GHIELMETTI

Compact Audio Patch Bay

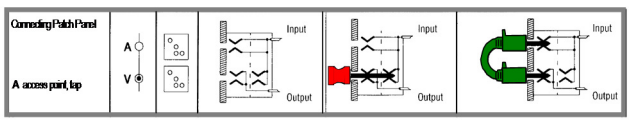
CSF 1x48 AV 3/1 – CSF 1x48 AV 3/2 – CSF 2x48 A 3/1

- Offers highest contact reliability
- Self-cleaning Gold Double Contacts
- Multitude of connections with connecting modules
- 96 channels (2x48) in 19", 1RU and 2 RU
- For digital and analog signals
- >90 dB crosstalk
- Backlit version

Description

The Ghielmetti self-cleaning double gold contact system guarantees a high secure connecting system over live time.

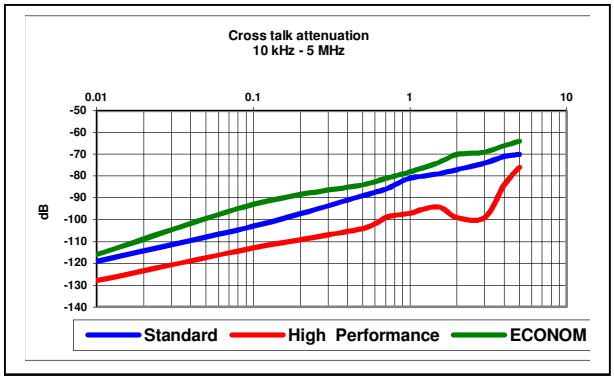
These are patching systems all suitable for AES/EBU digital audio, RS422 and other data applications, as well as analogue audio. The basis of the system is a series of pairs of gold plated contact wafers, which run vertically within each panel (three pairs of wafers per channel per layer - A, B and ground). There are two layers of contacts in each panel, without connection between the layers. Circuit routing is by pins which make connections between the layers. In its basic form therefore, the patch panel has no "normalling". By the design of the exact lengths of the contact wafers, the precise patching and normalling possibilities are achieved. Routing is achieved by inserting a plug into the lower row (the connection is made by the long pins on this plug linking the front and rear contact wafers). Patching does not break any contacts, so a "source" on the top row is simply patched to the "destination" on the lower row, just like a conventional jack field. Effectively, with a plug inserted, the panel acts like a "half-normalled" jack field, which is the way virtually all jack fields are wired in use. The major differences are that as there are no socket switch contacts, as in a normal jack field, a possible source of noise is removed. Additionally, "sources" and "destinations" are in the no-load state until connected by a normalling plug or patchcord, unlike a jack field where "normal" paths are chosen at system installation, which can result in unwanted normal paths at a later date. All connections are 3-pole, fully isolated. The fourth pin on the patching connectors is a polarising pin to ensure phase integrity, and performs no electrical function. Unlike conventional jack fields, Ghielmetti patch panels are suitable for use with both analogue and digital signals, even mixed within the same panel. Exceptional crosstalk performance of over 100dB between adjacent channels ensures that even low level digital signals pass with a minimal error rate, even when adjacent to channels with high level signals. Both balanced AES/EBU 110 ohm and unbalanced SPDIF 75 ohm signals can be handled. Panels are available with various terminations. On CSF, USF, Blueline and Econom ranges these are modular units that plug onto the back of the panel (one module per 8 channels, except SAG type which is one connector per channel), thus enabling cable termination to take place without the patch panel itself being present.

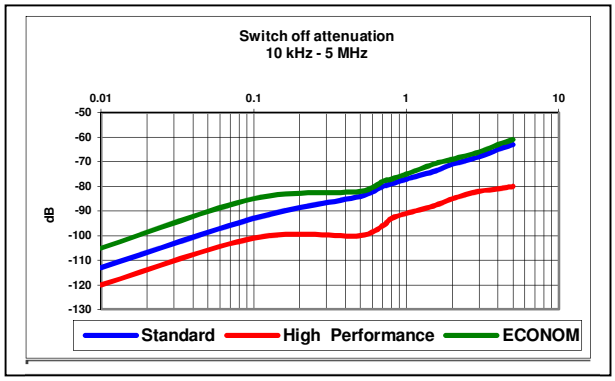


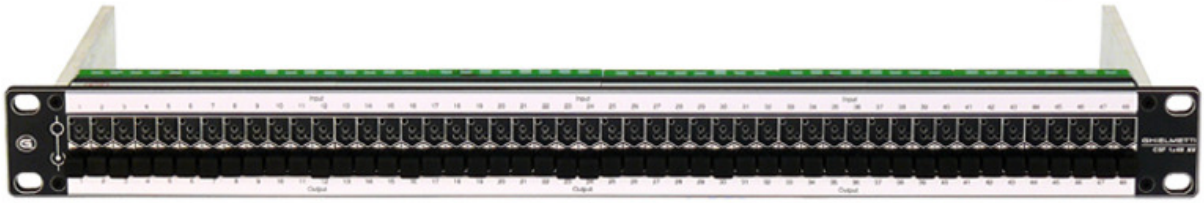
Technical Data

Electrical		
Signal level	0 Hz < f < 5 MHz	-64 dBu to + 36 dBu
Cross talk	30 Hz < f < 30 MHz	< 90 dB
Switch off attenuation	30 Hz < f < 30 MHz	< 90 dB
Insertion loss	30 Hz < f < 30 MHz	< 0.01 dB
Symmetry loss	30 Hz < f < 30 MHz	< 60 dB
Operation Voltage max.		50 VDC/VAC
Test voltage		1000 V
Contact resistance (bus bar-plug-bus bar)		0.8 ... 1 mΩ
Resistance of contact pair		0.4 mΩ
Insulation resistance		10^3 MΩ
Capacity of 2 parallel pairs of contacts		< 5 pF
CE / EMC / ESD		yes

Mechanical	
Line pitch	3 mm
Bus bars material	Cu Be
Surface	0.25 µ Au over 2 µ Ni
Connecting plugs	brass
Surface	0.25 µ Au over 2 µ Ni
Inserting, extracting force	7 N
Contact force	2 N
Number of insertion without loss of contact force	> 10'000
Pin diameter	1.6 mm
Line distance (pitch)	3 mm

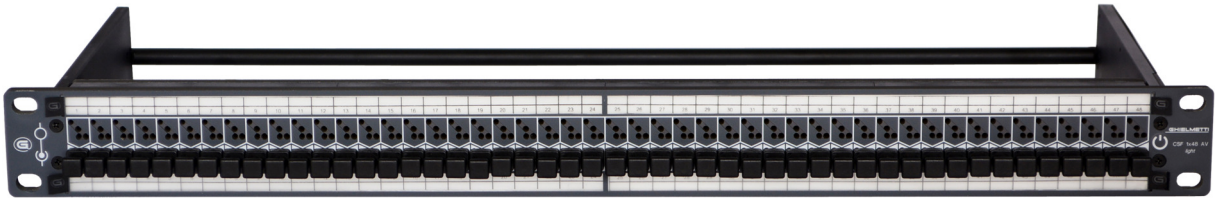






CSF 1x48 AV 3/1
19", 1U - 48 Channels in 48 channels out – Normalling with normalling pins -

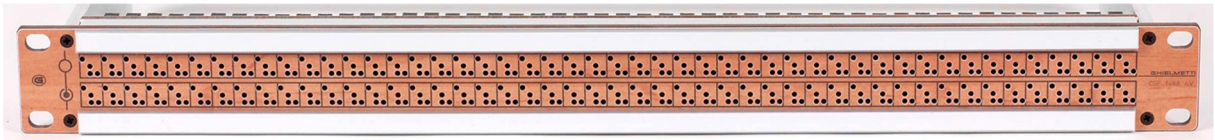
CSF 1x48 AV 3/2
19", 2U - 48 Channels in 48 channels out – incl. normalling pins



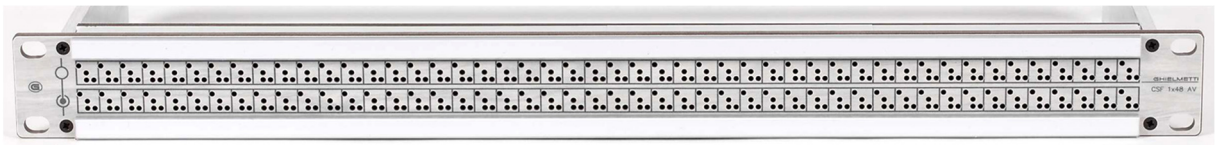
CSF 1x48 AV 3/1 Light
Backlight labelling strips - 48 channels in, 48 channels out – incl. normalling-pins - 19", 1U

CSF 2x48 A 3/1 – Standart Patchpanel – non normalling
96 channels in 2 rows – (without normalling pins) - 19", 1U

CSF 1x48 AV with front panel in different design

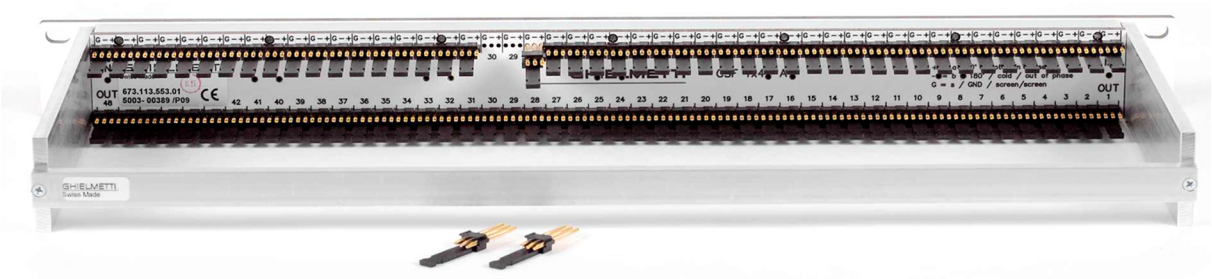


CSF 1x48 AV 3/1 SA WoodStar design: wooden structure, brown

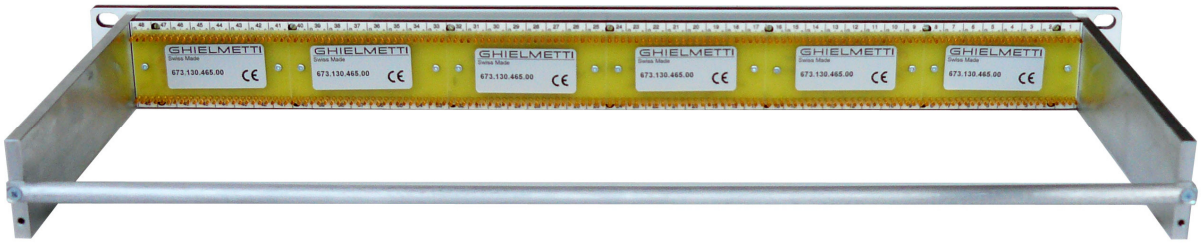


CSF 1x48 AV 3/1 SA SilverStar design: wooden structure, silver

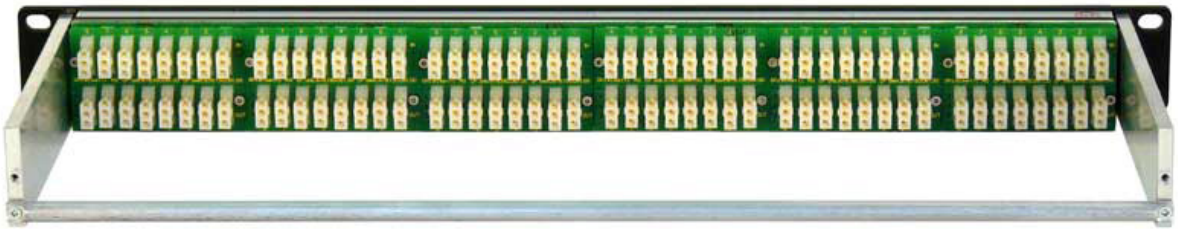
Interconnecting facilities



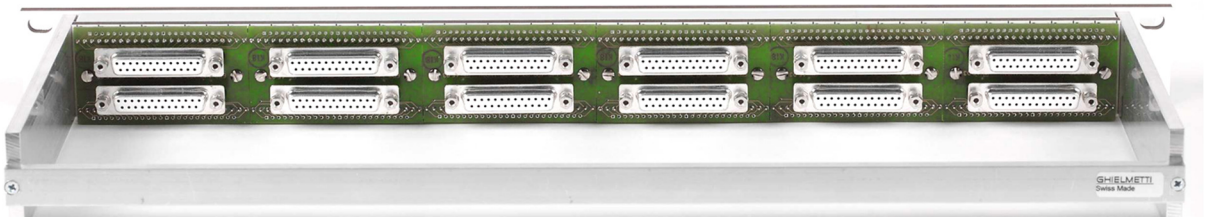
CSF 1x48 AV 3/1 SA G 673.113.553.13 19",1RU, incl. 96 solder lug connector GAS 323 LA C, cabling bar and 48 normalling plugs



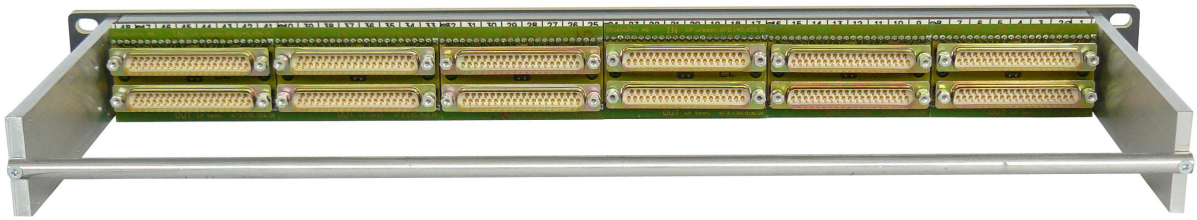
CSF 1x48 AV 3/1 LA M 673.113.553.12 19",1RU, incl. 6 solder lug connecting modules, cabling bar and 48 normalling plugs



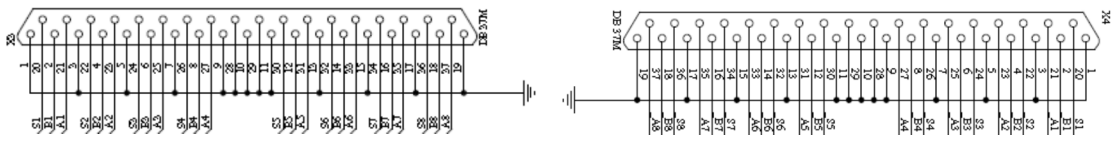
CSF 1x48 AV 3/1 E3 673.113.553.32 19",1 RU, incl. 6 pcs EDAC E3 3-pole connecting modules, cabling bar and 48 normalling plugs

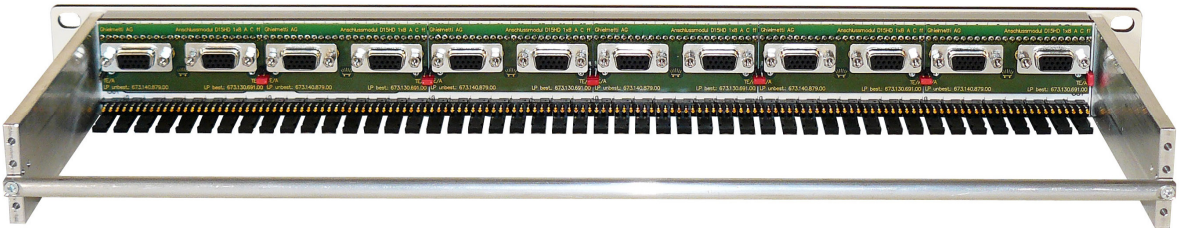


CSF 1x48 AV 3/1 DS25Sff 673.113.553.41 19",1RU, incl. 6 D-Sub 25-pole modules, **Standard** pin out,cabling bar, 48 normalling plugs
CSF 1x48 AV 3/1 DS25Hff 673.113.553.43 19",1 RU, incl. 6 D-Sub 25-pole modules, **Harrison/ARRI** pin out, cabling bar, 48 normal ling plugs
CSF 1x48 AV 3/1 DS25Tff 673.113.553.48 19", 1RU, incl. 6 SubD 25-pole modules, **Tascam** pin out, cabling bar, 48 normalling plugs

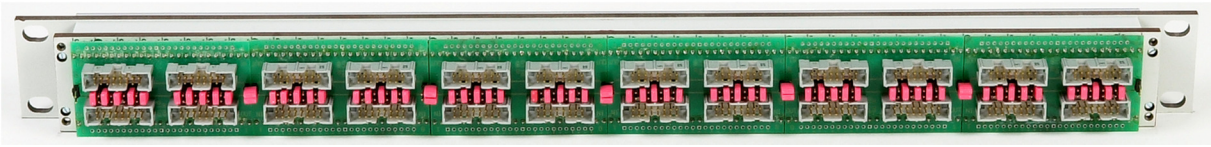


CSF 1x48 AV 3/1 DS37mm 673.113.553.45 19",1RU, incl. 6 D-Sub 37-pole modules, cabling bar, 48 normalling plugs

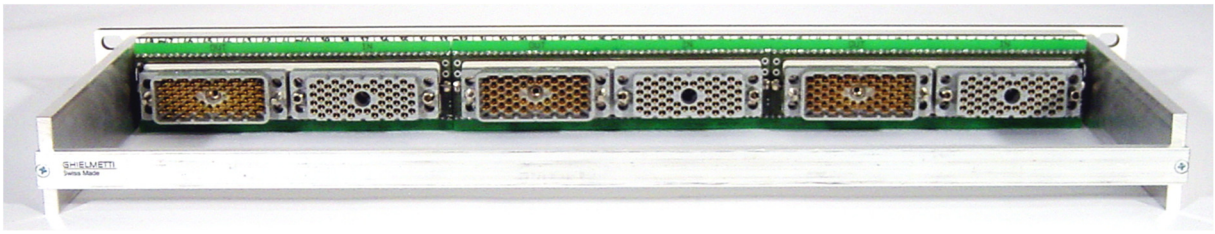




CSF 1x48 AV 3/1 D15 SAG 673.113.553.49 19",1RU, incl. 6 SubD 15-pol connector modules and 48 solder lug connectors

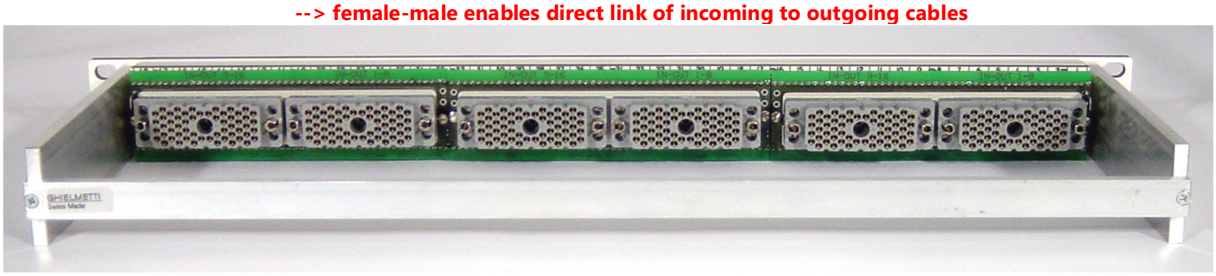


CSF 1x48 AV 3/1 FB plus 673.113.553.51 19",1RU, incl. 6 ribbon cable modules, cabling bar and 48 normalling plugs



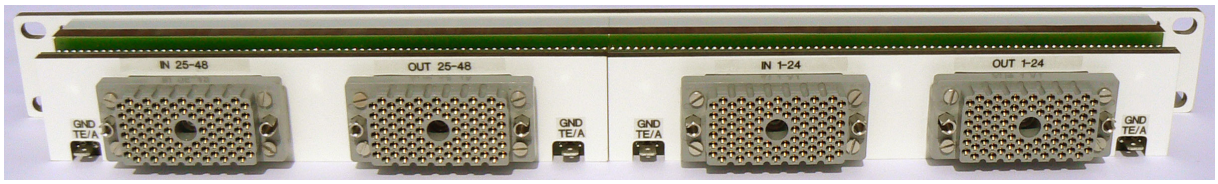
CSF 1x48 AV 3/1 EDAC fm 673.113.553.81 19",1RU incl. 3 EDAC 56-pole connector modules, cabling bar and 48 normalling plugs

--> female-male enables direct link of incoming to outgoing cables



CSF 1x48 AV 3/1 EDAC ff 673.113.553.82 19",1RU incl. 3 EDAC 56-pole connector modules, cabling bar and 48 normalling plugs

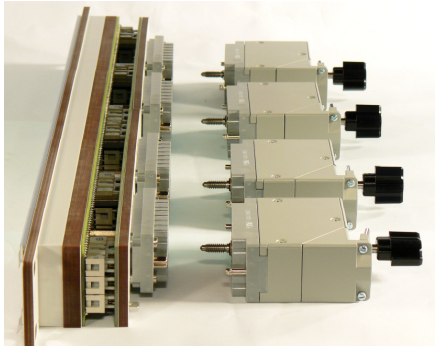
CSF 1x48 AV 3/1 EDAC90 ff with EDAC 90-pole multicore connectors



CSF 1x48 AV 3/1 EDAC90 ff 673.113.553.83 19", 1U, incl. 2 EDAC 90-pole connector modules, cabling bar and 48 normalling plugs

The world most compact interconnecting Patch

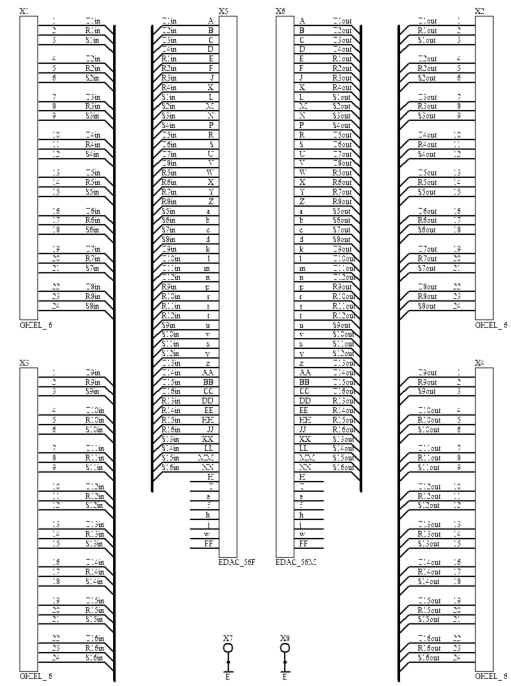
96 channels in 19", 1 RU - 3-pole per channel (+,-, gnd)
total of 288 connections - additional screenings for high channel separation > 90 dB



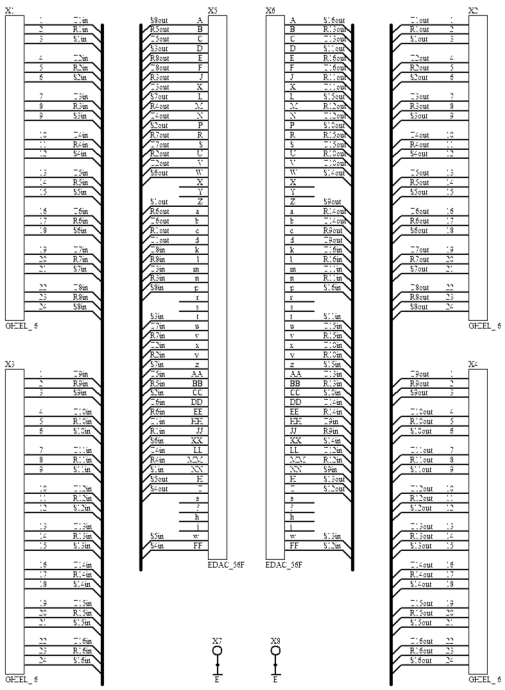
Pinout to EDAC interconnecting modules

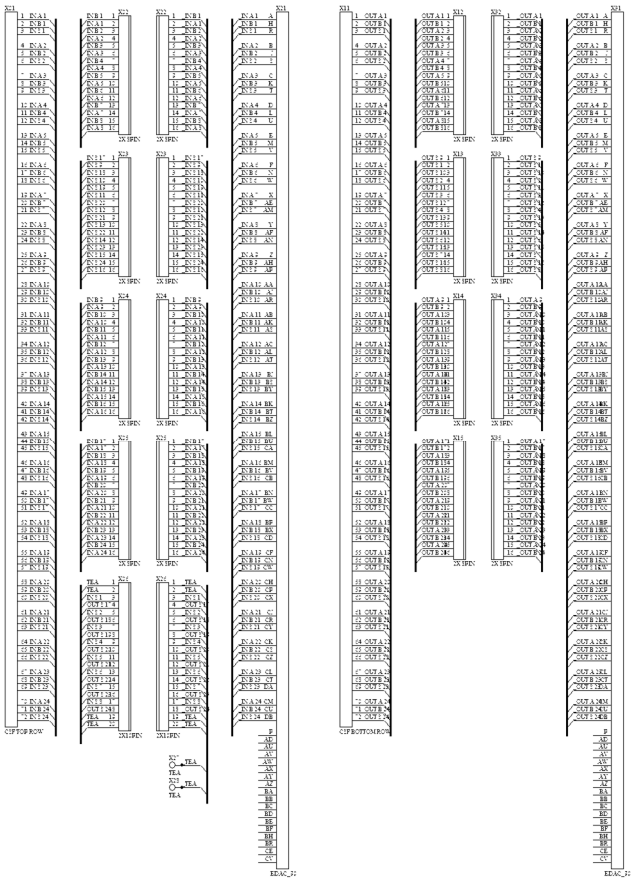
(56-pole and 90-pole EDAC connectors, female/male)

CSF 1x48 AV 3/1 EDAC56 fm Art. 673.113.553.81



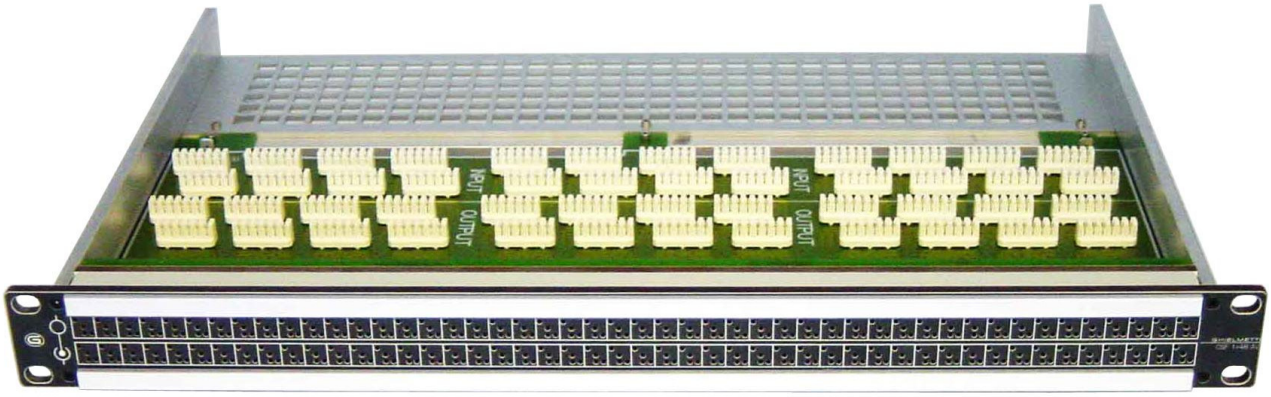
CSF 1x48 AV 3/1 EDAC56 ff Art. 673.113.553.82





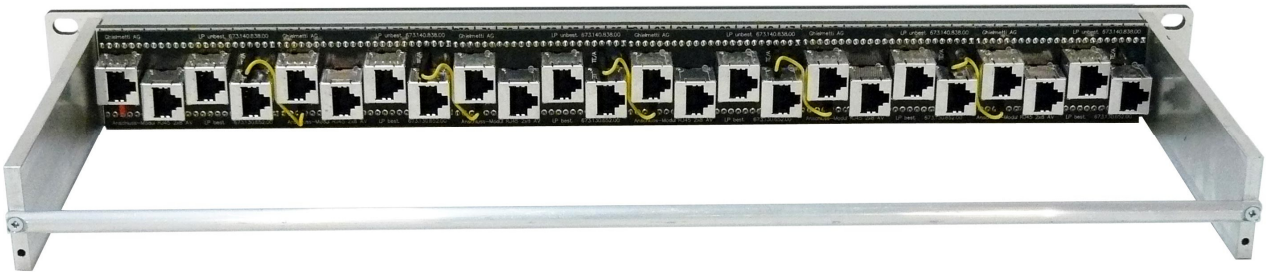
KRONE LSA PLUS

96 channels in 19”, 1 RU, LSA-PLUS



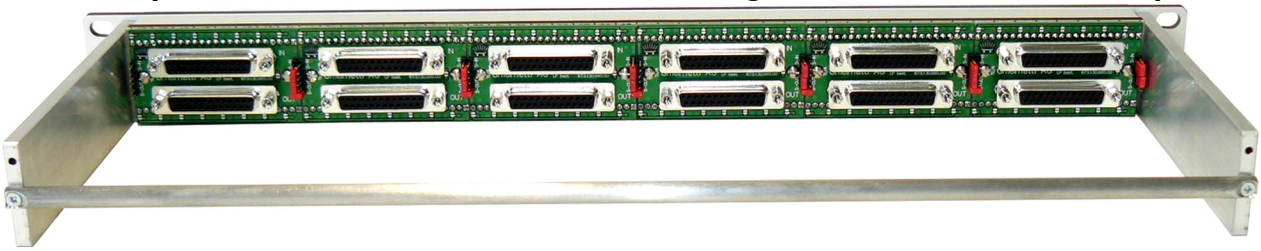
CSF 1x48 AV 3/1 KP C	19”,1 RU, LSA-PLUS connector plate, incl. 48 normalling pins	673.113.553.61

RJ45 connector modules

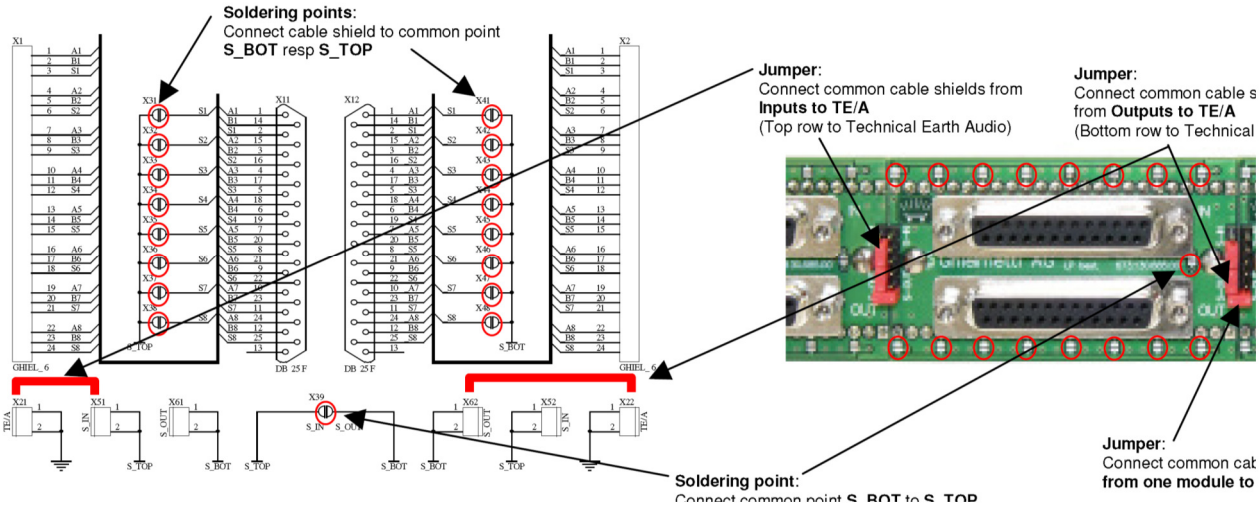


CSF 1x48 AV 3/1 RJ45	19”,1RU, incl. 6 RJ45 8-pol connector modules	673.113.553.95

Sub-D 25-pole connector modules with common ground facilities, standard pin out

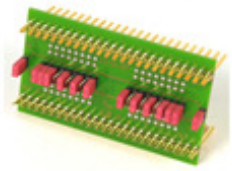


CSF 1x48 AV 3/1 D25Sffcs	19”, 1RU, incl. 6 D-Sub 25-pole modules for common-shield connecting facilities	673.113.553.47



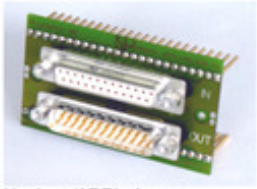
Connecting modules and solder connectors:

LA 2x8 AV C plus



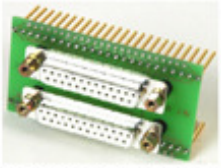
673.130.306.00

D25 1x8 AV C ha fm



Harrison /ARRI pin out:
673.130.547.00

D25 1x8 AV C



Standard pin out: 673.130.685.00
Harrison / ARRI pin out: 673.130.483.00
Tascam pin out: 673.130.686.00

LA 2x8 AV C

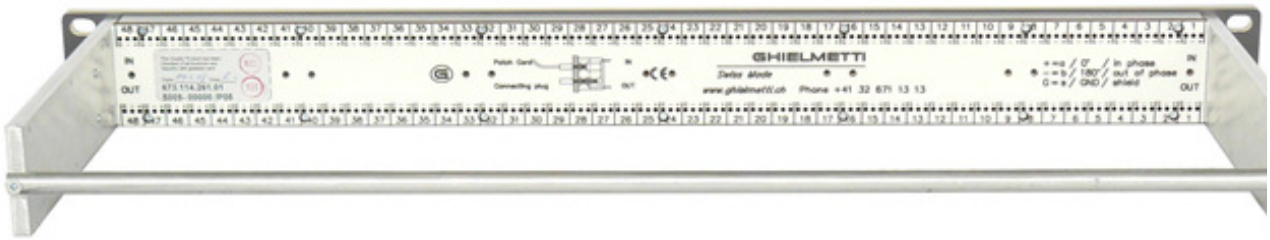
673.130.465.00

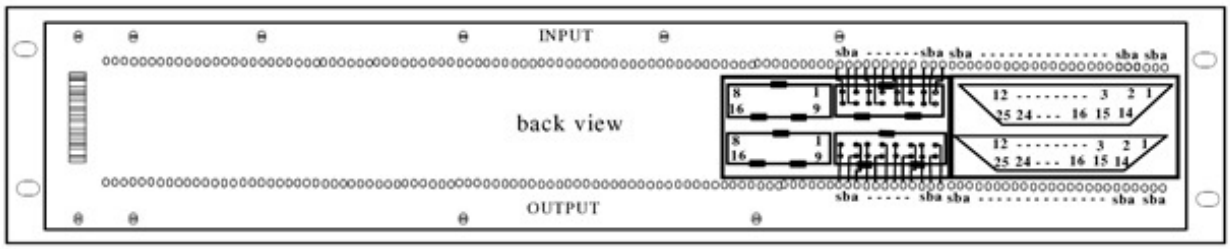
GAS 323 LA
Solder lug conn

673.910.311.01

Interconnection with D-Sub 25-pole or ribbon cable 16-pole (DIN 41651) connecting modules

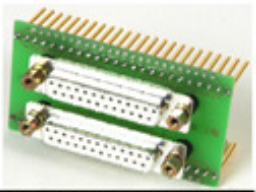
The connecting modules have to be inserted following the sketch below. The above D-Sub connector serves the input signals, the lower the output signals. Input and output can also be exchanged. The signal 1a (a-wire of channel 1) is situated as from the backside view at most right side connection of the connecting plug (refer to the sketch below). The wiring follows the rule: 1a/1b/1 screen; 2a/2b/2 scre etc.





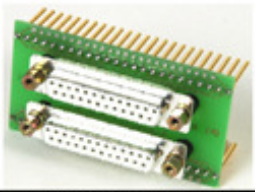
DSub 25-pole female - Standard
673.130.685.00

Channel	Signal	D-Sub female	
1	a	1	
	b		14
	GND	2	
2	a		15
	b	3	
	GND		16
3	a	4	
	b		17
	GND	5	
4	a		18
	b	6	
	GND		19
5	a	7	
	b		20
	GND	8	
6	a		21
	b	9	
	GND		22
7	a	10	
	b		23
	GND	11	
8	a		24
	b	12	
	GND		25
	NC	13	



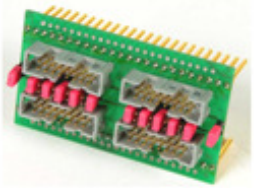
DSub 25-pole female - Harrison /ARRI
673.130.483.00

Channel	Signal	D-Sub female	
1	GND	1	
	a		14
	b	2	
2	GND		15
	a	3	
	b		16
3	GND	4	
	a		17
	b	5	
4	GND		18
	a	6	
	b		19
5	GND	7	
	a		20
	b	8	
6	GND		21
	a	9	
	b		22
7	GND	10	
	a		23
	b	11	
8	GND		24
	a	12	
	b		25
	NC	13	

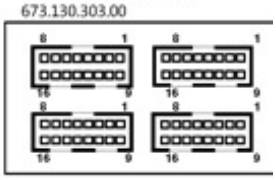


DSub 25-pole, female - TASCAM
673.130.686.00

Channel	Signal	D-Sub female	
8	a	1	
	b		14
	GND	2	
7	a		15
	b	3	
	GND		16
6	a	4	
	b		17
	GND	5	
5	a		18
	b	6	
	GND		19
4	a	7	
	b		20
	GND	8	
3	a		21
	b	9	
	GND		22
2	a	10	
	b		23
	GND	11	
1	a		24
	b	12	
	GND		25
	NC	13	

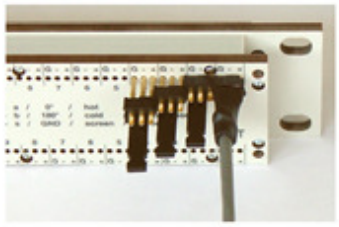


FB 2x8 AV C plus
(Scotch flex 2516-6002)
673.130.303.00



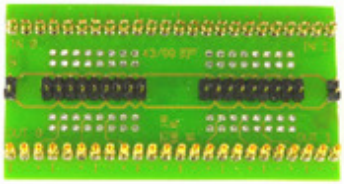
Ribbon cable connector
Scotch flex 2516-6002 DIN 41651
673.130.303.00

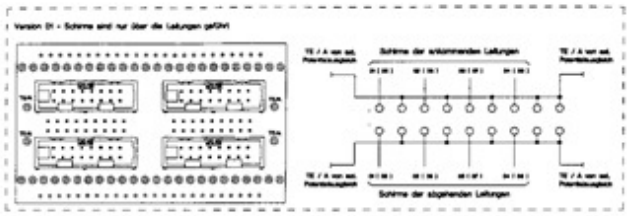
Channel	Signal	Pin	
1	a	1	
	b		9
	GND	2	10
2	a	3	
	b		11
	GND	4	12
3	a	5	
	b		13
	GND	6	14
4	a	7	
	b		15
	GND	8	16



Routing of the cable shields throughout the Patch Bay in view of a specific ground system:

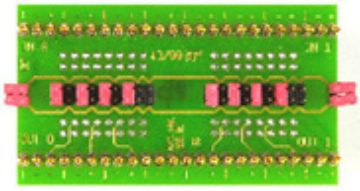
A) No jumpers

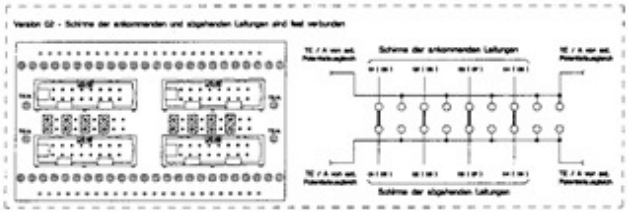




The shield has been connected from the input to the output only by the normalling pins

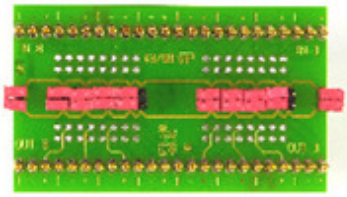
B) With jumpers "normal through":

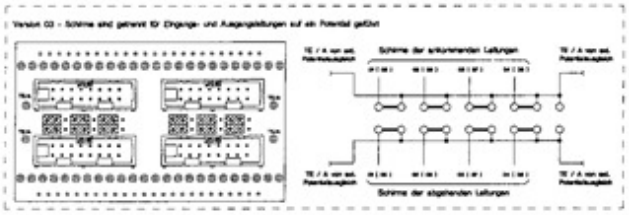




the cable shields are always connected

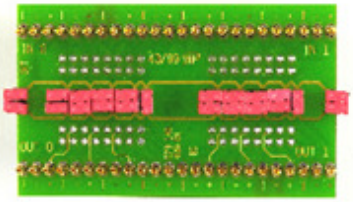
C) With jumpers horizontal:

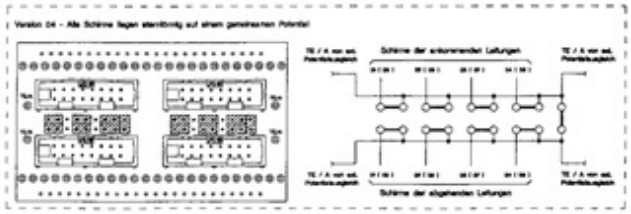




All incoming and outgoing cable shields are shorted

D) With jumpers horizontal and interconnected:

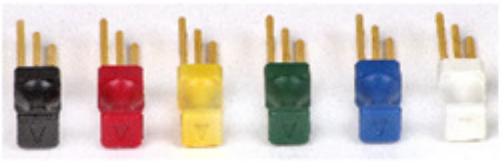




All incoming and outgoing cable shields are shorted and may be connected to a common technical earth of the grounding system.

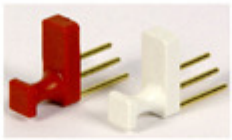
Functional description of CSF 1x48 AV

3-pole-normalling plugs



GVS 323 c sw	3-pole, black	673.910.079.00
GVS 323 c rt	3-pole, red	673.910.079.02
GVS 323 c gb	3-pole, yellow	673.910.079.04
GVS 323 c gn	3-pole, green	673.910.079.05
GVS 323 c bl	3-pole, blue	673.910.079.06
GVS 323 c ws	3-pole, white	673.910.079.09

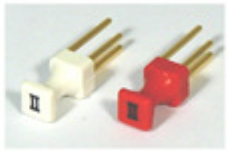
3-pole-normalling plugs with locking function



GVS 323 d rt 673.910.302.02
GVS 323 d ws 673.910.302.09

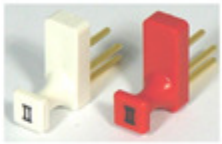
3-pole-locking plug:
avoids parallel tap of the incoming channel

2-pole-normalling plugs



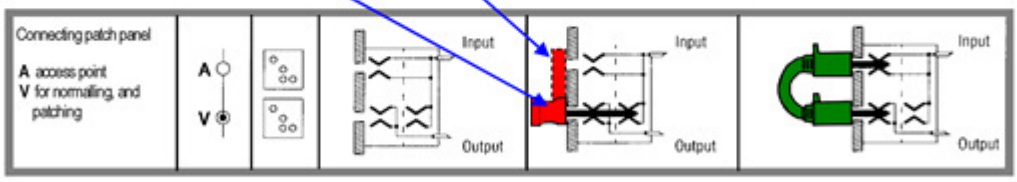
GVS 322 c ws 673.910.313.09
GVS 322 c rt 673.910.313.02

2-pole-normalling plugs with locking function



GVS 322 d ws 673.910.302.19
GVS 322 d rt 673.910.302.12

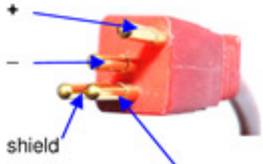
2-pole-locking plug:
avoids parallel tap of the incoming channel



Cable connector (G3P)

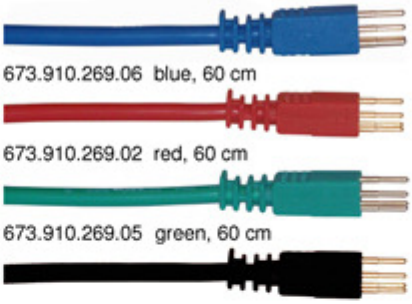
(not suitable for CSF patch panels)

GKS 313 m sw	schwarz	673.910.201.10
GKS 313 m rt	rot	673.910.201.12
GKS 313 m gb	gelb	673.910.201.14
GKS 313 m gn	grün	673.910.201.15
GKS 313 m bl	blau	673.910.201.16



Indicate upright position of patch connector

coding pin



673.910.269.06 blue, 60 cm

673.910.269.02 red, 60 cm

673.910.269.05 green, 60 cm

GMK 313/30 d black, 30 cm	673.910.269.20
GMK 313/60 d black, 60 cm	673.910.269.00
GMK 313/90 d black, 90 cm	673.910.269.10
GMK 313/120 d black, 120 cm	673.910.269.30
GMK 313/180 d black, 180 cm	673.910.269.40
GMK 313/250 d black, 250 cm	673.910.269.50

Patch cords with colour markings available:

Adapter cable XLR to G3P (Ghielmetti 3-pol connector)

GXK 313/30 f	black, 30 cm, female	673.910.301.05
GXK 313/30 m	black, 30 cm, male	673.910.300.05
GXK 313/60 f	black, 60 cm, female	673.910.301.02
GXK 313/60 m	black, 60 cm, male	673.910.300.02
GXK 313/90 f	black, 90 cm, female	673.910.301.01
GXK 313/90 m	black, 90 cm, male	673.910.300.01
GXK 313/120 f	black, 120 cm, female	673.910.301.00
GXK 313/120 m	black, 120 cm, male	673.910.300.00
GXK 313/180 f	black, 180 cm, female	673.910.301.03
GXK 313/180 m	black, 180 cm, male	673.910.300.03
GXK 313/250 f	black, 250 cm, female	673.910.301.04
GXK 313/250 m	black, 250 cm, male	673.910.300.04

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GMK 313/60 d M sw, schwarz, 30 cm		673.910.281.20
GMK 313/60 d M sw, schwarz, 60 cm		673.910.281.00

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