

logic modules 1600

design

30 x 90.4 x 25.5mm 30 x 136.4 x 25.5mm 30 x 159.4 x 25.5mm

logic module

1 x 4-way AND / OR **AND** respectively OR 2 x 2-way 1 x 8-way AND / OR 2 x 4-way **AND** respectively OR 1 x 10-way AND / OR 2 x 5-way AND

- 🗸 flat robust design
- ✓ 12-pin M12-connector for the connection line to the control unit
- ✓ 3-pin assignment of the M8-sockets for inputs
- ✓ LED status displays
- ✓ system of protection IP67
- simple vibration-proof connection of sensor leads

AND / OR logic operation on location minimized amount of cabling

PNP

M8

**

description

CE

It is often the case, that the signals of many sensors are linked in an application in order to provide a statement about an operational state.

If this linkage is adopted in the control unit, it is necessary to run the signals of each sensor up until there via leads, and process them in the control program.

In many cases, it would be sufficient to link the sensor signals to one another on-site and only transmit one linked end-signal to the control unit.

ipf electronic logic distribution terminals are used for this purpose. According to the module, up to 10 sensors can be connected and logically linked to one another. AND and/or OR versions are available as logical variants.

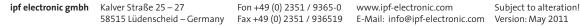
The user can directly see which signals are pending and/or

which are missing (as the case may be) by means of LED status display of the logic modules. The status of the linked end signals is similarly shown via output LEDs. All versions have two separated signal outputs. In the 2 x 2-way / 2 x 5way types, the input signals of the right and left module halves are linked independent from each other.

In the other logic modules, one output issues the result of the AND link and the other issues the result of the OR link. If, in the case of an AND module, an input slot cannot be taken up by a sensor, a so-called "jumper" plug can be supplied.

application examples

signal linkage of multiple sensors





1600 logic modules

	VL300104	VL300108
output	AND- / OR-linked, 4-way	AND- / OR-linked, 8-way
article-no.	VL300114	VL300118
output	AND-linked, 2 x 2-way	AND-linked, 2 x 4-way
article-no.	VL300134	VL300138
output	OR-linked, 2 x 2-way	OR-linked, 2 x 4-way
TECHNICAL DATA		
TECHNICAL DATA	pnp, no (signal on pin 4)	pnp, no (signal on pin 4)
	pnp, no (signal on pin 4) see above	pnp, no (signal on pin 4) see above
input output (linked)		
input output (linked) operating voltage	see above	see above
input output (linked)	see above 10 30V DC	see above 10 30V DC
input output (linked) operating voltage current consumption (max. load)	see above 10 30V DC 1A	see above 10 30V DC 1A
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance	see above 10 30V DC 1A 200mA per output > 10°Ω	see above 10 30V DC 1A 200mA per output > 10°Ω
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function)	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal)	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT)	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT)
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal)	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 × green LED 1 × yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 × green LED 1 × yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm -25 +70°C	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 \dots +70^{\circ}C$ ≤ 50	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C ≤ 50
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 \dots +70^{\circ}C$ ≤ 50 3	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C ≤ 50 3
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class	see above see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C ≤ 50 3 UL 94 V-0
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling	see above see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class system of protection (EN 60529)	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x90.4x25.5mm -25 +70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x125.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class system of protection (EN 60529) connection	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x90.4x25.5mm -25+70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x125.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class system of protection (EN 60529) connection connection accessories	see above see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin cable socket e.g. VK200C25 , 2m, PUR, straight	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x125.4x25.5mm -25 +70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin cable socket e.g. VK200C25 , 2m, PUR, straight
input output (linked) operating voltage current consumption (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class system of protection (EN 60529) connection	see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x90.4x25.5mm -25+70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin	see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x125.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs module: M12-connector, 12-pin

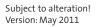




3



rticle-no. output	VL30010A AND- / OR-linked, 10-way	
irticle-no.	VL30011A	
output	AND-linked, 2 x 5-way	
nput		
nput utput (linked)	pnp, no (signal on pin 4) see above	
nput utput (linked) perating voltage	pnp, no (signal on pin 4)	
nput utput (linked) perating voltage urrent consumption (max. load)	pnp, no (signal on pin 4) see above 10 30V DC	
nput nutput (linked) perating voltage urrent consumption (max. load) nutput current (max. load)	pnp, no (signal on pin 4) see above 10 30V DC 1A	
nput nutput (linked) perating voltage urrent consumption (max. load) nutput current (max. load) nsulation resistance	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$	
nput putput (linked) operating voltage current consumption (max. load) putput current (max. load) nsulation resistance lisplay (function)	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output	
nput putput (linked) operating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal)	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot	
nput output (linked) operating voltage current consumption (max. load) output current (max. load) nsulation resistance display (function) display (signal) nousing material	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output > $10^{\circ}\Omega$ operating voltage: 1 x green LED	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal) nousing material	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output > $10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$	
nput putput (linked) perating voltage purrent consumption (max. load) putput current (max. load) nsulation resistance lisplay (function) lisplay (signal) nousing material contact material lesign	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm	
nput nputu (linked) perating voltage urrent consumption (max. load) putput current (max. load) nsulation resistance lisplay (function) lisplay (signal) nousing material ontact material lesign perating temperature	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal) nousing material contact material design perating temperature plug-in cycles	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance lisplay (function) lisplay (signal) nousing material contact material lesign perating temperature plug-in cycles legree of soiling	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ $30 \times 90.4 \times 25.5 mm$ $-25 +70^{\circ}C$ ≤ 50 3	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal) nousing material contact material design perating temperature plug-in cycles degree of soiling nflammability class	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal) nousing material contact material design perating temperature plug-in cycles degree of soiling nflammability class	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the	
nput putput (linked) perating voltage current consumption (max. load) putput current (max. load) nsulation resistance lisplay (function) lisplay (signal) nousing material contact material lesign perating temperature plug-in cycles legree of soiling nflammability class	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0	
nput putput (linked) operating voltage current consumption (max. load) putput current (max. load) nsulation resistance display (function) display (signal) nousing material contact material design operating temperature olug-in cycles degree of soiling nflammability class system of protection (EN 60529)	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ 30x90.4x25.5mm $-25 +70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the	
nput output (linked) operating voltage current consumption (max. load) output current (max. load) output current (max. load) onsulation resistance display (function) display (function) display (signal) nousing material contact material design operating temperature olug-in cycles degree of soiling nflammability class system of protection (EN 60529) connection	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output $> 10^{\circ}\Omega$ operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power $\ge 0.5N$ $30 \times 90.4 \times 25.5mm$ $-25 + 70^{\circ}C$ ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs	
TECHNICAL DATA input output (linked) operating voltage current consumption (max. load) output current (max. load) output current (max. load) insulation resistance display (function) display (signal) housing material contact material design operating temperature plug-in cycles degree of soiling inflammability class system of protection (EN 60529) connection connection accessories connection	pnp, no (signal on pin 4) see above 10 30V DC 1A 200mA per output > 10°Ω operating voltage: 1 x green LED 1 x yellow LED per slot plastic (PBT) CuZn, pre-nickled and gold-plated plug-in and pull-out power ≥ 0.5N 30x90.4x25.5mm -25 +70°C ≤ 50 3 UL 94 V-0 IP67 - only when screwed to the corresponding matching parts or plank plugs	





1600 logic modules

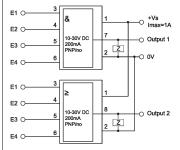
connection

	2-connector assignment	4-way logic module	8-way logic module
1	(brown)	+ 24V DC	+ 24V DC
2	(blue)	0V DC	0V DC
3	(white)	E1	output 1
4	(green)	E2	output 2
5	(pink)	E3	-
6	(yellow)	E4	-
7	(black)	output 1	output 1
8	(grey)	output 2	output 2
9	(red)	-	-
10	(purple)	-	-
11	(grey/pink)	-	-
12	(red/blue)	-	-

wire colors of the cable socket (module) in brackets

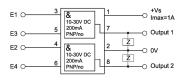
wiring diagrams





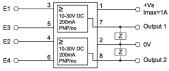
VL300114 2 x 2-way

VL300118 2 x 4-way

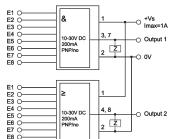


E1 C

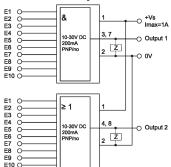
VL300134 2 x 2-way



VL300108 8-way



VL30010A 10-way



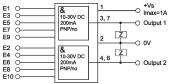
E5 0 E7 0	200mA PNP/no	-	Output 1
E2 0	& 10-30V DC		v
E6 0	200mA PNP/no		Output 2

3, 7

& 10-30V DC 200mA

+Vs ---- Imax=1A

VL30011A 2 x 5-way



VL300138 2 x 4-way

E1 0 E3 0 E5 0 E7 0	≥ 10-30V DC 200mA PNP/no	1 +Vs Imax=1A 3, 7 Output 1
E2 0 E4 0 E6 0 E8 0	≥ 10-30V DC 200mA PNP/no	2 Z 4, 8 Z O 0V

E1 to E10 are the inputs of the connected sensors (connections of the M8-connectors) 1 to 10 are the pin configurations of the module (connection for the M12-cable socket)

ACCESSORIES	
ACCESSORIES	

article-no.	description	material
VK000034	blank plug M8, 2x included in the scope of delivery	plastic
VK000042	jumper simulation "switching output on"	

Warning: Never use these devices in applications where the safety of a person depends on their functionality!





