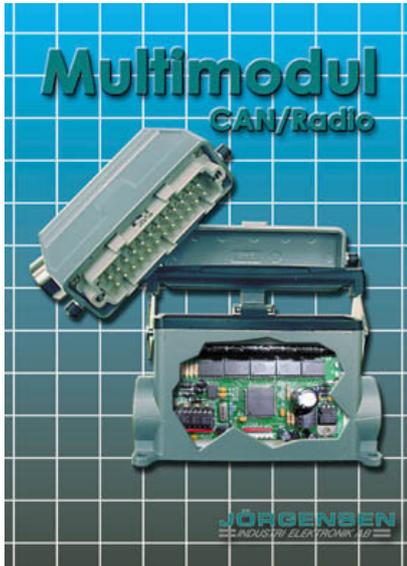




Specifikation		Specification	
Matningsspänning	Power supply	10-30	VDC
Spänningsrippel	Voltage ripple	<3	V t-t
CAN protokoll	CAN protocol	2.0B	150Kbit
CAN drivkrets	CAN driver	82C251	Philips
I/O adress	I/O address	Fixed	ID
Kabelkontaktidon	Cable connectors	Han R23	Harting
I/O kontaktidon (A/D)	I/O connectors (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 consumption	50	mA
Vikt	Mass	1200	g
Omgivningstemp.	Operating temp.	-30 - +80	Celcius
Mått (HxLxB)	Size (HxLxW)	110x144x58	mm
IP-klass	IP class	IP 65-67	
Utgångar		Output	
* Max 10A totally for the module			
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
Ingångar		Inputs	
Antal ingångar	Number of inputs	3+8	Digital+Analog
Ingångs resistans (DI)	Input resistance (DI)	3,2	kohm
Ingångs resistans (AI)	Input resistance (AI)	47	kohm
ingång aktiv "0"	Input activated "0"	<1	VDC
Ingång aktiv "1"	Input activated "1"	>3	VDC
Buss uppdateringstid	Bus update time	25-50	ms
Tid mellan inläsningar	Input capture	20-50	ms
Frekvensingång	Frequency counter	1-255	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

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CanCom® Multi module Analog/Digital *ID21-24*

The module is moulded in a stable aluminium housing. The result is a hermitically 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.

- CAN bus connection for programming and connection to other **CanCom®** products.
- 8 Analog inputs 0-5V, and +5V supply and - connection in a circular connector on the module.
- 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

The module is available with various ID as below:

Artikel nummer	ID Serie	ID	ID	ID	ID
Art nr: 80-45700	ID 21-24	21	22	23	24
Art nr: 80-45702	ID 16-19	16	17	18	19
Art nr: 80-45703	ID 9-12	9	10	11	12
Art nr: 80-45706	ID 22-23		22	23	

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

Below is information about ID 21-24, but using the table above, this can easily be translated into other ID.

Module id 21: (alt ID16 alt ID9)

Analog inputs 0-5V* 8bit

Circular connector Pin 1: Analogue in 1 0-5V

Circular connector Pin 2: Analogue in 2 0-5V

Circular connector Pin 3: Analogue in 3 0-5V

Circular connector Pin 4: Analogue in 4 0-5V

Circular connector Pin 5: Analogue in 5 0-5V

Circular connector Pin 6: Analogue in 6 0-5V

Circular connector Pin 7: Analogue in 7 0-5V

Circular connector Pin 8: Analogue in 8 0-5V

Circular connector Pin 10: +5V supply for analogue inputs (max 50mA)

Circular connector Pin 11: - for analogue inputs

* (To measure 0-10V connect 52Kohm in series with current analogue input)

* (To measure 0-30V connect 220Kohm in series with current analogue input)

Module ID 22: (alt ID17 alt ID10)

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 23: (alt ID18 alt ID11)

OUT (I/O):	1	2	3	4	5	6	7	8
------------	---	---	---	---	---	---	---	---

Module pin:	8	10	11	13	15	16	17	18
-------------	---	----	----	----	----	----	----	----

Module ID 24: (alt ID19 alt ID12)

OUT (I/O):	1	2	3 ⁴	4 ⁴	5 ²	6 ²	7 ²	8 ²
------------	---	---	----------------	----------------	----------------	----------------	----------------	----------------

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 you want to use these as "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)
- Module 22-24 have 32 internal flags each.
- Load, Max 2A / output, but not over 10A totally for the whole module..
- The outputs are protected against overload and short circuit.
- The module is terminated with 1,5kΩ internally.

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

- 1 CAN HI
- 2 CAN LOW
- 3 + 10-30VDC
- 4 - (GND)

INC/DEC PWM function in Multimodule V3.xx

In module address 24 2 outputs can be chosen as PWM outputs by specifying these as –Not connected – in the module configuration.

Module ID 24:

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

I/O 3	-Not Connected	▼
I/O 4	-Not Connected	▼

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).

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

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

The outputs is controlled from following flags in module address 24

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)

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)

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)

When the conditions in Flag **30** is valid "the comparison point" is moved to origin with or without ramp down according to the value in the flag. The ramp down can be set to a value between 0-255.
0=live stop without ramp down, 255 = 25.5s ramp down (from 100% output to 0).

When the conditions in Flag **31** is valid "the comparison 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.
 $3060/\text{constant value} \times 0.025 = \text{rise/fall time in seconds from min value to max value}$

Example:

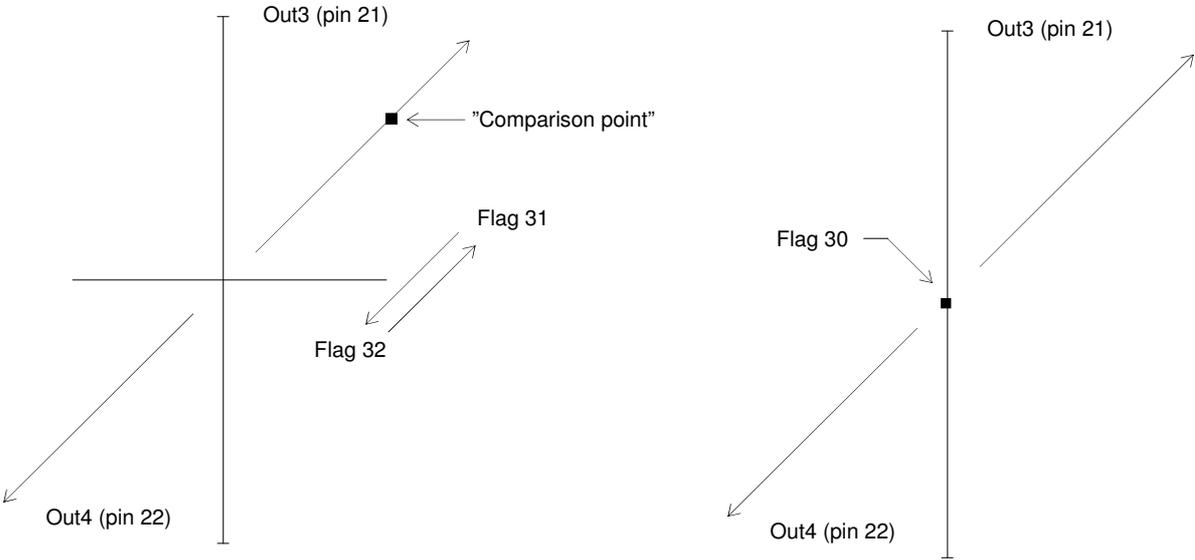
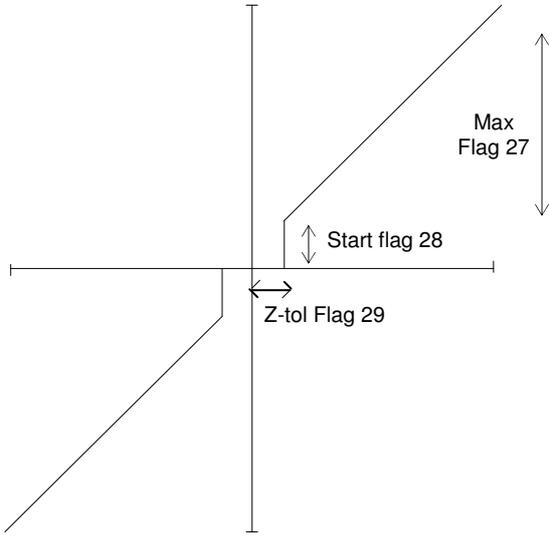
Constant value 1 = $3060 / 1 \times 0.025 = 76.5 \text{ seconds rise/fall time}$

Constant value 8 = $3060 / 8 \times 0.025 = 9.5 \text{ seconds rise/fall time}$

Constant value 50 = $3060 / 50 \times 0.025 = 1.5 \text{ seconds rise/fall time}$

When the conditions in Flag **32** is valid "the comparison 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.



SPECIAL FUNCTIONS (fromV36)

Funktionen SIM (simulate module) i ID 23

The function SIM can be used to send out eight flags from ID 23 on the bus with optional ID.

To activate the function write the following in the comment for the module with ID 23: 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 $\text{SIM},09,05$ in the comment for the module.
 Then flag 5-12 will be sent out on ID 9 port 1-8.

Function COUNT in ID 23 Flag 20 & 21

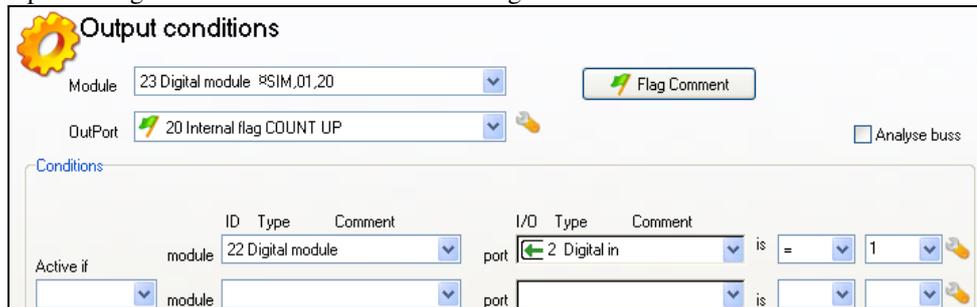
Flag 20 can be used as up-counter for example for counting numbers or at sequence programming. Each time the flag is true, the flags value is increased with 1 (after 255 the counter is set to 0).

Resetting: 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-up.

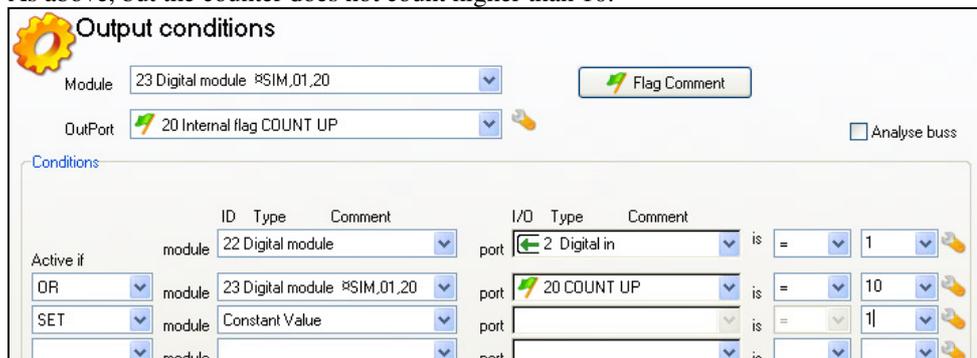
A timer on 0,2s is recommended as last instruction in Flag 20 to prevent that the counter counts due to contact bounces from inputs or when the logical conditions is time critical in the sequence programming.

Example below: The counter is increased when input ID22:2 = 1 and is set to zero when input ID22:3 = 1 or the counter is bigger than 25, and an example where the sequence counter is limited to max 10. Take notice of the SIM-function in the comment for the module, which put the counter on the bus in ID1:1.

Up-counting is done with the conditions in Flag 20



As above, but the counter does not count higher than 10.



Resetting is done with the conditions in Flag 21

Output conditions

Module: 23 Digital module 8SIM,01,20 [v] [Flag Comment]

OutPort: 21 Internal flag COUNT ZERO [v] [Analyse buss]

Conditions

Active if	ID	Type	Comment	I/O	Type	Comment	is		
[v]	22	Digital module		port	3	Digital in	=	1	[v]
OR [v]	23	Digital module 8SIM,01,20		port	20	COUNT UP	>	25	[v]
[v]		module		port			is		[v]

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.

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.

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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

<i>CanCom</i> 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)	



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22.09.2008

Produkt version 003
Serial number 003.XXXXXX



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