STUDER

PROFESSIONAL AUDIO EQUIPMENT

A827 MCH
Multichannel Tape Recorder
Order Specifications

Technical data

Tape speeds	**Nominal**	**ips: 30 – 15 – 7,5**	
		cm/s: 76,2 – 38,1 – 19,05	
		adjustable by	**± 0.2 %**
		in increments of	**0.025 %**
	Variable	Nominal speed ±	**7 semitones**
			+ 54 % to – 35 %
	with actual speed indication programmable either in semitones, % deviation, or IPS		
	Deviation from nominal speed		**max. ± 0.2 %**
Tape slip			**max. 0.1 %**
Tape reels		Up to **14"** (356 mm)	**NAB hub**
Tape width		25.4 mm	**(1")**
		50.8 mm	**(2")**
Wow and flutter	Peak value weighted, measured according to DIN 45507 or IEC Publ. 386, Ambient temperature 0 to 40 °C (32 to 104 °F)		
	at tape speed	30 ips:	**max. 0.03 %**
		15 ips:	**max. 0.04 %**
		7,5 ips:	**max. 0.06 %**
Tape timer	6 position LED display showing hours, minutes and seconds at all tape speeds. In reverse direction passed zero, incrementing with negative sign.		
	Range:		**–9 h 59 min 59 s to 23 h 59 min 59 s**
Spooling speed	programmable		**4 to 590 ips**
	Automatic spooling speed reduction when the tape end approaches.		
Spooling time	10½" reel (2500 ft / 762 m) 15 m/s:		approx. **55 s**
Inputs	with transformer,		**balanced and floating**
	Input impedance, 30 Hz to 20 kHz:		**≥ 8 kΩ**
Input level	– NAB		
	For 0 VU reference level (600 Ω load)		**+ 4 dBu**
	internally adjustable		**– 6 to + 10 dBu**
	– CCIR		
	For peak recording level 6 dB above 0 VU (600 Ω load)		**+ 6 dBu**
	internally adjustable		**0 to + 16 dBu**
	Internal adjustment range of the tape flux with above input levels:		**100 to 1000 nWb/m**
	Maximum input level:		**+ 24 dBu**
Outputs	– without transformer		**electronically balanced**
	Impedance 30 Hz to 20 kHz, load ≥ 200 Ω:		**≤ 40 Ω**
Output level	– NAB		
	For 0 VU reference level (600 Ω load)		**+ 4 dBu**
	internally adjustable		**– 6 to + 10 dBu**
	– CCIR		
	For peak reproduce level (600 Ω load)		**+ 6 dBu**
	internally adjustable		**0 to + 16 dBu**
	(Internal adjustment range of the reproduce gain with a tape flux of 100 to 1000 nWb/m)		
Maximum output level	– Balanced	Load 600 Ω	**+ 24 dBu**
	– Unbalanced	Load 600 Ω	**+ 20 dBu**
	– Balanced	Load 200 Ω	**+ 22 dBu**
	– Unbalanced	Load 200 Ω	**+ 18 dBu**
AUX Sync output	– Unbalanced, transformerless		
	Output level at 250 nWb/m		**0 dBu**
Equalization standards	Switch selectable		**NAB/CCIR**

Equalization time constants	AES	CCIR	NAB
30 ips	**17,5/∞ µs**		
15 ips		**35/∞ µs**	**50/3180 µs**
7.5 ips		**70/∞ µs**	**50/3180 µs**

Frequency response	**Record/reproduce**	30 ips: 50 Hz to 20 kHz ± **2 dB**
		60 Hz to 20 kHz ± **1 dB**
		15 ips: 30 Hz to 20 kHz ± **2 dB**
		60 Hz to 18 kHz ± **1 dB**
		7,5 ips: 30 Hz to 15 kHz ± **2 dB**
		60 Hz to 12 kHz ± **1 dB**
	Sync reproduction	
	Amplifier programming selectable with jumpers	
	"Narrow band"	30 ips: 50 Hz to 12 kHz ± **2 dB**
		15 ips: 30 Hz to 12 kHz ± **2 dB**
		7,5 ips: 30 Hz to 8 kHz ± **2 dB**
	"Wide band"	30 ips: 50 Hz to 20 kHz ± **2 dB**
		15 ips: 30 Hz to 18 kHz ± **2 dB**
		7,5 ips: 30 Hz to 10 kHz ± **2 dB**

Signal-to-noise ratio (record-reproduce)	– CCIR or AES equalization at 30 ips – Relative to a peak level of 6 dB above 0 VU (peak recording level 514 nWb/m)			
CCIR	– Measured with BASF PEM 469 or equivalent tape			
		30 ips 76.2 cm/s	15 ips 38.1 cm/s	7,5 ips 19.05 cm/s
8/16 channels	unweighted 20 Hz to 20 kHz RMS	**64 dB**	**63 dB**	**60 dB**
	weighted acc. CCIR 468-2	**64 dB**	**62 dB**	**59 dB**
	weighted acc. ASA-A (IEC 179)	**69 dB**	**67 dB**	**64 dB**
24 channels	unweighted 20 Hz to 20 kHz RMS	**62 dB**	**60 dB**	**58 dB**
	weighted acc. CCIR 468-2	**62 dB**	**60 dB**	**57 dB**
	weighted acc. ASA-A (IEC 179)	**67 dB**	**65 dB**	**62 dB**
Signal-to-noise ratio (record-reproduce)	– NAB or AES equalization at 30 ips – Relative to 6 dB above reference level (operating level 1028 nWb/m)			
NAB	– Measured with Ampex 456 or equivalent tape			
		30 ips 76.2 cm/s	15 ips 38.1 cm/s	7,5 ips 19.05 cm/s
8/16channels	unweighted 20 Hz to 20 kHz RMS	**71 dB**	**67 dB**	**68 dB**
	weighted acc. ASA-A (IEC 179)	**74 dB**	**71 dB**	**71 dB**
24 channels	unweighted 20 Hz to 20 kHz RMS	**69 dB**	**65 dB**	**67 dB**
	weighted acc. ASA-A (IEC 179)	**72 dB**	**69 dB**	**70 dB**
Signal-to-noise ratio (record-sync)	– CCIR or AES equalization at 30 ips – Relative to a peak level of 6 dB above 0 VU (peak recording level 514 nWb/m)			
CCIR	– Measured with BASF PEM 469 or equivalent tape			
		30 ips 76.2 cm/s	15 ips 38.1 cm/s	7,5 ips 19.05 cm/s
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	weighted acc. CCIR 468-2	**64 dB**	**61 dB**	**59 dB**
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Signal-to-noise ratio (record-sync)	– NAB or AES equalization at 30 ips – Relative to 6 dB above reference level (operating level 1028 nWb/m)			
NAB	– Measured with Ampex 456 or equivalent tape			
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24 channels	unweighted 20 Hz ... 20 kHz RMS	**67 dB**	**65 dB**	**65 dB**
	weighted acc. ASA-A (IEC 179)	**71 dB**	**68 dB**	**69 dB**
Harmonic distortion	– K_3 (third harmonic) at 1 kHz – Tape flux 514 nWb/m			
		30 ips 76.2 cm/s	15 ips 38.1 cm/s	7,5 ips 19.05 cm/s
		max. 1%	**max. 1%**	**max. 1.2%**

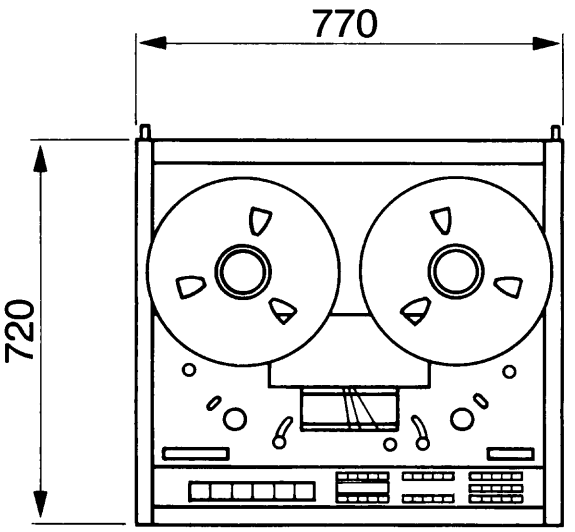
Technical data

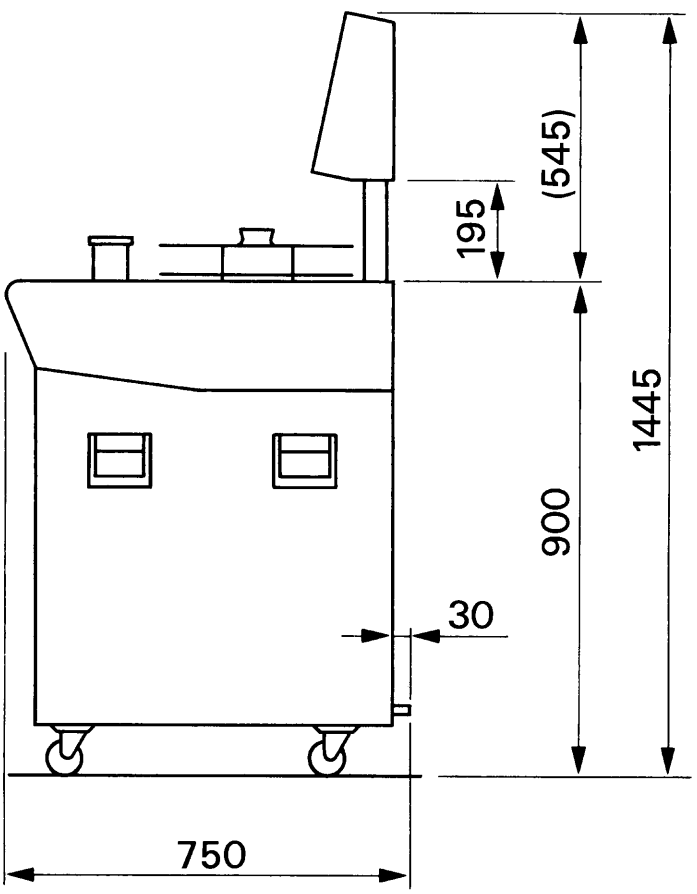
Crosstalk	– Between adjacent tracks (jumper in "narrow band" pos.) – 15 ips	
8/16 channels	– Reproduce	**≥40 dB (80Hz to 12 kHz)**
	– Sync	**≥ 20 dB at 1 kHz** **≥ 10 dB at 10 kHz**
24 channels	– Reproduce	**≥40 dB (100Hz to 12 kHz)**
	– Sync	**≥ 20 dB at 1 kHz** **≥ 10 dB at 10 kHz**
Erase efficiency	At 15 ips, 514 nWb/m, 1 kHz	**≥ 75 dB**
Erase and bias frequency	At all tape speeds:	**153.6 kHz**
VU meters	VU characteristic with peak LED for + 6, + 9 and + 12 dB	
Power requirements	100/120/140; 200/220/240 V switchable	**± 10 %** **50 Hz / 60 Hz**

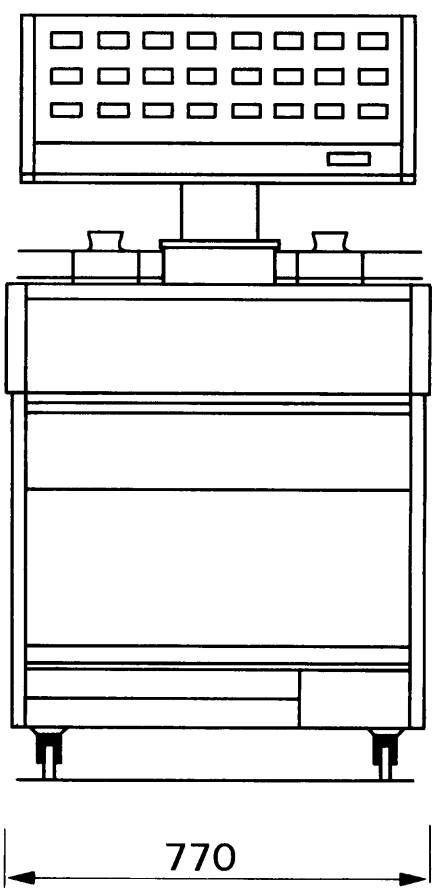
Power input	(at nominal voltage)		
	– Stop		**approx. 400 VA**
	– Record mode		**approx. 580 VA**
	– Fast forward/rewind		**approx. 530 VA**
	– Maximum power input		**approx. 1200 VA**
Tolerable line voltage interruption	Without affecting the operating state:		**max. 100 ms**
Ambient air temperatures		(+ 32 to 104 °F)	**0 to + 40 °C**
Relative humidity	Non-condensing		**30 % to 95 %**
Safety standard	Power inlet according to IEC standard, Publication 65, protection class 1		
EMC standard	FCC class A EN 50081-1 / EN 50082-1		
Weight	**1" version**	net	**170 kg**
		gross (air freight)	**210 kg**
	2" version	net	**189 kg**
	(24 channels)	gross (air freight)	**230 kg**

We reserve the right to make changes as technical progress may warrant.

Dimensions







Specifications in millimeters

Ordering information

	Model designation	Part number
A827-8-1"	8-Channel machine for 1" tape	**60.318.27071**
Note:	the A827-8-1" cannot be upgraded to 16 or 24 channels	
A827-16(24)-2"	16-Channel machine for 2" tape, upgradable to 24 channels, with 24 VU instruments	**60.318.27072**
A827-24-2"	24-Channel machine for 2" tape	**60.318.27073**
Important:	For normal operation, a channel remote control or a parallel audio remote control unit is required for these machines.	

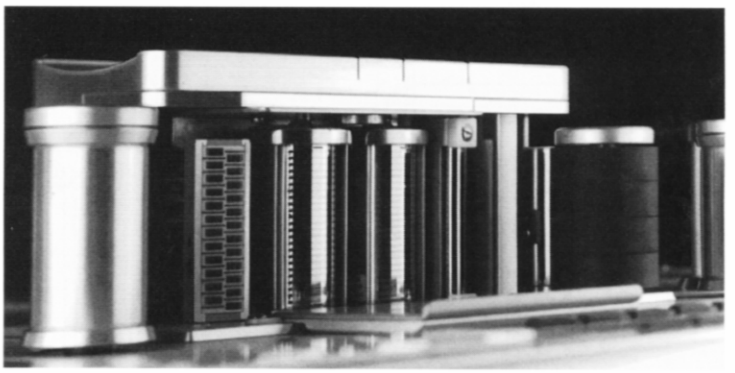
Standard equipment

- Integrated interface for external noise reduction system
- Permanent sync output for noise gate triggering on 24-pin D-type connector
- Console with swivel casters
- Level indicators with VU meters. Additional LEDs for the following peak recording levels: + 6, + 9, + 12 dB
- NAB/CCIR equalization, switchable
- Tape speeds 7,5/15/30 ips
- Dolby HX-Pro selectable/deselectable as a function of the tape speed
- Phase compensated audio electronics
- Electronic timer with real-time display at all tape speeds
- Variable tape speed
- Connectors (parallel) for tape deck and synchronization
- Input: with transformers
- Output: transformerless
- Maximum reel diameter: 14"

Standard calibration data		CCIR	NAB
Tape speed	ips	7,5 15 30	7,5 15 30
	cm/s	19 38 76	19 38 76
Tape type		BASF PEM 469	Ampex 456
Tape flux	nWb/m	510 510 510	250 250 250
Line level		+ 6 dBu	+ 4 dBu
		= 6 VU	= 0 VU

Options

	Model designation	Part number
Conversion kits for tape and track format	24 or 16 channels 2" → 8 channels	**1.820.494.00**
	16 channel headblock (2")	**1.050.151.82**
	24 channel headblock (2")	**1.050.152.82**

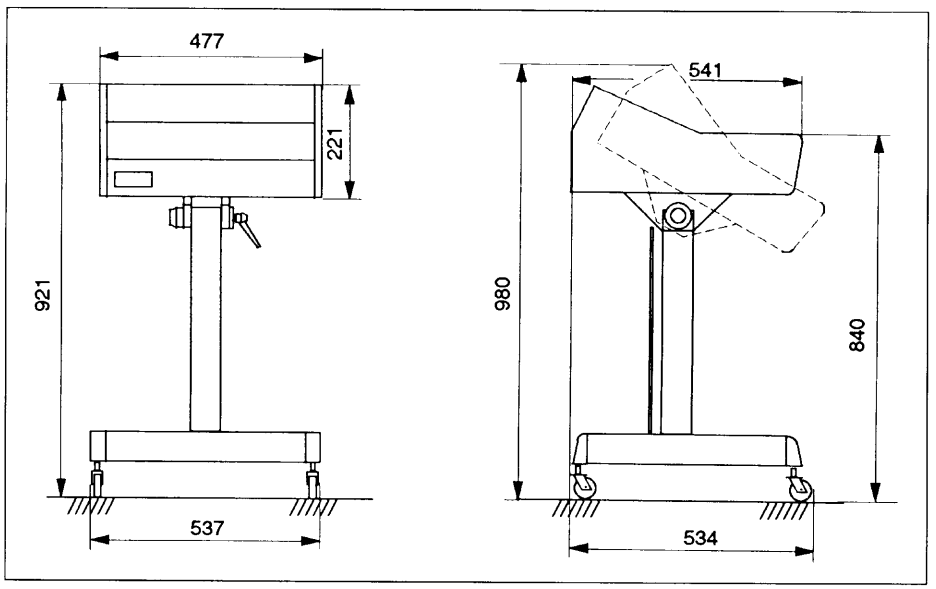


Retrofittable interfaces			
Serial interface RS 232		For general serial control (ASCII protocol) – STUDER TLS4000 synchronizer – Remote timer (21.328.275.00)	**20.820.393.00**
	Matching	cable connector* (D-type) * Included with STUDER remote control units	**20.020.303.07**
Serial interface SMPTE/EBU		Switchable, RS 422 and RS 232 Code: 8 bit binary SMPTE/EBU	**20.820.394.00**
	Matching	cable connector* (D-type)	**20.020.303.07**
Connector panel for synchronizer		For easy connection of the internal TLS4000 synchronizer	**20.827.335.00**

On you order please specify:
Machine designation and part number, desired options with designation and part number, accessories such as consoles, remote controls, etc., standard calibration NAB or CCIR.

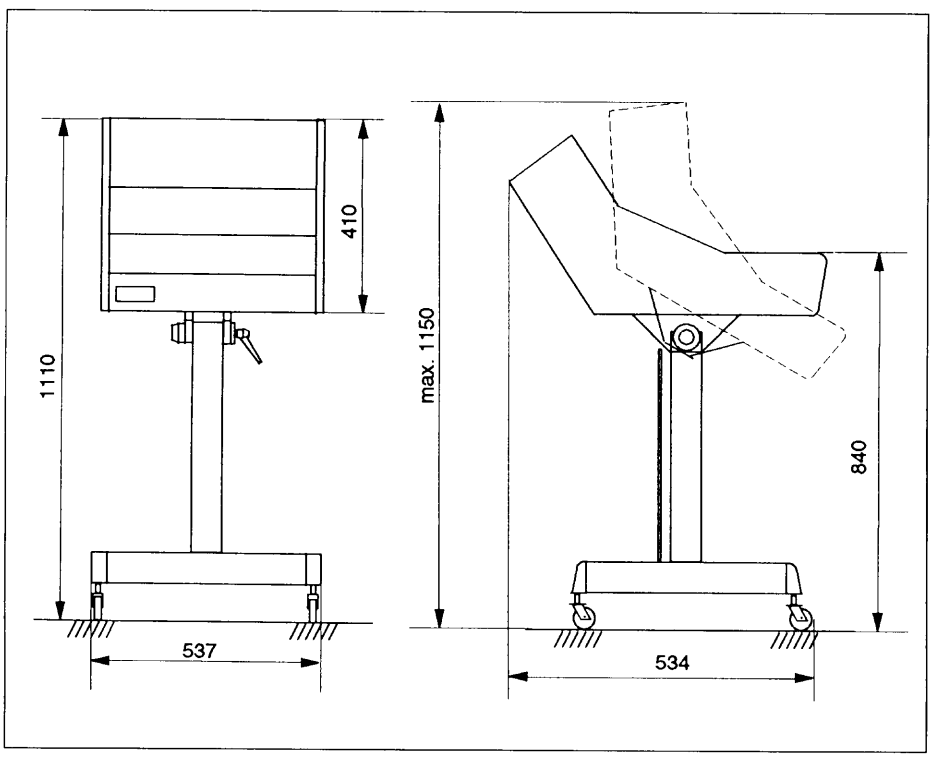
Accessories

	Type designation	Part number
Remote control stand	For 2 operating levels, accommodates up to 2 x 11 standard modules	**1.328.190.00**



Dimensions in mm

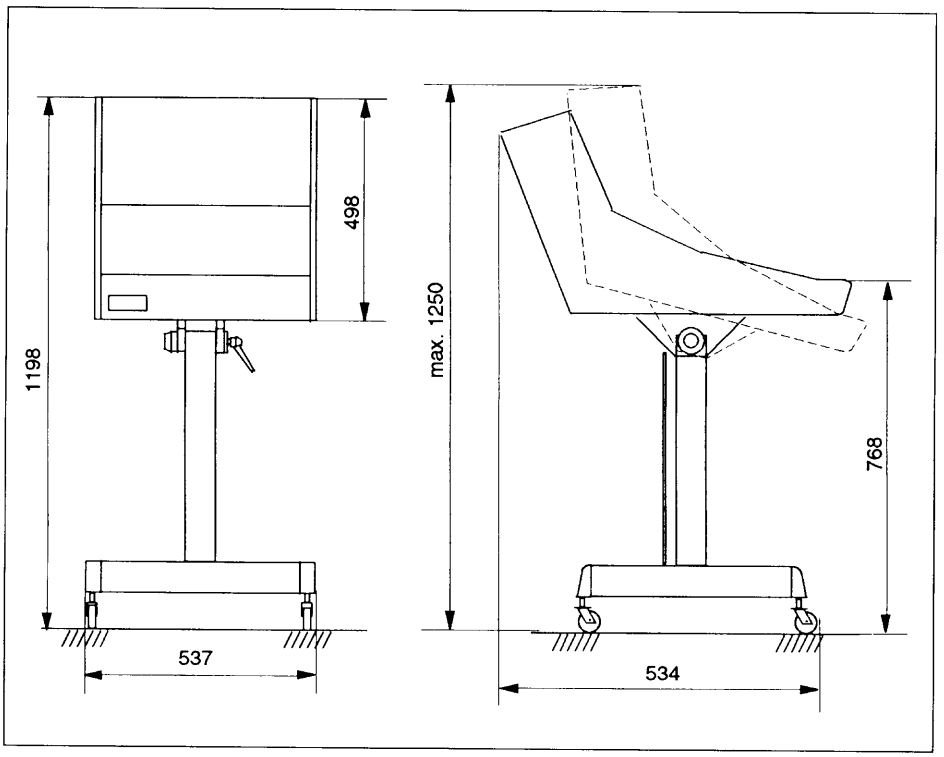
Remote control stand	For 3 operating levels, accommodates up to 3 x 11 standard modules	**1.328.171.00**



Dimensions in mm

Accessories

	Type designation	Part number
Remote control stand	For 3 operating levels, accommodates up to 2 x 11 standard modules and 1 STUDER SYSTEM CONTROLLER SC4008	**1.328.170.00**

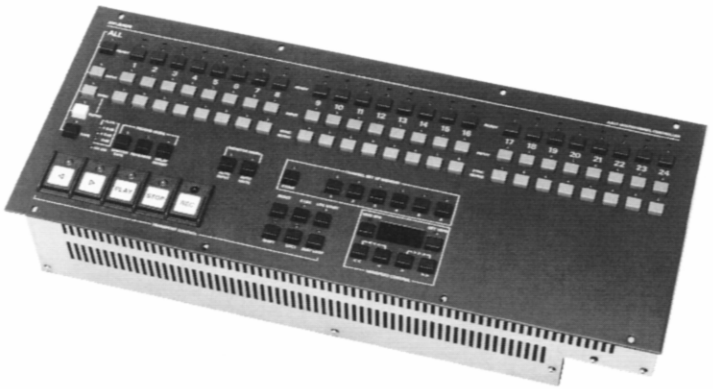


Dimensions in mm

Dimensions of the standard modules	Height: 190 mm Width: 40.6 mm		
Filler panels	Filler panels are used for covering empty slots in remote control stands that are not fully populated:		
	Size:	1 Module	**1.328.185.00**
		2 Modules	**1.328.186.00**
		3 Modules	**1.328.187.00**
		5 Modules	**1.328.189.00**
		11 Modules	**1.328.188.00**
Front panel dimensions (in modules) of the principal remote control units			
	Serial remote control with timer and LAP display		**5 Modules**
	Autolocator		**6 Modules**
	8-Channel audio remote		**11 Modules**
	16/24-Channel audio remote		**11 Modules**

Accessories

Audio and tape deck remote controls



	Type designation	Part number
Audio remote control	For 8 channels	**21.328.521.00**
	For 24 or 16 channels	**21.328.523.81**
	Chassis version, 11 units wide for individual or master switching of all audio channels to: INPUT/SYNC/REPRO and record SAFE/READY – SETUP MEMORY for storing 6 different channel settings – Varispeed and tape deck functions, incl. 15 m connection cable	

Parallel audio channel remote interface		**21.328.540.00**
	For connection to a mixing console (e.g. SSL). Individual channel switching between SAFE and READY, and changeover of all channels between REPRO/INPUT/SYNC, with status indicators. Includes 15 m connection cable	

Autolocator	Desktop model, slanted design	**21.328.240.83**
	Chassis version, 6 units wide	**21.328.230.83**
	– 20 Memory locations – Varispeed control – Tape deck remote control Includes 15 m connection cable	

Serial remote control	Desktop model, slanted design	**20.820.369.00**
	Chassis version, 5 units wide	**20.820.370.00**
	Programmable control panel for all tape machine functions – Incl. remote timer and LAP mode display – Incl. 15 m connection cable	

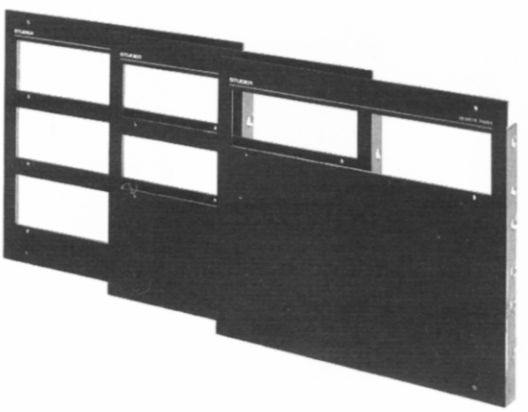
Accessories

Remote timer and serial remote control selector

	Type designation	Part number
Remote timer for RS 232	Desktop model. Can also be integrated by means of face panels. – 5-Digit display – Timer reset and zero loc. functions Includes 15 m connection cable	**21.328.275.00**
Required	option: Serial interface RS 232	20.820.393.00
Matching	**face panels** 190 x 202.9 mm (standard module, 5 rack units)	
	For one remote timer	**1.328.275.31**
	For two remote timers	**1.328.275.32**
	For three remote timers	**1.328.275.33**

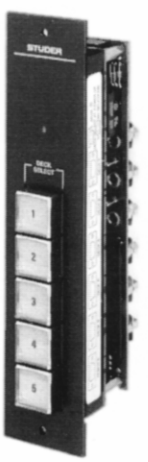
	Type designation	Part number
Remote timer	Desktop model. Can also be integrated by means of face panels. – Real-time display as well as LAP display mode – Timer reset and zero loc. functions – Display of tape deck states Includes 15 m connection cable	**20.820.368.00**
Matching	**face panels** 190 x 202.9 mm (standard module, 5 rack units)	
	For one remote timer	**1.328.270.31**
	For two remote timers	**1.328.270.32**
	For three remote timers	**1.328.270.33**

Face panels for remote timers



Remote control selector	For patching a serial remote control/ remote timer unit (20.820.368.00 / 20.820.369.00 / 20.820.370.00 / 21.328.230.83 / 21.328.240.83) up to five tape machines (A812/A820/A827) STUDER standard chassis module 1 rack unit, includes 1 m connection cable remote control unit → remote control selector	**21.328.248.00**
Required:	– One connection cable (15 m) for each additional tape machine to be controlled (one connection cable is supplied with the remote control unit)*	**1.328.293.81**
	– Serial remote interface	
	STUDER A820:	20.820.345.00
	STUDER A812:	20.812.888.00

*Each tape machine to be controlled must be equipped with a serial remote interface!



Accessories

Parallel remote controls

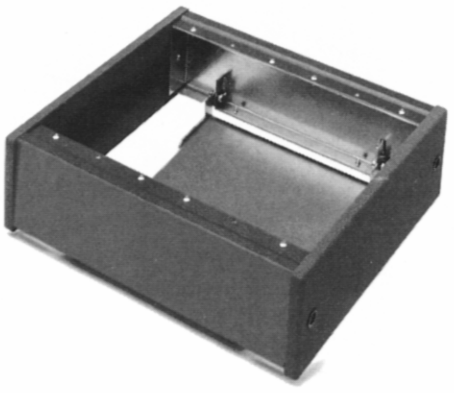
2)

1)

	Type designation	Part number
Tape deck remote control box		**1.328.250.00**
1)	Parallel tape deck remote control, desktop model, slanted design, with wooden side panels. – Includes 15 m connection cable – With empty slot for installing the varispeed remote control module 1.328.253.00	
	Additional connection 25-Pin D-type connector for additional parallel remote control options (varispeed modules, faderstart input)	**1.328.254.00**
Varispeed remote control module		**1.328.253.00**
2)	With precision potentiometer and reference scale. For installation in tape deck remote control box 1.328.250.00, – Includes flat cable connection.	

1) 2) 3)

Remote control modules	Height: 190 mm Width: 40.6 mm (1 rack unit)	
Tape deck remote control module		**20.820.367.00**
1)	Parallel tape deck remote control, chassis version, includes 15 m connection cable. STUDER standard module size: 1 unit	
Varispeed remote control module		**1.328.290.00**
2)	With precision potentiometer and reference scale. Chassis version, STUDER standard module 1 unit wide **Without** connection cable.	
	– Connection cable, 15 m for direct connection to the tape machine.	**1.328.292.00**
	– Flat cable connection 0.3 m for connection to the tape deck remote control module (20.820.367.00)	**1.023.102.03**
Varispeed remote control module		**1.328.280.00**
3)	Digital input of the speed deviation and indication in semitones. Chassis version, STUDER standard module 1 unit wide **Without** connection cable.	
	– Connection cable, 15 m for direct connection to the tape machine.	**1.328.292.00**
	– Flat cable connection 0.3 m for connection to the tape deck remote control module (20.820.367.00)	**1.023.102.03**



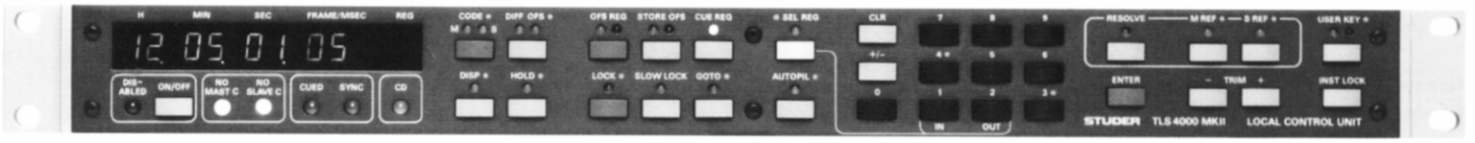
Module box	Desktop model Accommodates up to 6 standard modules 1 unit wide		**1.328.095.00**
Matching	filler panels		
	– Aluminum, anodized	Width 1 unit	**1.038.341.00**
		2 units	**1.038.342.00**
		3 units	**1.038.343.00**
	– Aluminum-grey varnish	Width 1 unit	**1.328.185.00**
		2 units	**1.328.186.00**
		3 units	**1.328.187.00**
		5 units	**1.328.189.00**

Accessories

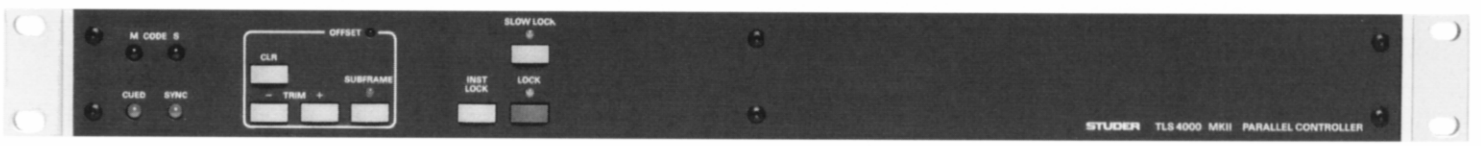
Accessories for synchronization

	Type designation	Part number
Synchronizer	① **TLS4000 MKII** Basic synchronizer. Built-in power supply. RS232/RS422, SMPTE and parallel interfaces.	**69.088.12301**
	Requires: **Interface A827**	**21.812.408.20**

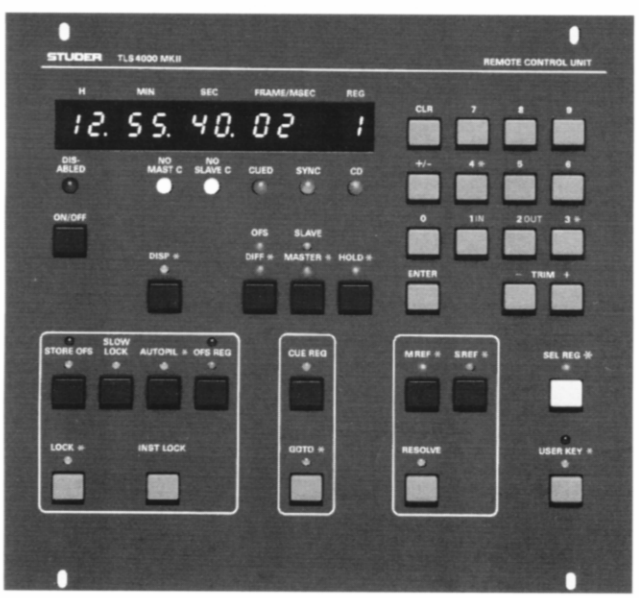
Local control unit	② **LCU/TLS4000 MKII** Control unit for basic synchronizer TLS4000. For functions such as TRIM, LOCATE, EDIT, RESOLVE, ON AIR, etc.	**69.088.12351**



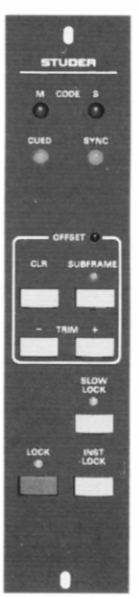
Parallel controller	③ 19" format, 1 rack unit high Control unit for basic synchronizer TLS4000. Same as LCU/TLS4000 MKII, but with reduced function repertoire.	**1.812.370.00**



Remote control unit	④ **RCU/TLS4000 MKII** Remote control unit for basic synchronizer TLS4000. Same function repertoire as item 2.	Chassis model: **1.812.365.00** Desktop model: **1.812.360.00**



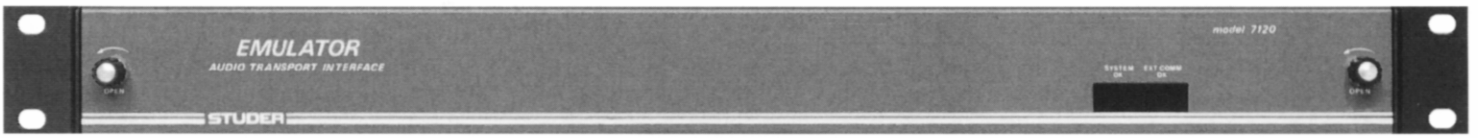
Parallel controller	⑤ Designed as STUDER standard module, 1 unit wide. Control unit for basic synchronizer TLS4000. Same functions repertoire as item 3.	**1.812.375.00**

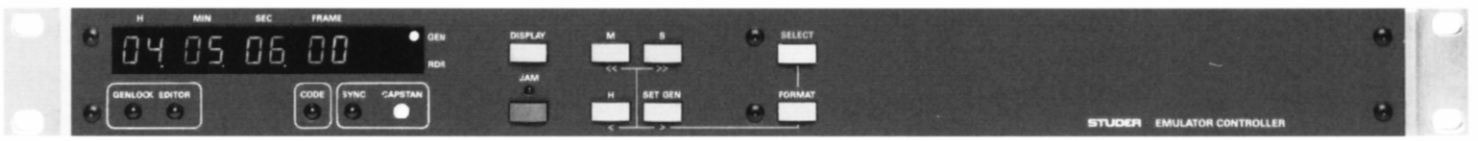


Accessories

Emulator, tape reels

STUDER emulator with control unit	Tape machine interface for video editor (Sony, CMX)	**on request**





Tape reels, reel adapters		
Tape reels	NAB metal reel, empty, 1" (10,5")	**10.213.001.02**
	NAB metal reel, empty, 1" (14")	**10.353.001.01**
	NAB metal reel, empty, 2" (10,5")	**10.213.001.03**
	NAB metal reel, empty, 2" (14")	**10.353.001.02**
Pancake platter	For pancakes (14")	**1.013.401.00**
Dust cover	For all versions	**1.820.300.30**

Some photos show options offered at additional cost.

We reserve the right to make alterations as technical progress may warrant.

Printed in Switzerland 10.26.1700 (Ed. 1292)

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Worldwide: STUDER International, a division of STUDER REVOX AG, Althardstrasse 30 CH-8105 Regensdorf, Switzerland, Telephone +41 1 870 75 11, Telefax +41 1 840 47 37