

RTU513 Remote Terminal Unit DataSheet

Modem FSKM12

Application

The FSKM12 modem is designed for the operation on telecontrol lines together with the PKS RTU 513. However it can also be connected to other data terminal equipments because it operates at the interfaces like a universal FSK-modem in the voice-band range (300-3400 Hz) according to CCITT.

The FSKM12 modem allows the assignment of a two- or four-wire line with communication channels in the CCITT raster for 50 to 2400 Bit/s.



- 24 channels 50 Bit/s (R.35)
- 12 channels 100 Bit/s (R.37)
- 6 channels 200 Bit/s (R.38A)
- 2 channels 600 Bit/s
- 1 channel 1200 Bit/s (V.23)
- 1 channel 2400 Bit/s

A high-resistance staggering is possible with the FSKM12 modem on multi-drop lines. Duplex and half-duplex operation is possible without special additional provisions like butterfly connection according to channel assignment and selected two wire or four-wire line. It is designed for the transfer characteristics of local- cable-wires.

Light emitting diodes indicate the most important operation states and disconnect test sockets on the front plate allow an easy testing and measuring of the VFT-channels as also of the data terminal equipment (DTE) interface signals.

Characteristic

There are two versions (Rubrik) available:

- FSKM12 R0001 5 V DC Supply
- FSKM12 R0002 24 V DC Supply

Characteristic

The audio-frequency carrier is monitored and indicated respectively alarmed by the DCD signal. For multi-drop lines, a carrier drop-out can be signaled with a delay by the alarm relay. The delay time depends hereby on the baud rate.

The alarm relay of the modem responds at carrier drop-out (DCD direct or delayed), at SQL alarm, or at supply voltage failure.

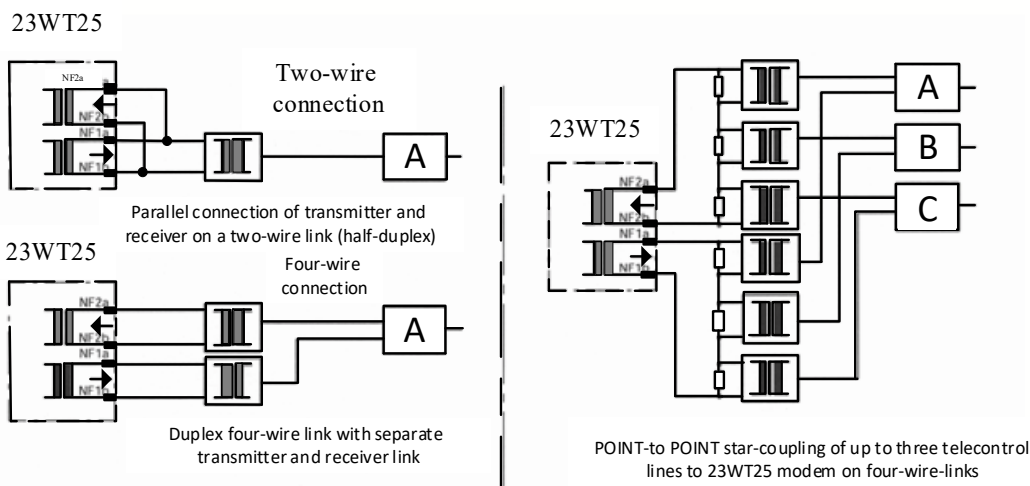
To compensate line distortion on critical transmission links the FSKM12 modem offers the possibility of an adjustable pre-distortion. Depending on the quality condition of the transmission link this pre-distortion can be set in high-pass or low-pass between 0 and 10 dB. The two FSKM12 modems of a transmission link can be configured for test-transmitter and test-receiver to adjust the correct pre-distortion. The utilized result of the transmitted test pattern indicates the LED EQZ. The flash frequency of the LED EQZ is a degree for the achieved improvement.

The FSKM12 modem allows to connect up to three transmission lines star-coupled as point-to-point link without repeater. The transmitter output circuit operates hereby as constant current source.

All essential settings like channel, gain, line operation mode, line termination, transmission rate etc. are configured by jumpers.

By the disconnect test sockets on the front plate the serial interface signals to the data terminal equipment (DTE) as also the VFT-lines can be measured or opened.

Additional VF-signal transformers have to be used for requested higher isolation voltages.



Technical Data

In addition to the PKS RTU 513 general data, the following applies:

General Data

Type of modulation	Frequency shift keying (FSK) with carrier switch-off for multi-drop network
Type of communication	Point-to-point or multi-drop network
Operation modes	Duplex or half-duplex via two-/four-wire links
Channel assignment	According to CCITT raster

Serial interface to DTE

Signal definition	V.24 / V.28	
Signal lines	TxD	D1 / 103
	RxD	D2 / 104
	RTS	S2 / 105
	CTS	M2 / 106
	DCD	M5 / 109

Interface to transmission line

Input- / Output impedance	600 Ω non earthed and symmetrical, or 5 kΩ at Stagger operation
Transmission level at 600 Ω	0 ... -22.5 dBm configurable by jumper, depending on bit rate (CCITT) or number of used channels
Transmitter pre-distortion	In high- / or low-pass 0 ... 10 dB
Receiver level range	-6 ... -58 dBm

Sensitivity	6 / 10 / 14 / 26 dB
Receiver filter characteristic	configurable between high (90 dB) and normal selectivity (for 50...600 baud)

Signal quality level monitor

Threshold	>40% for 50...1200 bd >50% at 2400 bd isochronous distortion
SQL - LED	ON: > 10 errors with < 4 sec distance OFF: no errors for at least 4 sec.

DCD monitoring

DCD alarm at half duplex operation	if the carrier is lost for minimum n seconds (depends on baud rate): 50 baud 16 sec 100 baud 8 sec 200 baud 4 sec 600 ... 2400 bd 2 sec
DCD alarm at duplex operation	Switches with carrier directly, operation mode configurable by jumper
DCD - LED	Switches with carrier directly

Alarm relay

Switching function	DCD alarm or SQL alarm and / or supply voltage failure
Alarm contact	60 V DC / 0.5 A / 30 W

Power Supply

Supply	2* RJ45-jack
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