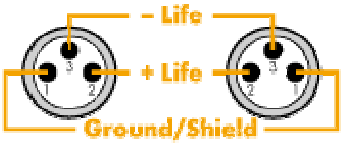
Technical Note TN231
Wiring diagrams (by: Sommer Cable)

AUDIO CABLE

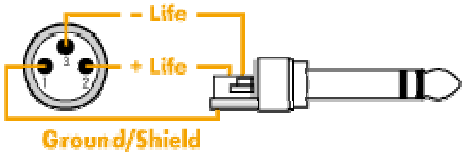
MICROPHONE CABLE balanced
(according to IEC-Norm):

XLR ➜ XLR
PIN 1 ➜ PIN 1: GROUND/ SHIELD
PIN 2 ➜ PIN 2: +LIFE
PIN 3 ➜ PIN 3: -LIFE



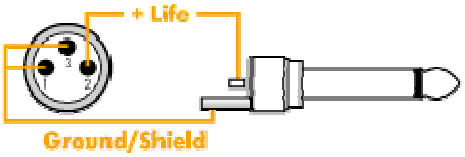
MICROPHONE CABLE balanced

XLR ➜ JACK STEREO
PIN 1 ➜ JACK CASING: GROUND/ SHIELD
PIN 2 ➜ JACK TIP: +LIFE
PIN 3 ➜ JACK RING: -LIFE



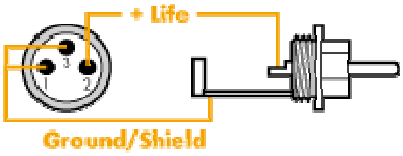
MICROPHONE CABLE unbalanced

XLR ➜ JACK MONO
PIN 1 ➜ JACK CASING: GROUND/ SHIELD
PIN 2 ➜ JACK TIP: +LIFE
PIN 3 ➜ JACK CASING: GROUND/ SHIELD



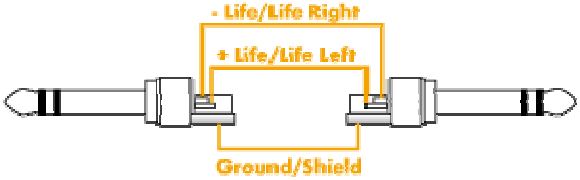
MICROPHONE CABLE unbalanced

XLR ➜ CINCH
PIN 1 ➜ CINCH CASING: GROUND/ SHIELD
PIN 2 ➜ CINCH TIP: +LIFE
PIN 3 ➜ CINCH CASING: GROUND/ SHIELD



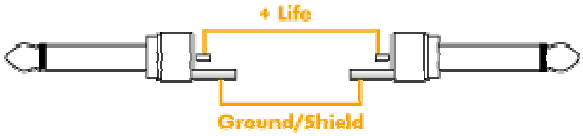
JACK CABLE balanced/ stereo

JACK STEREO ➜ JACK STEREO
JACK CASING ➜ JACK CASING: GROUND/ SHIELD
JACK TIP ➜ JACK TIP: +LIFE/ LIFE LEFT
JACK RING ➜ JACK RING: -LIFE/ LIFE RIGHT



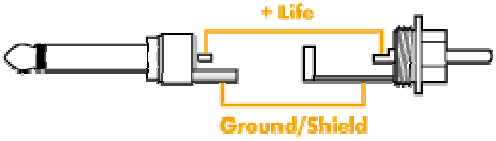
JACK CABLE unbalanced/ mono

JACK MONO ➜ JACK MONO
JACK CASING ➜ JACK CASING: GROUND/ SHIELD
JACK TIP ➜ JACK TIP: +LIFE



ADAPTER CABLE unbalanced/ mono

JACK MONO ➜ CINCH
JACK CASING ➜ CINCH CASING: GROUND/ SHIELD
JACK TIP ➜ CINCH TIP: +LIFE

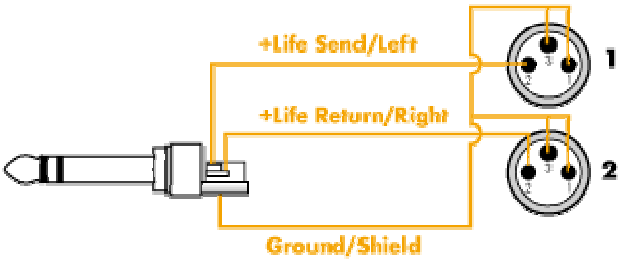


CINCH CABLE unbalanced/ mono

CINCH ➜ CINCH
CINCH CASING ➜ CINCH CASING: GROUND/ SHIELD
CINCH TIP ➜ CINCH TIP: +LIFE

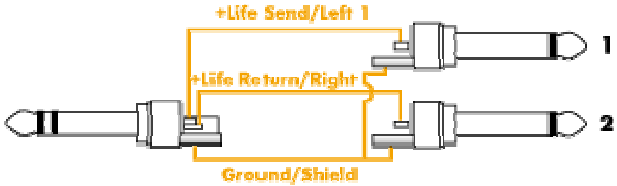
INSERT/ STEREO CABLE unbalanced

JACK STEREO ➜ 2 x XLR
JACK CASING ➜ PIN 1 + 3: GROUND/ SHIELD
JACK TIP ➜ PIN 2 (XLR1): +LIFE SEND/ LEFT
JACK RING ➜ PIN 2 (XLR2): +LIFE RETURN/ RIGHT



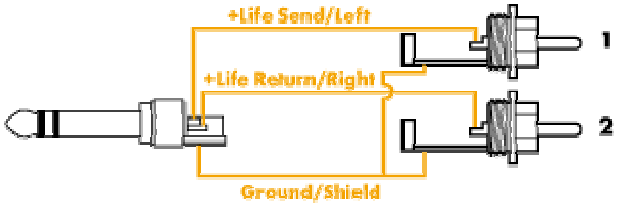
INSERT/ STEREO CABLE unbalanced

JACK STEREO ➜ 2 x JACK MONO
JACK CASING ➜ JACK CASING: GROUND/ SHIELD
JACK TIP ➜ JACK TIP (JACK1): +LIFE SEND/ LEFT
JACK RING ➜ JACK TIP (JACK2): +LIFE RETURN/ RIGHT



INSERT/ STEREO CABLE unbalanced

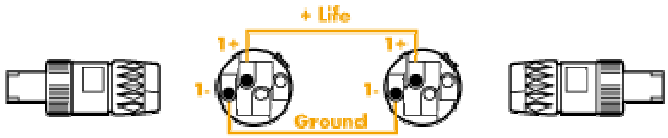
JACK STEREO ➜ 2 x CINCH
JACK CASING ➜ CINCH CASING: GROUND/ SHIELD
JACK TIP ➜ CINCH TIP (CINCH1): +LIFE SEND/ LEFT
JACK RING ➜ CINCH TIP (CINCH2): +LIFE RETURN/ RIGHT



SPEAKER CABLE

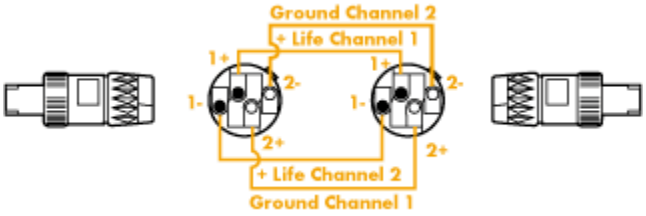
SPEAKER CABLE 2-WIRE:

SPEAKON ➜ SPEAKON
PIN 1+ ➜ PIN 1+: +LIFE
PIN 1- ➜ PIN 1-: GROUND
PIN 2+ ➜ N.C.
PIN 2- ➜ N.C.



SPEAKER CABLE 4-WIRE

SPEAKON ➜ SPEAKON
PIN 1+ ➜ PIN 1+: +LIFE CHANNEL 1
PIN 1- ➜ PIN 1-: GROUND CHANNEL 1
PIN 2+ ➜ PIN 2+: +LIFE CHANNEL 2
PIN 2- ➜ PIN 2-: +GROUND CHANNEL 2



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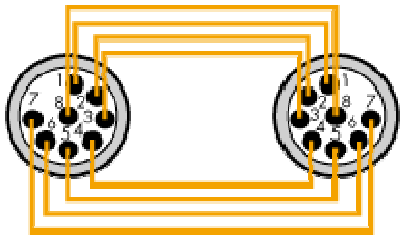
stage audio works

SPEAKER CABLE 4-WIRE

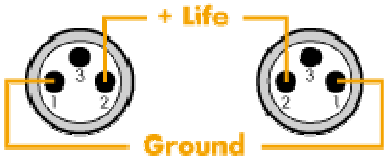
EP 4-PIN	➜	EP 4-PIN
PIN 1	➜	PIN 1: +LIFE CHANNEL 1
PIN 2	➜	PIN 2: GROUND CHANNEL 1
PIN 3	➜	PIN 3: +LIFE CHANNEL 2
PIN 4	➜	PIN 4: GROUND CHANNEL 2

SPEAKER CABLE 8-WIRE



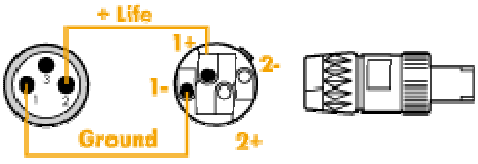
EP 8-PIN	➜	EP 8-PIN
PIN 1	➜	PIN 1: +LIFE CHANNEL 1
PIN 2	➜	PIN 2: GROUND CHANNEL 1
PIN 3	➜	PIN 3: +LIFE CHANNEL 2
PIN 4	➜	PIN 4: GROUND CHANNEL 2
PIN 5	➜	PIN 5: +LIFE CHANNEL 3
PIN 6	➜	PIN 6: GROUND CHANNEL 3
PIN 7	➜	PIN 7: +LIFE CHANNEL 4
PIN 8	➜	PIN 8: GROUND CHANNEL 4

SPEAKER CABLE 2-WIRE



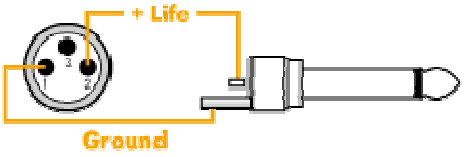
XLR	➜	XLR
PIN 1	➜	PIN 1: GROUND
PIN 2	➜	PIN 2: +LIFE
PIN 3	➜	N.C.

SPEAKER ADAPTER CABLE 2-WIRE



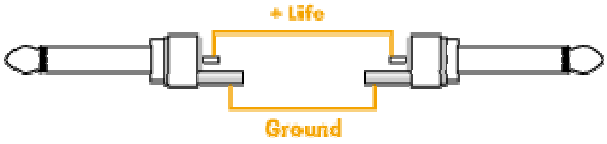
XLR	➜	SPEAKON
PIN 1	➜	1-: GROUND
PIN 2	➜	1+: +LIFE
PIN 3	➜	1+: N.C.

SPEAKER ADAPTER CABLE 2-WIRE



XLR	➜	JACK MONO
PIN 1	➜	JACK CASING: GROUND
PIN 2	➜	JACK TIP: +LIFE
PIN 3	➜	N.C.

SPEAKER CABLE 2-WIRE

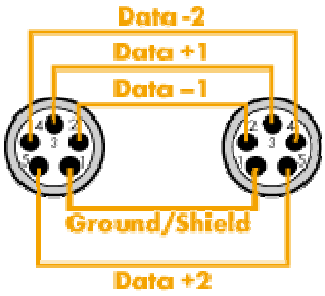


JACK MONO	➜	JACK MONO
JACK CASING	➜	JACK CASING: GROUND
JACK TIP	➜	JACK TIP: +LIFE

stage audio works

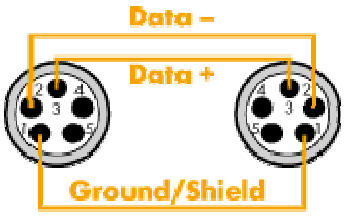
DMX CABLE / MIDI CABLE

DMX512-CABLE 5-PIN FULLY ASSIGNED
(ACCORDING TO USITT1990):



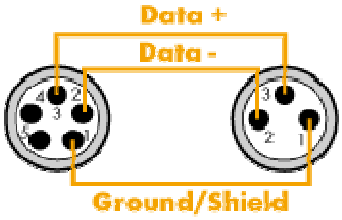
XLR 5-PIN ➜ XLR 5-PIN
PIN 1 ➜ PIN 1: GROUND/ SHIELD
PIN 2 ➜ PIN 2: DATA -1
PIN 3 ➜ PIN 3: DATA +1
PIN 4 ➜ PIN 4: DATA -2/ RETURN CHANNEL
PIN 5 ➜ PIN 5: DATA +2/ RETURN CHANNEL

DMX CABLE 5-PIN PARTIALLY ASSIGNED:



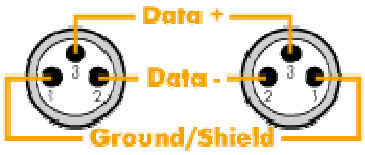
XLR 5-PIN ➜ XLR 5-PIN
PIN 1 ➜ PIN 1: GROUND/ SHIELD
PIN 2 ➜ PIN 2: DATA-
PIN 3 ➜ PIN 3: DATA+
PIN 4 ➜ N.C.
PIN 5 ➜ N.C.

DMX ADAPTER CABLE PARTIALLY ASSIGNED
(ACCORDING TO USITT1990):



XLR 5-PIN ➜ XLR 3-PIN
PIN 1 ➜ PIN 1: GROUND/ SHIELD
PIN 2 ➜ PIN 2: DATA-
PIN 3 ➜ PIN 3: DATA+
PIN 4 ➜ N.C.
PIN 5 ➜ N.C.

DMX CABLE 3-PIN PARTIALLY ASSIGNED
(ACCORDING TO USITT1990):



XLR 3-PIN ➜ XLR 3-PIN
PIN 1 ➜ PIN 1: GROUND/ SHIELD
PIN 2 ➜ PIN 2: DATA-
PIN 3 ➜ PIN 3: DATA+

MIDI CABLE

DIN 5-PIN ➜ DIN 5-PIN
PIN 1 ➜ N.C.
PIN 2 ➜ GROUND/ SHIELD
PIN 3 ➜ N.C.
PIN 4 ➜ DATA+
PIN 5 ➜ DATA-

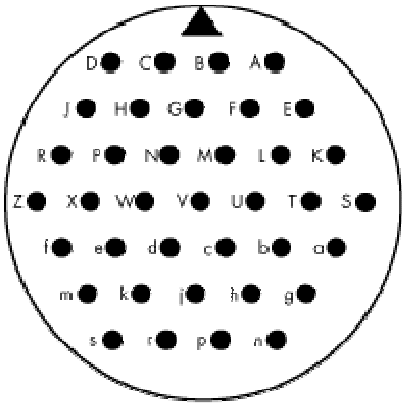
stage audio works

ROUND AUDIO CONNECTOR SYSTEMS 37-PIN

separate grounding up to 12 channels, overall shielding (PE) on Pin Z

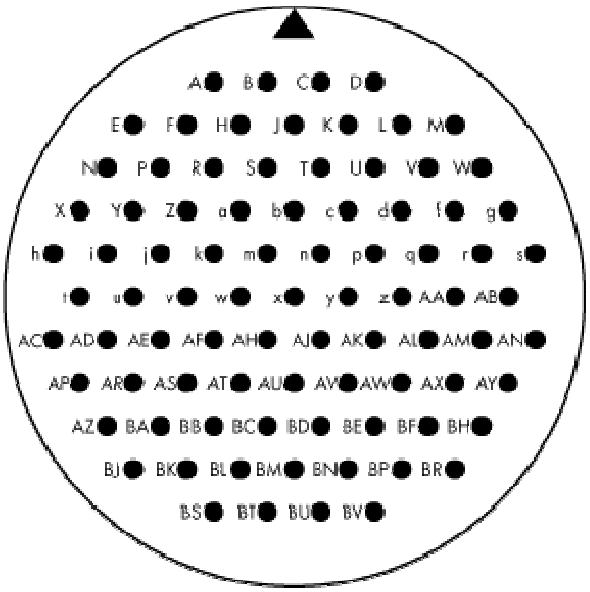
Ch. No.	Hot +	Cold -	Gnd. (shield)
1	E	F	A
2	B	C	G
3	H	J	D
4	S	T	K
5	L	M	U
6	V	W	N
7	P	R	X
8	a	b	g
9	c	d	j
10	e	f	m
11	n	p	h
12	r	s	k

Female Wiring Side



ROUND AUDIO CONNECTOR SYSTEMS 85-PIN

Female Wiring Side



separate grounding up to 28 channels, overall shielding (PE) on Pin BV

Overall shielding: BV

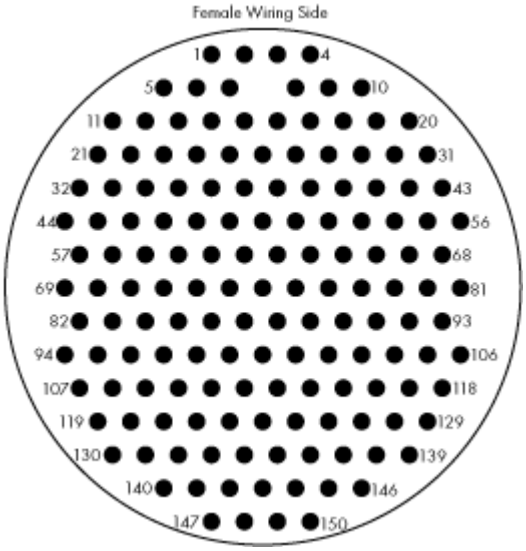
Ch. No.	Hot +	Cold -	Gnd. (shield)
1	A	B	C
2	E	F	H
3	J	K	L
4	N	P	R
5	S	T	U
6	X	Y	Z
7	a	b	c
8	d	f	g
9	h	i	j
10	k	m	n
11	p	q	r
12	t	u	v

Ch. No.	Hot +	Cold -	Gnd. (shield)
13	w	x	y
14	z	AA	AB
15	AC	AD	AE
16	AF	AH	AJ
17	AK	AL	AM
18	AP	AR	AS
19	AT	AU	AV
20	AW	AX	AY
21	AZ	BA	BB
22	BC	BD	BE
23	BJ	BK	BL
24	BM	BN	BP

Ch. No.	
25+	BS
25-	BT
25G	BU
26+	BF
26-	BH
26G	BR
27+	M
27-	V
27G	W
28+	D
28-	s
28G	AN

stage audio works

ROUND AUDIO CONNECTOR SYSTEMS 150-PIN



separate grounding up to 48 channels, overall shielding (PE) on Pin 150

Ch. No.	Hot +	Cold -	Gnd. (shield)
1	1	2	3
2	5	6	7
3	8	9	10
4	11	12	13
5	14	15	16
6	17	18	19
7	21	22	23
8	24	25	26
9	27	28	29
10	20	30	31
11	32	33	34
12	35	36	37
13	38	39	40
14	41	42	43
15	44	45	46
16	47	48	49
17	50	51	52
18	53	54	55
19	57	58	59
20	60	61	62
21	63	64	65
22	66	67	68
23	69	70	71
24	72	73	74

Ch. No.	Hot +	Cold -	Gnd. (shield)
25	75	76	77
26	78	79	80
27	82	83	84
28	85	86	87
29	88	89	90
30	91	92	93
31	94	95	96
32	97	98	99
33	100	101	102
34	103	104	105
35	56	81	106
36	107	108	109
37	110	111	112
38	113	114	115
39	116	117	118
40	119	120	121
41	122	123	124
42	125	126	127
43	139	128	129
44	130	131	132
45	133	134	135
46	136	137	138
47	140	141	142
48	143	144	145

stage audio works