

# 15 INTERFACE MODULES - IF100 AND IF101

## 15.1 GENERAL INFORMATION

Fundamentally, interface modules allow the PCC to exchange data with other devices (other PCCs). This is often necessary in complex applications if there not enough interfaces on the CPU.

## 15.2 TECHNICAL DATA



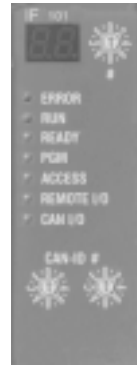
Module ID	IF100	IF101
Model Number	2IF100.60-1	2IF101.60-1
Description	2010 Interface Module, 64 + 404 KB SRAM, 256 KB FlashPROM, 1 RS232 interface, 1 elect. isolated RS232/TTY, 1 RS485/RS422 interface, elect. isolated, network capable, 1 CAN interface, elect. isolated, network capable	2010 Interface Module, 64 + 404 KB SRAM, 256 KB FlashPROM, 1 RS232 interface, 1 elect. isolated RS232/TTY, 1 RS485/RS422 interface, elect. isolated, network capable, 1 CAN interface, elect. isolated, network capable, 1 ETHERNET connection, BNC socket, elect. isolated, network capable
C-UL-US Listed	Yes	Yes
B&R ID Code	\$2E	\$2E
User RAM	404 KByte (not buffered)	
System RAM	108 KByte (not buffered)	
Dual Ported RAM	64 KByte (not buffered)	
PROM		
User PROM	256 KByte FlashPROM	
System PROM	256 KByte FlashPROM	

Module ID	IF100	IF101
Number of Interfaces	4	5
Application Interface IF1		
Type	RS232	
Connector	9 pin D-type plug	
Electrical Isolation	No	
Controller	RISC (68302)	
Maximum Distance	15 m/19200 Baud	
Maximum Baudrate	64 kBaud	
Bus Capable	No	
Application Interface IF2		
Type	RS232 / TTY	
Interface Selection	Using software	
Connector	9 pin D-type plug	
Electrical Isolation	Yes	
Controller	RISC (68302)	
Maximum Distance RS232 TTY	15 m/19200 Baud 300 m	
Maximum Baudrate RS232 TTY	64 kBaud 64 kBaud	
Bus Capable	No	
Application Interface IF3		
Type	RS485 / RS422	
Interface Selection	Using software	
Connector	9 pin D-type socket	
Electrical Isolation	Yes	
Controller	RISC (68302)	
Maximum Distance	1200 m	
Maximum Baudrate	347 kBaud	
Bus Capable	Yes	
Bus Connection	T-connector (model number 0G1000.00-090)	
Application Interface IF4		
Type	CAN (Controller Area Network)	
Connector	9 pin D-type plug	
Electrical Isolation	Yes	
Controller	Intel Controller 82527	
Maximum Distance	1000 m	
Maximum Baudrate Bus Length 10 - 60 m Bus Length 100 - 200 m Bus Length 800 - 1000 m	500 kBit/sec 250 kBit/sec 50 kBit/sec	
Bus Capable	Yes	
Bus Connection	T-connector (model number 7AC911.9)	

Module ID	IF100	IF101
Application Interface IF5		
Type		ETHERNET
Connector		10BASE2: CHEAPERNET BNC socket
Electrical Isolation		Yes
Controller		AM79C960
Maximum Baudrate		10 MBit/sec
Bus Capable		Yes
Bus Connection		Coax-T
Power Consumption		Max. 7 W
Dimensions (H, W, D) [mm]		285,40,185

### 15.3 STATUS-LEDs

- ERROR** Error or undefined state.
- RUN** The interface module was initialized by the PCC CPU.
- READY** The interface module is running without errors.
- PGM** This LED is lit if the FlashPROM is being programmed.
- ACCESS** This LED is lit if the interface module is accessing the CPU or other system modules via the system bus.
- REMOTE I/O** RIO interface is active.
- CAN I/O** CAN interface is active.



### 15.4 NUMBER SWITCH

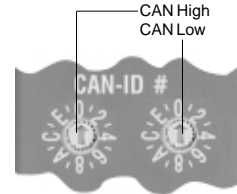
#### Module Address

The module address of the interface module found on the system bus is set with the number switch. The module address is shown on the 7 segment display. Make sure that there is no other system module with the same module address.



## CAN Node Number Dials

The Hex dials are used to set the CAN node number. The position of the dial can be evaluated by the application program. When the dial is turned during operation a relevant warning message is generated. The dial status can only be identified by the operating system during start up. Positions 00 and FF are reserved for special functions.

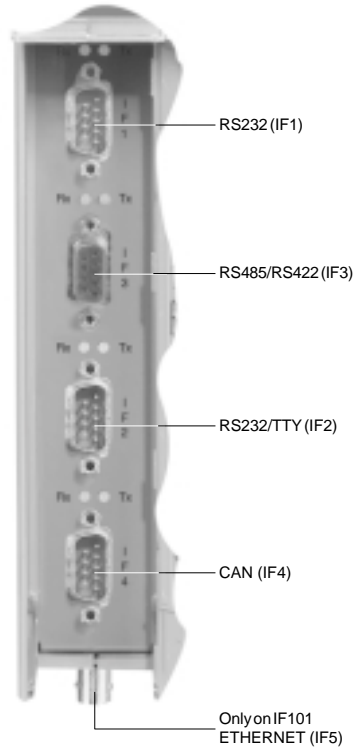


Dial Position:           00 ... Boot manager enabled  
                          FF ... Diagnosis Mode

## 15.5 CONNECTIONS

The interface connections can be found behind the module door.

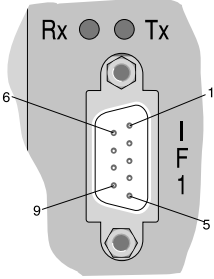
The Status LEDs above the interfaces indicate if data is being transmitted (Tx) or received (Rx).



## 15.6 APPLICATION INTERFACE (IF1)

The non-electrically isolated RS232 interface is suitable for connection via a fibre optics cable. The fibre optics cable is supplied with the 4.8 V supply voltage (pin 4 of the D-type plug).

LEDs above the interface indicate if data is being transmitted (Tx) or received (Rx). IF1 is modem capable.

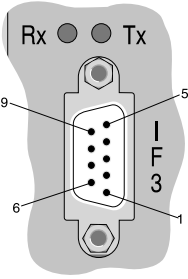
Interface	Pin Assignments		
<p style="text-align: center;">RS232</p>  <p style="text-align: center;">9 Pin D-type Connector (M)</p>	RS232		
	1	NC	
	2	RXD	Receive Signal
	3	TXD	Transmit Signal
	4	DTR	Data Terminal Ready (+4,8 V / 150 mA)
	5	GND	Ground
	6	DSR	Data Set Ready
	7	RTS	Request To Send
	8	CTS	Clear To Send
	9	NC	

## 15.7 APPLICATION INTERFACE (IF3)

The electrically isolated IF3 can be used as RS422 or RS485 interface.

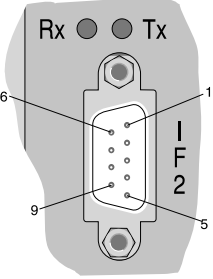
IF3 is suitable for connection via a fibre optics cable. The fibre optics cable is supplied with the electrically isolated 5 V supply voltage (pin 6 on the D-type socket).

LEDs above the interface indicate if data is being transmitted (Tx) or received (Rx).

Interface	Pin Assignments		
<p style="text-align: center;">RS485/RS422</p>  <p style="text-align: center;">9 Pin D-type Connector (F)</p>	RS485	RS422	
	1	Shield	Shield
	2	CTRL	TXD
	3	DATA	RXD
	4	CTRL	TXD
	5	GND	GND
	6	+ 5 V / 200 mA	+ 5 V / 200 mA
	7	$\overline{\text{CTRL}}$	$\overline{\text{TXD}}$
	8	DATA	RXD
	9	$\overline{\text{CTRL}}$	$\overline{\text{TXD}}$

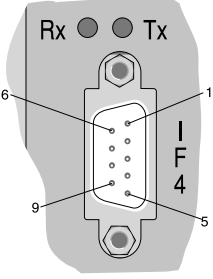
## 15.8 APPLICATION INTERFACE (IF2)

LEDs above the electrically isolated interface indicate if data is being transmitted (Tx) or received (Rx).

Interface		Pin Assignments		
<p>RS232/TTY</p>  <p>9 Pin D-type Connector (M)</p>				
			<b>RS232</b>	<b>TTY</b>
		1	res.	TXD
		2	RXD	Current 1
		3	TXD	res.
		4	res.	RXD
		5	GND	GND
		6	res.	TXD Ret
		7	RTS	Current 2
		8	CTS	res.
9	res.	RXD Ret		

## 15.9 APPLICATION INTERFACE (IF4)

The two Status LEDs for transmit and receive above the D-type plug show the activity on the CAN bus between controller and optocoupler. The CAN interface is not electrically isolated.

Interface		Pin Assignments		
<p>CAN</p>  <p>9 Pin D-type Connector (M)</p>				
			<b>CAN</b>	
		1	NC	
		2	CAN L	
		3	GND	
		4	NC	
		5	NC	
		6	res.	
		7	CAN H	
		8	NC	
9	NC			

## 15.10 APPLICATION INTERFACE (IF5)

This interface is **only available on IF101!**

The IF5 is cabled as an ETHERNET interface. The connection is made with a 10BASE2 CHEAPERNET BNC plug (F) in the housing. A coax T connector is attached here.