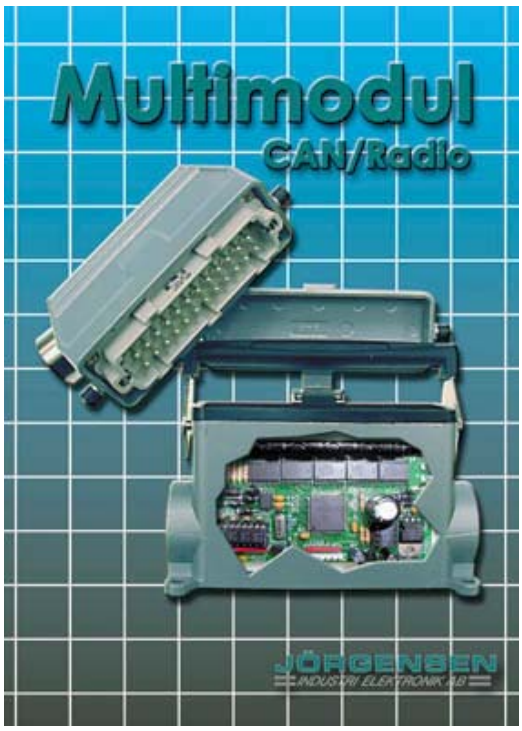
CanCom

MULTIMODUL D/R V 4.4 CE

JÖRGENSEN

Specifikation	Specification		
Matningsspänning	Power supply	10-30	VDC
Spänningsrippel	Voltage ripple	<3	V t-t
CAN protokoll	CAN protocol	2.0B	150Kbit
CAN drivkrets	CAN driver	82C251	Philips
I/O adress	I/O address	Fixed	ID
Kabelkontaktdon	Cable connectors	Han R23	Harting
I/O kontaktdon (A/D)	I/O connectors (A/D)	H-BE 24	EPIC
Operativsystem	Operating system	CanCom	CanPro
CPU	CPU	98AZ60	Motorola
Flashminne	Flash memory	60	kB
Kapsling	Housing	Grey	Aluminium
Egenförbrukning	Internal consumtion	50	mA
Vikt	Mass	1100	g
Omgivningstemp.	Operating temp.	-30 - +80	Celcius
Omgivningstemp.Radio	Operating temp.Radio	-20 - +60	Celcius
Mått (HxLxB)	Size (HxLxW)	110x144x58	mm
IP-klass	IP class	IP 65	
Utgångar	**Output**		
Antal utgångar	Number of outputs	18	Digital
Antal I/O	Number of I/O	2	Digital
Belastbarhet	Maximum load	2000	mA / IO*
Övertemp skydd.	Overtemp protected	+150	Celcius
Kortslutningsskydd	Short circuit protect	8	A
Återställning av skydd	Reset protection	Interupt power	Automatic
Aktiveringstid	I/O response time	20-50	ms
		* Max 10A totally for the module	
Ingångar	**Inputs**		
Antal ingångar	Number of inputs	3	Digital
Ingångs resistans (DI)	Input resistance (DI)	3,2	kohm
ingång aktiv "0"	Input activated "0"	<1	VDC
Ingång aktiv "1"	Input activated "1"	>3	VDC
Buss uppdateringstid	Bus update time	50	ms
Tid mellan inläsningar	Input capture	20-50	ms
Frekvensingång	Frequency counter	0-255	Hz
EMC:			**2004/108/EG**
Emission CISPR 25	Emission CISPR 25	EN 55011	EN 61000-6-4
Immunitet	Immunity		EN 61000-6-2
ISO 11452-5	Stripline RF immunity	150V/m	10 KHz-200 MHz
ISO 11452-2	Radiated RF immunity	150V/m	200-1000 MHz
ISO 11452-2	Radiated RF immunity	125V/m	1-4.2 GHz
ISO 11452-2	Radiated RF immunity	50V/m	4.2-18 GHz
ISO 7637-2	24V system	Pulse	1,2,3a,3b,4,5
ISO 7637-3	12-24V system	Pulse	3a,3b
EN 61000-4-2	ESD	Air/Contact	8/4 KV



CanCom® Multimodule V4.4

The module is moulded in a solid aluminium housing. The result is a hermetically sealed module that is resistant against the hard stresses in mobile environment that includes moisture and vibrations.
The module is programmed with *CanPro* V3.xx or V4.xx.

- Built-in radio receiver, radio frequency 433,92 MHz
  Radio manoeuvring from e. g. HT-12 hand transmitter or with *CanCom*® TX card and Bluetooth via external receiver
  BNC antenna connection.

- CAN bus connection for programming and connection for other *CanCom*® products.

- 20 digital outputs whereof 2 can be configured as PWM outputs with increase/decrease function.

- 2 of the outputs can also be set as digital inputs.

- 3 Digital inputs, also for measuring frequency 0-255Hz

IN / OUT puts on *CanCom*® Multi-module

Module id 15: Radio low 1-8
Module id 16: Radio high 9-16 (A,B,C)

The radio is programmed with ID 15 and 16 (in the ID-box in CanPro)
When using CanCom TX the jumper must be placed in the CL position on the transmitter card.
Data that comes into the Multi module from the CAN connector with ID 15, 16 has priority before data that comes from the radio input.

NOTE: If the radio is used, then the radio id must be used in any condition for the module. Otherwise it can be strange values in the analyse in CanPro.

Module id 17:

OUT (I/O):	1	2	3	4	5	6	7	8
IN:		2	3					
Module pin:	2	12[1]	14[1]	3	4	5	6	7

Module id 18:

OUT (I/O):	1	2	3	4	5	6	7	8
Module pin:	8	10	11	13	15	16	17	18

Module id 19:

OUT (I/O):	1	2	3[4]	4[4]	5[2]	6[2]	7[2]	8[2,5]
IN:					5	6[3]	7	
Module pin:	19	20	21	22	9	23	24	

+ 10-30V Pin 1 in the 24 pole connector
- Earth terminal in the 24 pole connector (GND)
(- is also connected to the modules housing, if galvanic separation is required an isolation kit can be ordered)

- [1] = Selectable as in or output.
- [2] = 5, 6 7, 8 has no physical outputs, but they can be configured as outputs if there is need for ”bus flags.
- [3] = This input cannot be used as frequency input.
- [4] = The outputs can be used as PWM with INC,DEC function (see special page)
- [5] = If this port is set as input the value from INC,DEC function is shown on this port. At boot the value is 127 (Center).
- Module 22-24 have 32 internal flags each.
- Load, Max 2A / output, but not over 10A totally for the whole module.
- Voltage for activation of input is 2–30V, internal resistance is 2,5Kohm (1-12mA)
- The outputs are protected against overload and short circuit.
- The module is terminated with 120Ω internally.

Power supply and CAN signals are connected to the **4-pole Hirschmann connector**

1 CAN HI

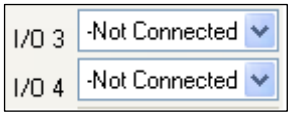
2 CAN LOW

3 + 10-30VDC (+ Can also be connected to the **24 pole connector pin 1**)

4 – (**-** Can also be connected to the **24 pole connector gable pin**. The Multimodul housing is also connected to – (GND))

INC/DEC PWM function in Multi module V3.xx

In module address 19 2 outputs can be chosen as Inc/Dec PWM outputs by specifying these as –Not connected – in the module configuration.



Module id 19:

OUT (I/O):	1	2	**3**	**4**	5	6	7	**8**
IN:					5	6	7	
Pin:	19	20	**21**	**22**	9	23	24	

If Digital in, Digital out or Frequency counter is chosen, output 3 and 4 and flags 27-32 will work as usual. (The PWM function is disconnected).
If port 8 is set as input the INC,DEC value is shown there on the CAN-bus.

The outputs is controlled from following **flags** in module address 19

When the conditions in Flag **32** is valid ”the caparison point” move against pin 22, with the speed that is chosen through a constant value.
The PWM signals actual level is kept when the condition is no longer valid.

When the conditions in Flag **31** is valid ”the caparison point” move against pin 21, with the speed that is chosen through a constant value.
The PWM signals actual level is kept when the condition is no longer valid.

The speed is 25ms, and the resolution for each PWM output 3060 steps.

3060/constant value*0.025 = rise/fall time in seconds from min value to max value
Example:
Constant value 1 = 3060 / 1 x 0.025 = 76.5 seconds rise/fall time
Constant value 8 = 3060 / 8 x 0.025 = 9.5 seconds rise/fall time
Constant value 50 = 3060 / 50 x 0.025 = 1.5 seconds rise/fall time

When the conditions in Flag **30** is valid ”the caparison point” is moved to origin right away with no delay, that is the PWM signals actual level is blocked, if the flags value is 1. It is possible to get a ramp down of the signal. If this is desired, put a constant value when the flag is true that corresponds to the fall time, from power supply to 0V, in centiseconds. Example: If the flag is finished with the condition SET CONSTANT VALUE = 20 you get a falltime of 2 seconds.

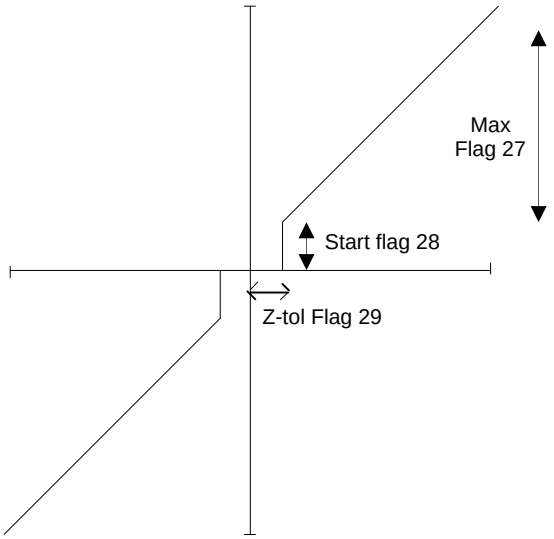
When the conditions in flag **29** is valid, the flags value will correspond to the Z-tolerance in % of 255. Example: The value 10 corresponds to 3,9% (10/255*100)
Note: The Z-tolerance value must be equal or lesser then the start value in flag 28

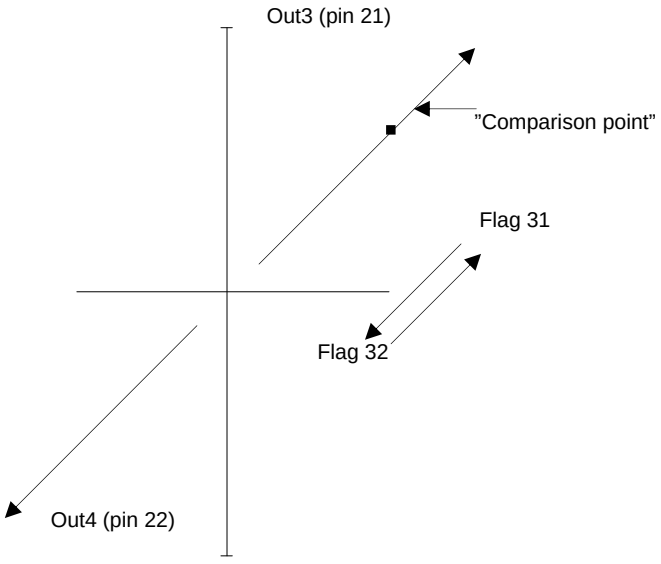
When the conditions in flag **28** is valid, the flags value will correspond to the start value in % of 255. Example: The value 50 corresponds to 19,6% PWM (50/255*100)
Note: The start value must be equal or grater then the Z-tolerance in flag 29

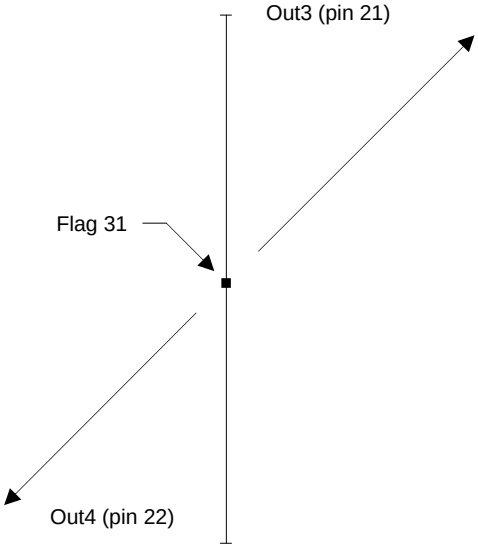
When the conditions in flag **27** is valid, the flags value will correspond to the Max value in % of 255. Example: The value 200 corresponds to 78,4% PWM (200/255*100)

The flags can be programmed with the modules inputs, radio inputs, timer, follow, set etc.
PWM frequency is fixed to 150 Hz (not adjustable).

Multimodule version 3.40 and later has built in boot-loader, which means that it is possible to update the Multi modules operating system through the CAN-bus with the CAN-interface (Interface version 3.4 or later).


Max
Flag 27
Start flag 28
Z-tol Flag 29


Out3 (pin 21)
"Comparison point"
Flag 31
Flag 32
Out4 (pin 22)


Out3 (pin 21)
Flag 31
Out4 (pin 22)

SPECIAL FUNCTIONS

Function SIM (SIMulate module) in ID 18

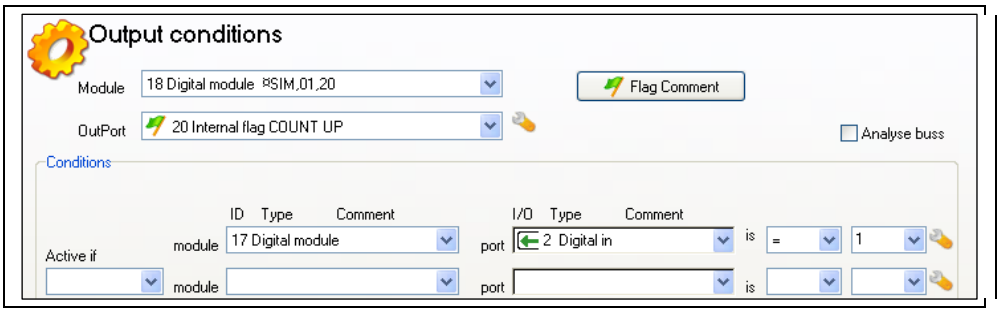
The function SIM can be used to send out eight flags from ID 18 on the bus with optional ID.
To activate the function write the following in the comment for the module with ID 18: ¤SIM,*ID*,*FL*
where *ID* is the ID you want the flags to get (01-25). Always written with two numbers.
and where *FL* is the first flag (of eight in a row) you want to send out (01-25). Always written with two numbers.

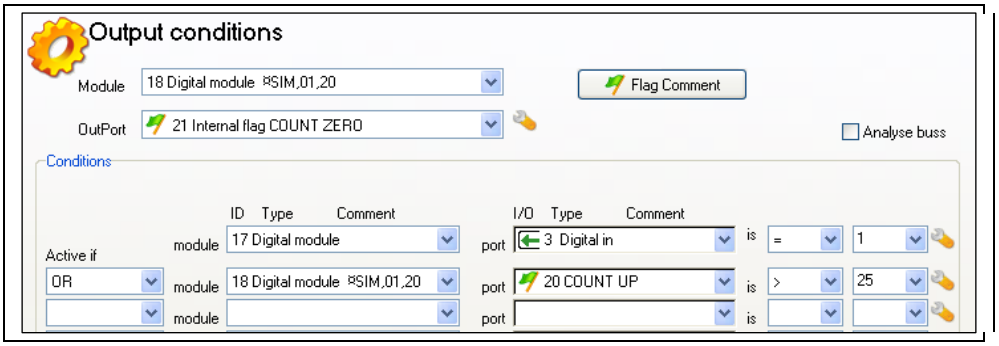
Example: Flag 5 and forward you want on ID 9. Put in ¤SIM,09,05 in the comment for the module.
Then flag 5-12 will be sent out on ID 9.

Function COUNT in ID 18 Flag 20 & 21

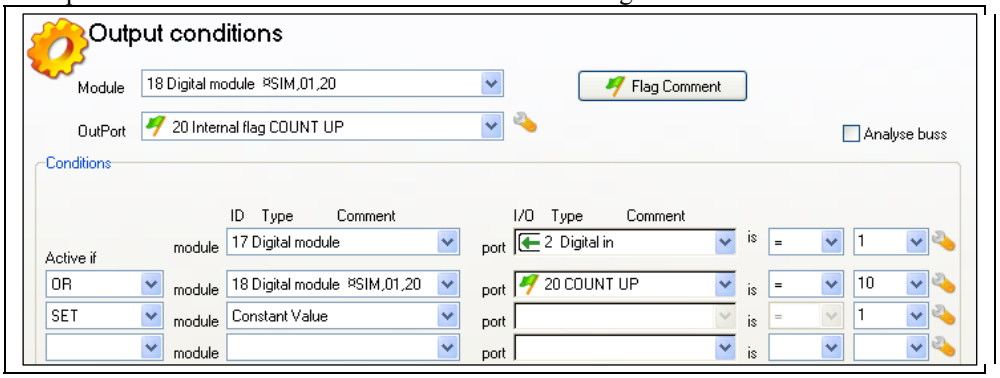
Flag 20 can be used as enumerator. When the flag gets true, the flags value is enumerated with 1.
When flag 21 is true the counter in flag 20 is set to zero.
The function is activated by writing COUNT in the comment for flag 20.
The counter always starts with 0 after power reduction.

Example 1: The counter enumerates when input ID17:2 = 1 and is set to zero when input ID17:3 = 1 or the counter is bigger than 25.
Take notice of the SIM-function in the comment for the module, which put the counter on the bus in ID1:1.





Example 2: The counter is as before but does not count higher than 10.



Instruction for installation:

Assembly:
The module can be assembled in any optional position.
When installing the module, the casing of the module shall have good electrical contact with the base frame of the vehicle.
Make sure the cables and connectors seal the module, so that water can not come into the module.

Electrical installation:
Secure the module with maximum 10 Ampere fuse.
The connectors is made for maximum 16 Ampere.
The module has built-in CAN termination.

Other:
The module is hermetically moulded in PUR.
The enclosure is made of powder coated aluminium.
The module enclosure is connected to GND.

Declaration of Conformity according to the EMC directive 2004/108/EG

Försäkran om överensstämmelse enligt EMC direktivet 2004/108/EG

By signing this document the undersigned declares as manufacture that the equipment in question complies with the protection requirements of directive(s)

Genom att underteckna detta dokument försäkrar undertecknad såsom tillverkare att angiven utrustning uppfyller skyddskraven i rubricerade direktiv

CanCom Multimodule

EN 61000-6-4	**Radiated RF emission**	
CISPR 25:2002	**Conducted RF emission**	
EN 61000-6-2	**Industrial immunity**	
ISO 11452-5 (95/54/EG)	**Stripline RF immunity 10KHz-200MHz**	**150V/m**
ISO 11452-2 (95/54/EG)	**Radiated RF immunity 200MHz-1GHz**	**150V/m**
ISO 11452-2 (95/54/EG)	**Radiated RF immunity 1GHz-4.2GHz**	**125V/m**
ISO 11452-2 (95/54/EG)	**Radiated RF immunity 4.2GHz-18GHz**	**50V/m**
ISO 7637-3 puls 3a,3b	**Conducted transients on signal lines**	
ISO 7637-2 puls1,2,3a,3b,4,5	**Conducted transients on signal lines**	
EN 61000-4-2	**ESD (4kV contact, 8kV Air)**	
EN 61000-4-8	**Magnetic field (50Hz 30A/m)**	

CE

Jörgensen Industrielektronik AB
Järnvägsgatan 1 535 30 Kvänum Sweden
Phone +46 512 92229 Fax +46 512 92115
www.jorgensen-elektronik.se

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Morten Jörgensen