, 7 days a week by contacting the ADC Technical Assistance Center (TAC) at:

Telephone:	800.366.3891 (toll-free in the U.S. and Canada)
E-mail:	wsd_support@adc.com
Knowledge Base:	http://adc.com/Knowledge_Base/index.jsp
Web:	www.adc.com

Revision History

Rev	Date	Revisions
01	6/28/2002	Added local power option. Changed document number (previous release was SCP-FRE868-001-02Q).
02	7/11/2002	Added additional local power information
03	9/18/2002	Changed Environmental Alarms to RT External Alarms
04	1/6/2003	Updated Product Support Information

PG-Flex
FRE-868 and FRE-869 Indoor Remote Terminal Enclosures
Quick Installation Guide

Section SCP-FRE868-011-04Q
Issued January 6, 2003

1251740

This document applies to the following products:

Model	List	CLEI
FRE-868	1A	VAMR340L~~
FRE-868	2A	VAMR3S0L~~
FRE-868	3A	VAMR440L~~
FRE-868	4A	VAMR4S0L~~
FRE-869	1A	VAMR360L~~
FRE-869	2A	VAMR560L~~

ISO 9001
DNV
DNV Certification, Inc.
Certificated Firm

ADC