

SIEMENS

ACP 1703 Ax 1703

CM-0822

Fieldbus Interface Star (4x LWL)



Bus interface for a (redundant) field bus or multi-point traffic, realised as an optical star

- 4 optical transmitter and receiver for each channel (ST-connector)
- Transmission rate max. 115.2kbps
- Up to 6 CM-0822 can be attached side by side
- Appropriate for optical fibres with length of up to 1500m
- Power supply via PS-6621 or PS-663x
 - Redundancy of power supply with PS-663x possible

Application

CM-0822 is used for the construction of complex optical networks:

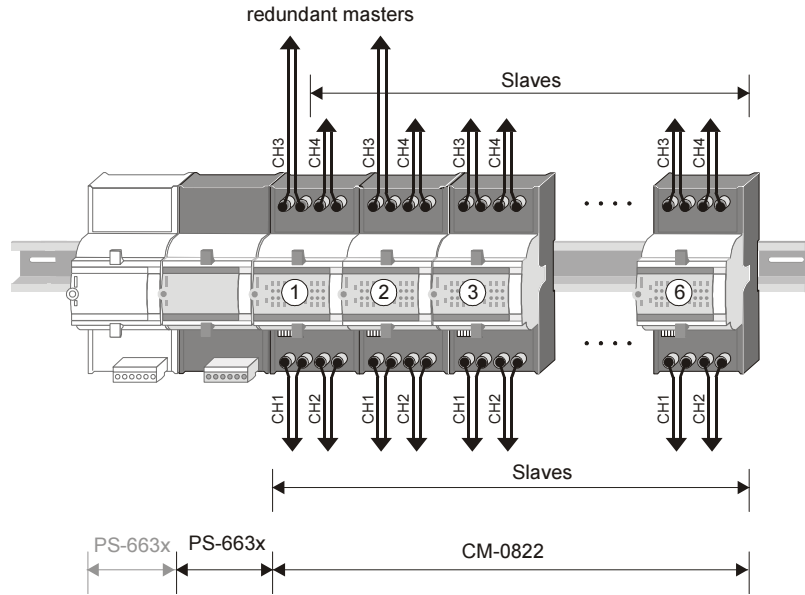
- Modes of operation
 - IEC 60870-5-101 unbalanced multi-point (multi-point traffic)
 - IEC 60870-5-103 unbalanced multi-point (multi-point traffic)
- Network structure
 - star
 - tree
- up to 115.2 kbps transmission rate
- 4 optical transmit and receive channels
 - Transmit and receive channels are separated from each other and can be used according to the application
 - Receive channel stuck at zero monitoring
- Power supply
 - PS-6630 or PS-6632
 - redundant power supply is supported (but not to increase power)
 - PS-6621
 - Not more than 6 CM-0822 modules on a power supply PS-663x or PS-6621

Features

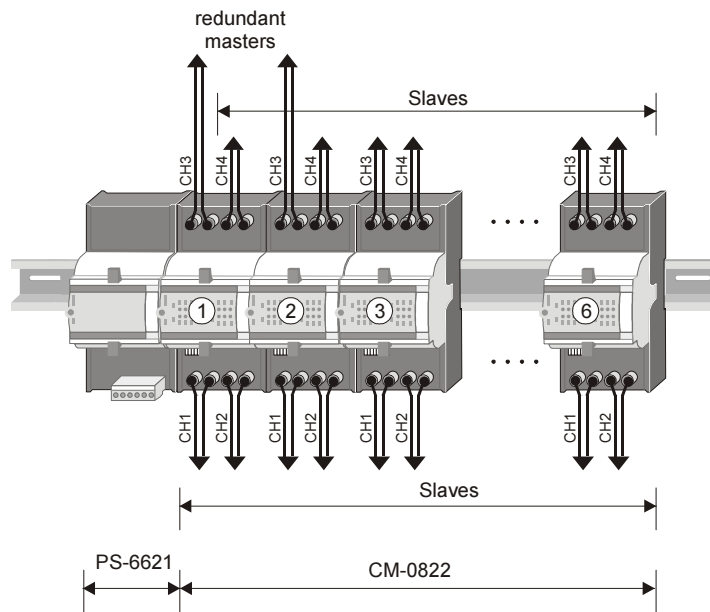
- up to 6 CM-0822 can be attached side by side
- supports redundant masters
- Channel 3 (CH3) can be set for a connection in direction to a master or in direction to slaves; channel 1 (CH1), channel 2 (CH2), and channel 4 (CH4) are provided for a connection in direction to slaves only
- Transmission rate for stuck at zero monitoring can be set using DIP switch
- Line-idle state can be set for each interface using DIP switch

Configuration Examples

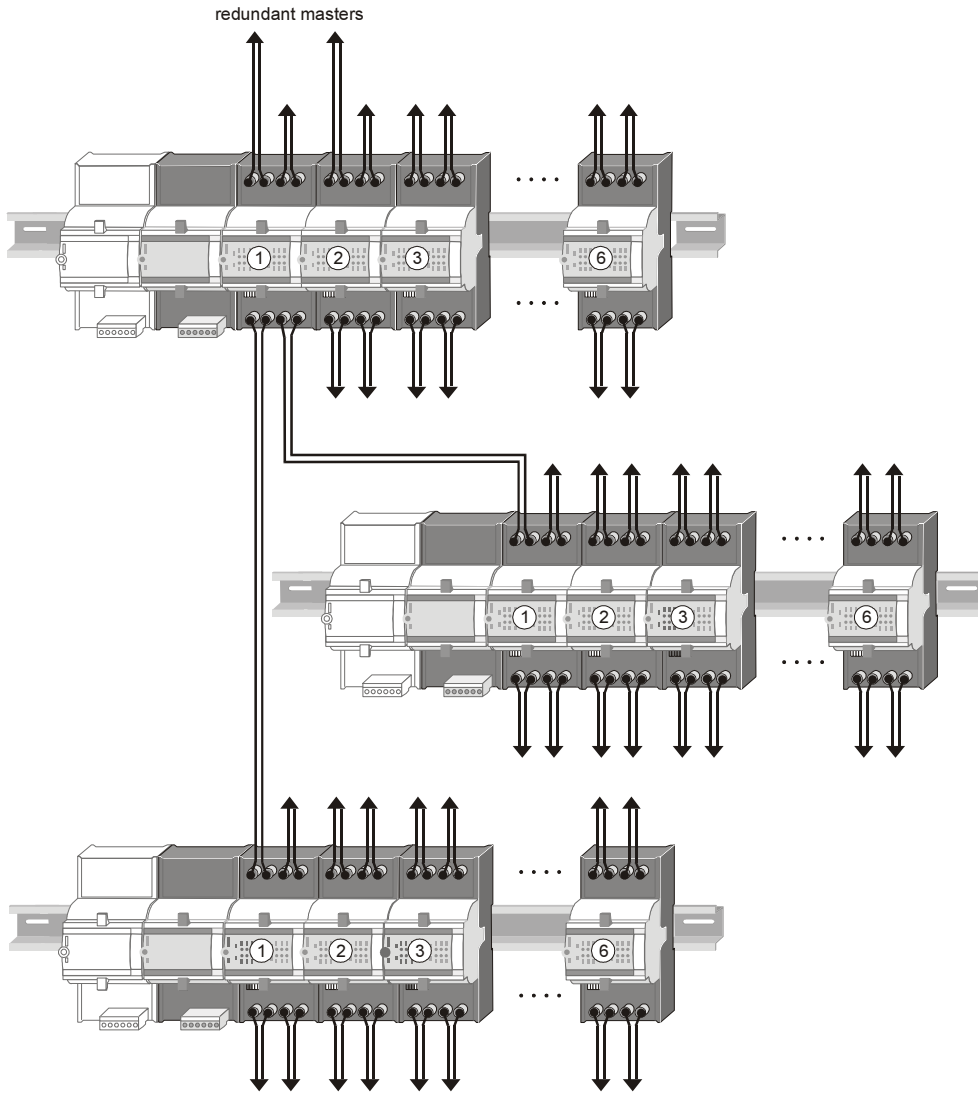
Star, redundant masters (with PS-663x)



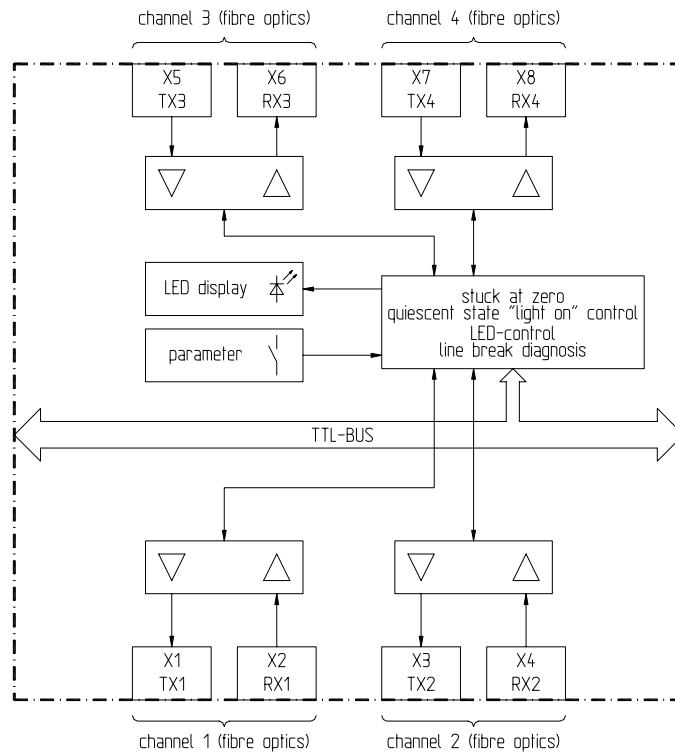
Stern, redundant masters (with PS-6621)



Tree (with PS-663x)



Block Diagram (Module)



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Block Diagram Data Flow

Star / Tree (Module Row)

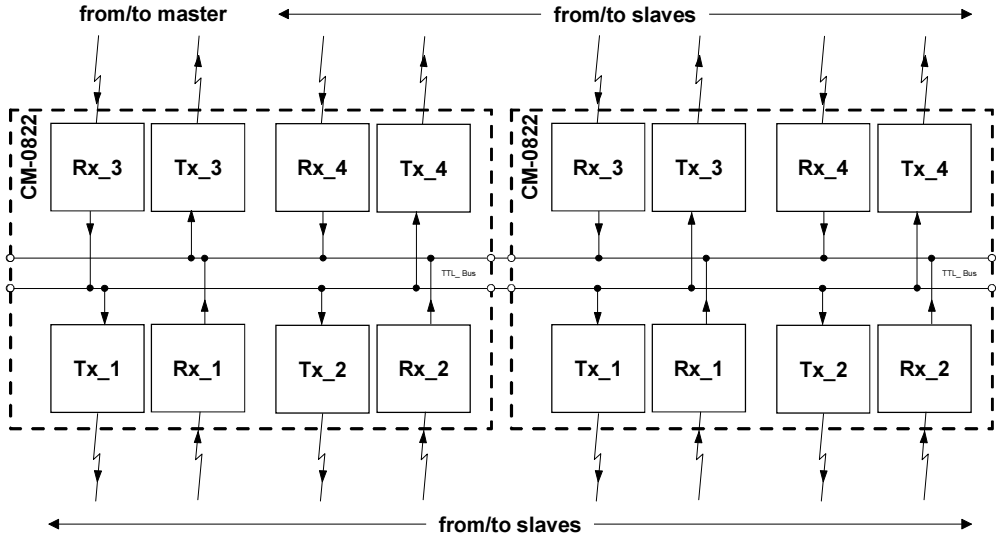


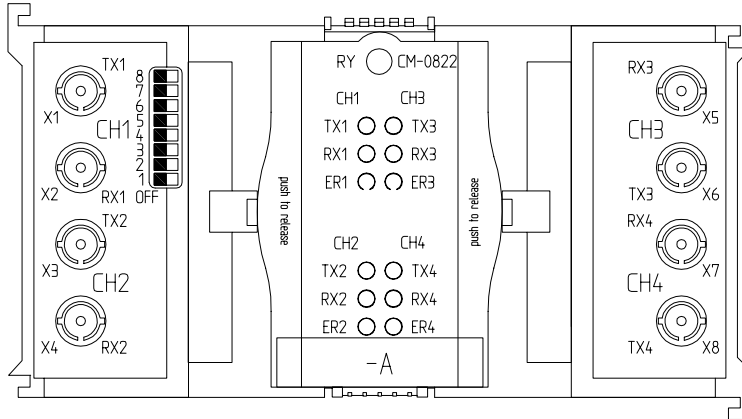
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Technical Specifications

Interfaces																								
Optical interfaces	<ul style="list-style-type: none"> Multimode glass fibre optic: <ul style="list-style-type: none"> (1) 50/125µm fibre (typ. 2.3dB/km) max. 115.2kbps (2) 62.5/125µm fibre (typ. 3.0dB/km) max. 115.2kbps Transmitter (820nm): <table border="1"> <tr> <td>Power launched into the fibre:</td> <td>max</td> <td>min</td> </tr> <tr> <td>(1)</td> <td>-13.8dBm</td> <td>-18.8dBm</td> </tr> <tr> <td>(2)</td> <td>-10dBm</td> <td>-15dBm</td> </tr> </table> Receiver (820nm): <table border="1"> <tr> <td>Received power:</td> <td>max</td> <td>min</td> </tr> <tr> <td>(1), (2)</td> <td>-10dBm</td> <td>-40dBm</td> </tr> <tr> <td>Data rate:</td> <td colspan="2">max. 115.2kBit/s</td> </tr> </table> Line lengths (3dB system reserve): <table border="1"> <tr> <td>(1)</td> <td>0 .. 0.5km</td> </tr> <tr> <td>(2)</td> <td>0 .. 1.5km</td> </tr> </table> 	Power launched into the fibre:	max	min	(1)	-13.8dBm	-18.8dBm	(2)	-10dBm	-15dBm	Received power:	max	min	(1), (2)	-10dBm	-40dBm	Data rate:	max. 115.2kBit/s		(1)	0 .. 0.5km	(2)	0 .. 1.5km	<ul style="list-style-type: none"> channel 1 (CH1, X1/X2) channel 2 (CH2, X3/X4) channel 3 (CH3, X5/X6) channel 4 (CH4, X7/X8)
Power launched into the fibre:	max	min																						
(1)	-13.8dBm	-18.8dBm																						
(2)	-10dBm	-15dBm																						
Received power:	max	min																						
(1), (2)	-10dBm	-40dBm																						
Data rate:	max. 115.2kBit/s																							
(1)	0 .. 0.5km																							
(2)	0 .. 1.5km																							
Signal propagation delays	<ul style="list-style-type: none"> CH3 ⇔ CH1 8.8µs CH3 ⇔ CH2 8.8µs CH3 ⇔ CH4 8.8µs <p>The signal propagation delays are valid independently of where the concerned channels, CH3 and CH1/CH2/CH4, belong to:</p> <ul style="list-style-type: none"> – to the same module, or – to different modules of the same row <p>The signal propagation delays do not depend on direction.</p> <p>Note:</p> <p>In order to obtain the total signal propagation delay from one master to one specific slave, the above mentioned signal propagation delay (in cascaded structures: repeatedly, if applicable) and the signal propagation delay of all fibre optics sections have to be taken into consideration.</p>																							
Power Supply																								
Operating voltage	3.5 .. 5.25 VDC, typ. 0.5W .. 1W (depending on the set line-idle state)																							
	Power to be supplied by PS-663x or PS-6621																							
Mechanics and Connectors																								
Optical interfaces	<ul style="list-style-type: none"> Multimode optical fibre (1), (2) ST compatible Multimode optical fibre (1), (2) ST compatible Multimode optical fibre (1), (2) ST compatible Multimode optical fibre (1), (2) ST compatible 	<ul style="list-style-type: none"> channel 1 (CH1, X1/X2) channel 2 (CH2, X3/X4) channel 3 (CH3, X5/X6) channel 4 (CH4, X7/X8) 																						
DIP switch	8 switches																							
Dimensions	131 x 63 x 73 mm (H x W x D, dimensions w/o DIN rail)																							
Weight	Approx. 160 g																							

Engineering

Frontansicht (CM-0822-A)



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Stecker (CM-0822-A)

channel 1:

X1: ST connector

pin	signal
1	Tx

X2: ST connector

pin	signal
1	Rx

channel 2:

X3: ST connector

pin	signal
1	Tx

X4: ST connector

pin	signal
1	Rx

channel 3:

X5: ST connector

pin	signal
1	Tx

X6: ST connector

pin	signal
1	Rx

channel 4:

X7: ST connector

pin	signal
1	Tx

X8: ST connector

pin	signal
1	Rx

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RY board ready to operate (ready)
 TX1 ... 4 . . . Data are sent, channel 1.4
 RX1 ... 4 . . . Data are received, channel 1.4
 ER1 ... 4 . . . error, channel 1 ... 4

Tx serial interface (transmit data)
 Rx serial interface (receive data)

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Einstellungen (CM-0822-A)

configuration switch:

stuck at zero data rate (Bit/s)	
<input type="checkbox"/> 50, 100	
<input type="checkbox"/> 150, 200	
<input type="checkbox"/> 300, 600	
<input type="checkbox"/> 1k2, 2k4	
<input type="checkbox"/> 4k8, 9k6	
<input type="checkbox"/> 19k2, 38k4, 56k	
<input type="checkbox"/> 64k, 115k2	
<input type="checkbox"/> stuck at zero switched off (eg.minute pulse)	
modul is master or slave	
<input type="checkbox"/> Master (channel 3)	
<input type="checkbox"/> Slave (channel 3)	

line-idle state	
<input type="checkbox"/> channel 1 (CH1) (ON = light on)	
<input type="checkbox"/> channel 1 (CH1) (OFF = light off)	
<input type="checkbox"/> channel 2 (CH2) (ON = light on)	
<input type="checkbox"/> channel 2 (CH2) (OFF = light off)	
<input type="checkbox"/> channel 3 (CH3) (ON = light on)	
<input type="checkbox"/> channel 3 (CH3) (OFF = light off)	
<input type="checkbox"/> channel 4 (CH4) (ON = light on)	
<input type="checkbox"/> channel 4 (CH4) (OFF = light off)	

Legend:

■ current configuration

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Literaturverzeichnis

ACP 1703 Platforms Configuration Automation Units and Automation Networks	DC0-021-2
Data Sheet PS-663x	MC6-027-2
Data Sheet PS-662x	MC6-017-2

