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ELECTRONICS

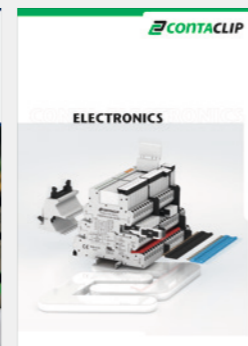## CONTA ELECTRONICS

WEBEASY I/O-MODULES

This product information includes additions to our Electronics product portfolio.

For our entire product range, please refer to our main CONTA-ELECTRONICS, or check our web page at www.conta-clip.com.
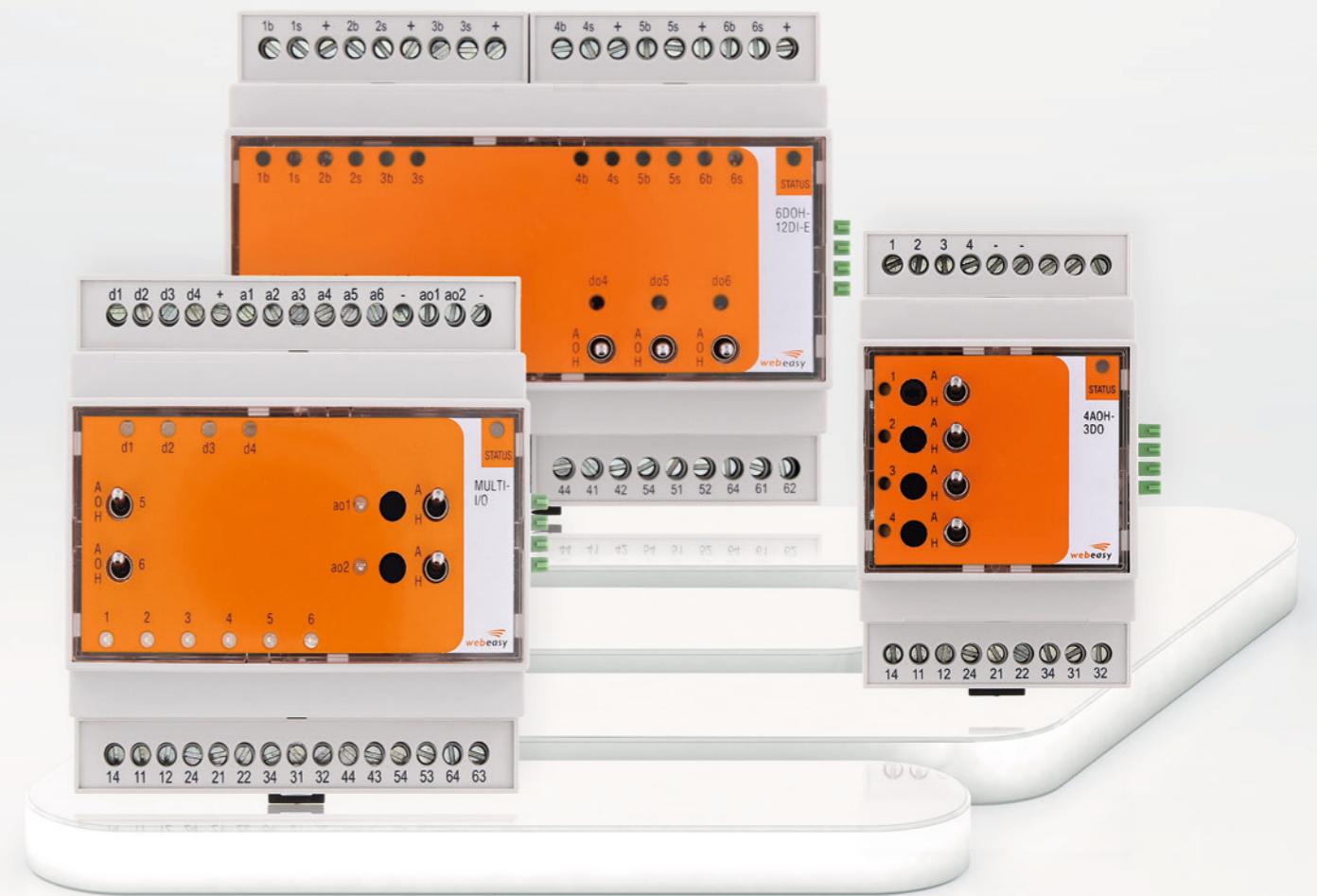
EN 03|16

CONTA-CONNECT
[Connection Systems]

CONTA-ELECTRONICS
[Electronics]

CONTA-CON
[PCB Connectors]

CONTA-CONNECT
CONNECTION SYSTEMS

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CONTA-CON
P.C. BOARD CONNECTORS

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PRODUCT INFORMATION

Webeasy I/O Modules — *Compact – Intelligent – Quick – Secure*

Modern buildings are becoming more and more automated. Optimization of the interior climate and the light controls are important functions of a building management system. Factors such as heat, cooling, air humidity and lux levels must all be synchronized. The well-being of inhabitants must also be harmonized with environmental factors, cost effectiveness and energy consumption. In addition the system should be up and running without malfunctions around the clock.

A central controller (a DDC system or PLC controller) is at the heart of every building system. It centralizes the flow of data and information and controls the configuration of parameters. Such a system uses I/O components for connecting up the required sensors and actuators for the control functions.

CONTA-CLIP's Webeasy product line provides a variety of modules that meet these requirements for setting up a professional building automation system.

An open bus system

The **CONTA-CLIP Webeasy** modules are bus-based components that can be installed either centralized in the electrical cabinet or decentralized in the field.

The data transmission takes place over a serial interface using the Modbus RTU protocol. This allows it to easily be integrated within various controller designs.

The Modbus RTU protocol is normally supported by all providers of controller systems.

It is quite easy to use: after the corresponding **Webeasy** modules are addressed, an entry is made in the designated register in the software.

Modbus RTU
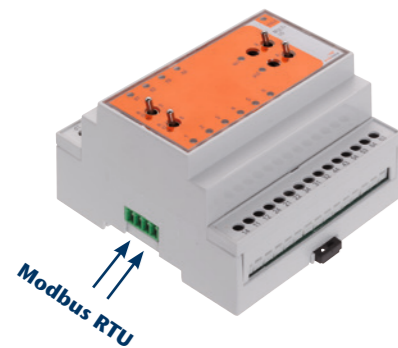
Permanent control of the outputs

Building parameters must be under control 24 hours a day. It must be possible to control them even when a software malfunction occurs at the controller level or when the system is being serviced.

The **Webeasy** modules enable you to control the system manually since practically all output modules are fitted with a Manual/Off/Automatic switch. This intervention switch can be used to disconnect field devices from the automated system in order to allow the facility to be run in an emergency situation.

So it would still be possible during a malfunction to separately operate the heating and ventilation systems.

Automated control without being on-site

There may not always be a service technician nearby when the time comes to use this intervention switch. The **Webeasy** modules feature an integrated processor which can run an emergency routine. This programmed routine describes what actions to take in the event of a malfunction. For example, you can specify that all outputs should be switched to ON in the event of a malfunction.

Quick and easy installation of the power supply and bus cable

The **Webeasy** (WE) modules have been designed for both centralized (in the electrical cabinet) or decentralized (in the field) signal transmission. They are quite simple to install.

At the local I/O level, the modules can simply be clicked together using the integrated WE plug-in connector to form the electrical connection between the required modules. The power supply and the Modbus serial interface are automatically fed in over the WE connector. Thus your installation becomes more efficient since you no longer need any additional cabling!
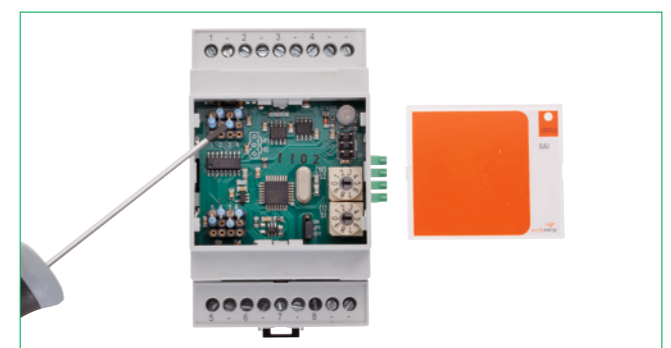
A standard twisted-pair cable can be used for the bus connection in a decentralized setup.

Simple and convenient to configure

An address from 0 to 99 can be selected for the bus assignment by using the two rotary switches.

All analog inputs are multi-functional; this means that a different signal (0 – 10 V, 0(4) – 20 mA, RTD) can be selected for each channel. The input type and the input value are set using standard resistors.

SERVER

MOD-BUS   MOD-BUS   I/O MODULE
KNX
BACNET-MSTP   M-BUS
LON   LON

x 64 Module
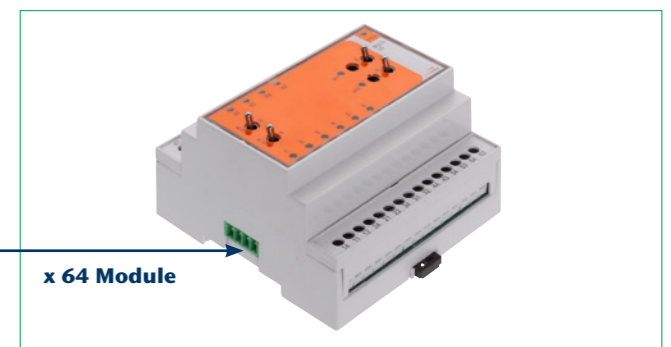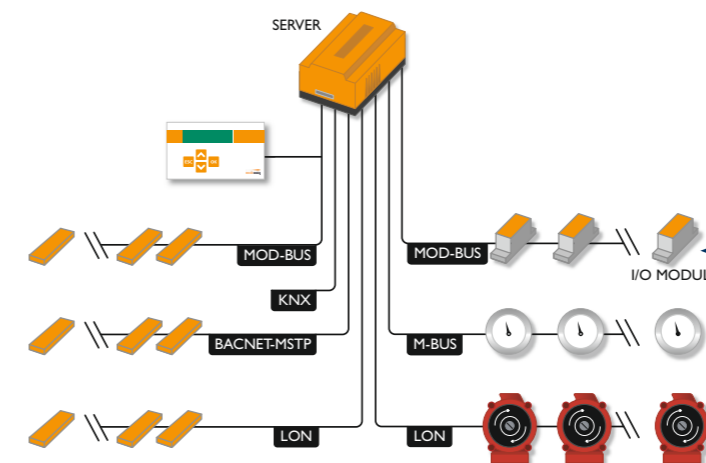
Up to 64 **Webeasy** modules can be connected on one bus. The cable length can be as long as 500 meters.

A summary of the features:

· Quick, compact, intelligent and secure
· Open system / Modbus RTU
· Can be controlled manually by using the intervention switch
· Compulsory control in event of communication interruption
· Quick and easy to install
· Simple and convenient to configure
· Can be extended up to 64 modules

Webeasy I/O Modules

Digital Input Module	WE-10DI	Circuit diagram
• 10 Digital inputs 24V AC/DC • LED indication per input • LED color slectable by software red or green		
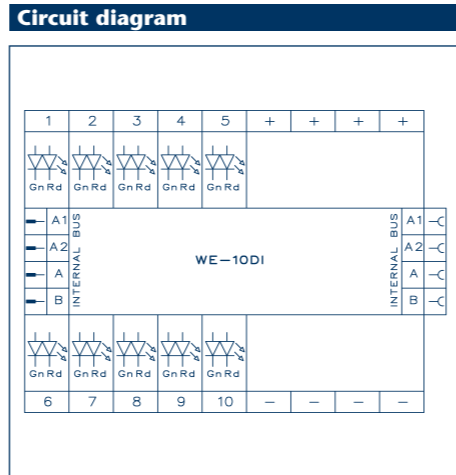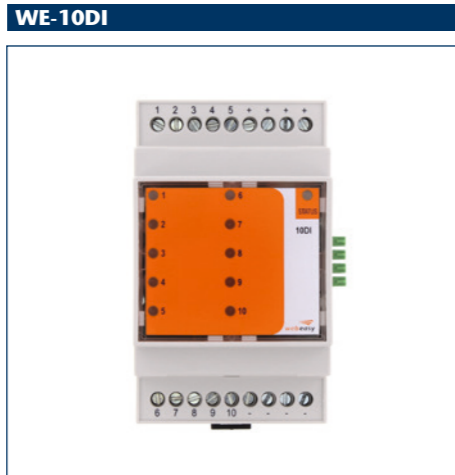
| Type
Cat. no. / Qty. | WE-10DI
15473.2/1 | |

Digital Output Module	WE-4DO	Circuit diagram
• 4 Relay outputs • 1 Changeover contact per relay • Max. 16A per relay (high inrush contacts) • Yellow LED indication per channel • Failsafe: outputs are set to a predefined state when communication is lost		
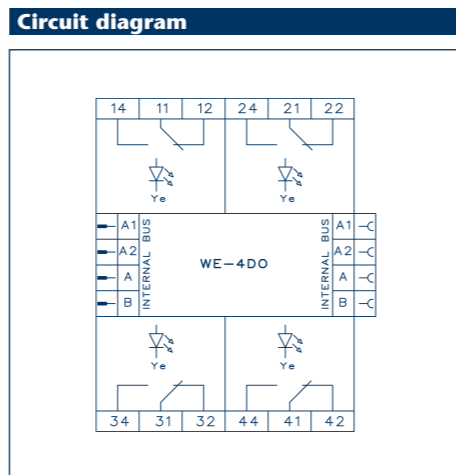
| Type
Cat. no. / Qty. | WE-4DO
15474.2/1 | |

Analog Input Module	WE-8AI	Circuit diagram
• 8 Multi-function analog inputs: 0..10V, 0(4)..20mA, NTC, RTD (PT1000, NI1000) • Indiviual setting per input		
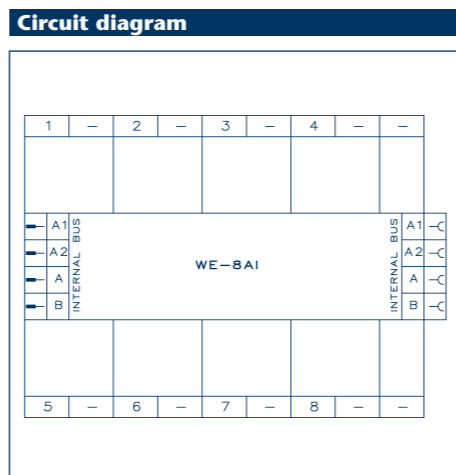
| Type
Cat. no. / Qty. | WE-8AI
15477.2/1 | |

Webeasy I/O Modules

Analog output Module	WE-4AO	Circuit diagram
• 4 Analog outputs 0..10V • Failsafe: outputs are set to a predefined state when communication is lost		
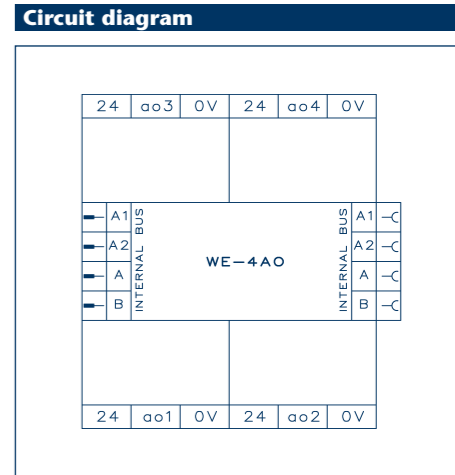
| Type
Cat. no. / Qty. | WE-4AO
16177.2/1 | |

Analog & Digital Output Module	WE-4AOH-3DO	Circuit diagram
• 4 Analog outputs 0..10V • Feedback measurement of analog outputs • Override switch (Auto - Manual) per analog output • Switch position detection circuit • Yellow LED indication per analog output • In Manual position, the analog outputs can be adjusted with a potentiometer • 3 Relay outputs • 1 changeover contact 250V / 8A per relay • Failsafe: all outputs are set to a predefined state when communication is lost		
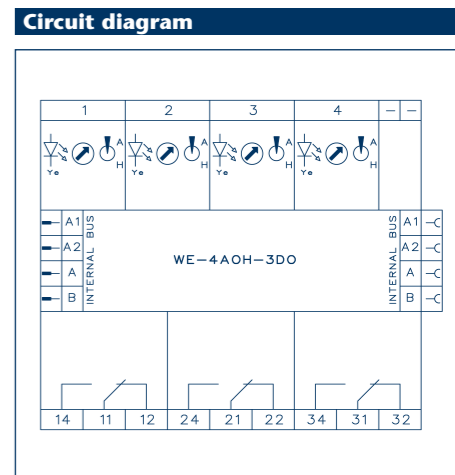
| Type
Cat. no. / Qty. | WE-4AOH-3DO
15478.2/1 | |

Analog & Digital Output Module	WE-4DOt-2AO	Circuit diagram
• 2 Analog outputs 0..10V • Yellow LED indication per analog output • 4 Triac outputs • Max. 24V AC / 0,5A per triac output • Green LED indication per triac output • Failsafe: all outputs are set to a predefined state when communication is lost		
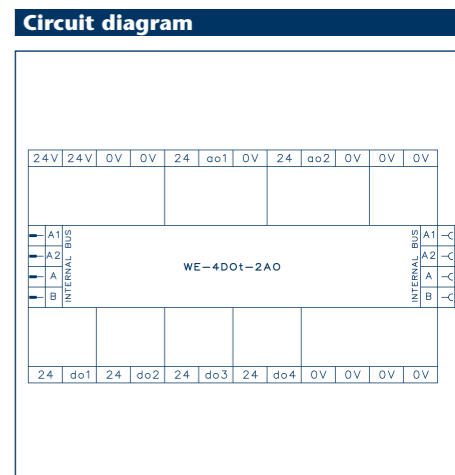
| Type
Cat. no. / Qty. | WE-4DOt-2AO
16118.2/1 | |

Webeasy I/O Modules

| Digital Input & Output Module	WE-6DOH-12DI-E	Circuit diagram
• 12 Digital inputs 24V AC / DC • LED indication per input • LED color slectable by software red or green • 6 Relay outputs • 1 Changeover contact 250V / 8A per relay • Override switch (Auto - Off - Manual) per relay • Switch position detection circuit • Yellow LED indication per relay output • Failsafe: all outputs are set to a predefined state when communication is lost		

| Type
Cat. no. / Qty. | WE-6DOH-12DI-E
16364.2/1 | |

Analog & Digital I/O Module	WE-MULTI-I/O	Circuit diagram
• 4 Digital inputs 24V AC / DC, bi-color LED • 6 Multi-function analog / digital inputs: 0..10V, 0(4)..20mA, NTC, RTD / 24V DC • 2 Analog outputs 0..10V, Yellow LED • Override switch (Auto - Manual) • Set analog outputs via potentiometers • 6 Relay outputs, 250V /8A • Override switch (Auto - Off - Manual) • Switch position detection circuit • Failsafe: all outputs are set to a predefined state when communication is lost		

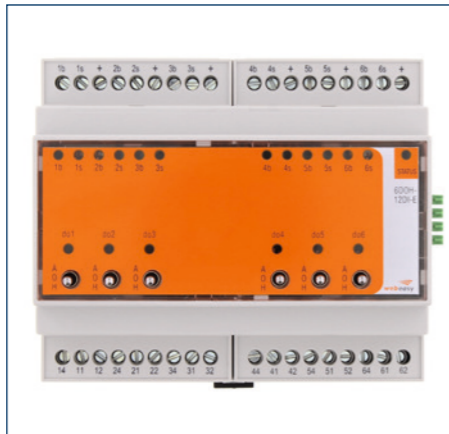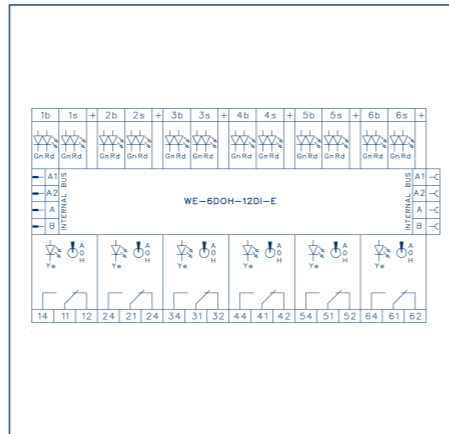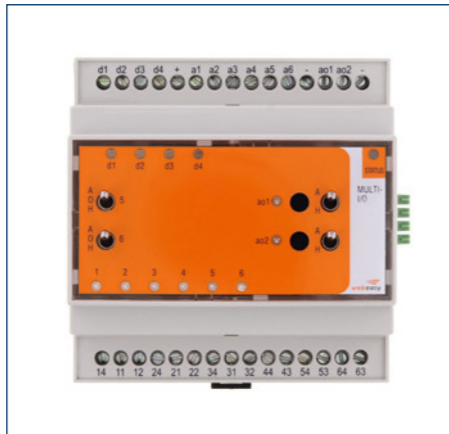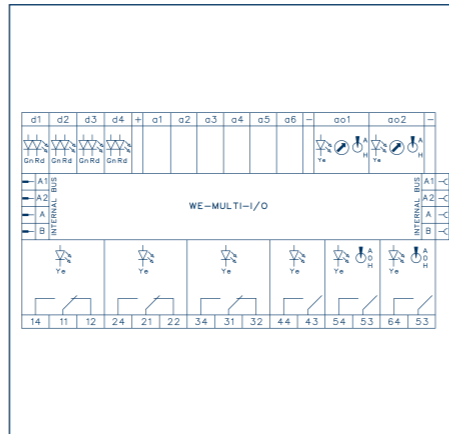| Type
Cat. no. / Qty. | WE-MULTI-I/O
15565.2/1 | |

Connection Module	WE-CON / WE-CON-R	Circuit diagram

• WE-CON
  • Easy Power and Bus connection via standard screw terminals
  • 24V overvoltage protection (varistor)
  • common mode bus filter
  • termination resistor (activate via dip switch)
• WE-CON-R
  • Easy Power and Bus connection via standard screw terminals		
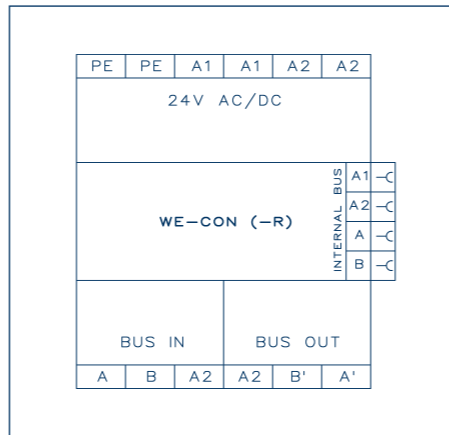
| Type
Cat. no. / Qty. | WE-CON
15745.2/1 | WE-CON-R
15984.2/1 |

Webeasy I/O Modules

Ethernet - Modbus Gateway Module	WE-CON-IP	Circuit diagram
• Connect Modbus I/O modules to the Internet with WE-CON-IP • 10BASE-T and 100BASE-TX • Auto MDI/MDIX • Integrated RS485 Bias circuit (default on) • Integrated termination resistor (default off)		
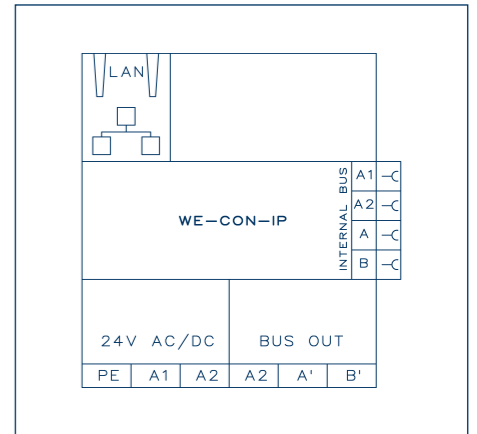
| Type
Cat. no. / Qty. | WE-CON-IP
16154.2/1 | |

Analog & Digital I/O Module & Ethernet	WE-IRC-IP	Circuit diagram

• 2x Ethernet 10BASE-T and 100BASE-TX, daisy-chained, auto MDI/MDIX
• 3 seperate RS485 Modbus ports
• 6 Multi-function analog / digital inputs: 0..10V / 0(4)..20mA / RTD / Contact
• 6 Analog outputs 0..10V
• Options:
  • Power over Ethernet
  • Plug-in: Bluetooth
  • Plug-in: DALI interface
  • Plug-in: 2 relais / triacs
 	
  (preliminary specification)		
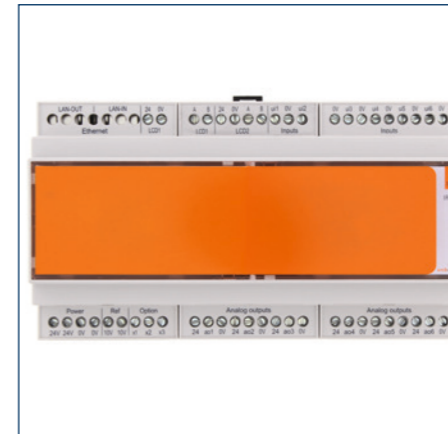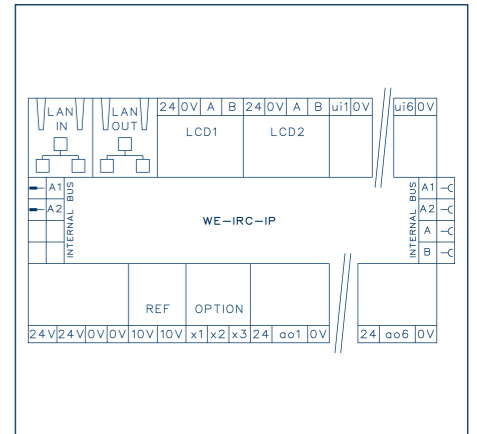
| Type
Cat. no. / Qty. | WE-IRC-IP
16371.2/1 | |

Analog & Digital I/O Module	WE-IRC	Circuit diagram
• 6 Multi-function analog / digital inputs: 0..10V / 0(4)..20mA / RTD / Contact • 2 Analog outputs 0..10V • 2 Triac outputs, 24V AC / 0,5A max. • 2 LED outputs, 24VDC / 20mA max. • Failsafe: all outputs are set to a predefined state when communication is lost		
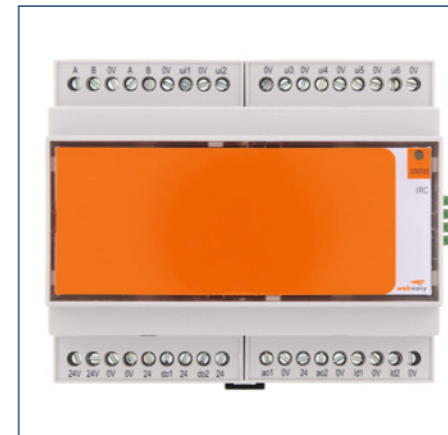
| Type
Cat. no. / Qty. | WE-IRC
16113.2/1 | |

Webeasy I/O Modules

Lighting control Module	WE-DALI	Circuit diagram

• Dedicated DALI Bus driver module
• Max. number of slaves (ballasts):
  • 16 ballasts (internally powered)
  • 64 ballasts (externally powered)
• Failsafe: all outputs are set to a predefined state when communication is lost
• select power source via jumper (default: internally powered)		
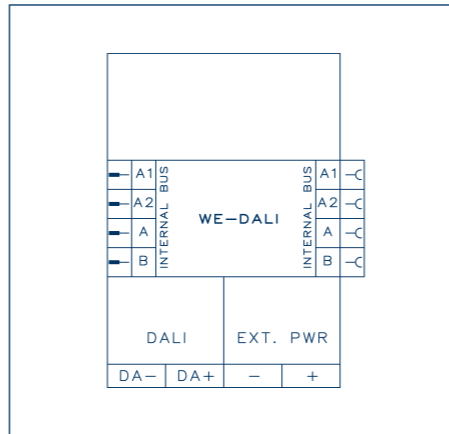
| Type
Cat. no. / Qty. | WE-DALI
16149.2/1 | |

Lighting control Module	WE-LIGHT	Circuit diagram
• Dedicated module for lighting control • 4 digital inputs • 2 relay outputs • Failsafe: all outputs are set to a predefined state when communication is lost • WE-LIGHT-ST: screw terminals in stead of Wieland connectors		
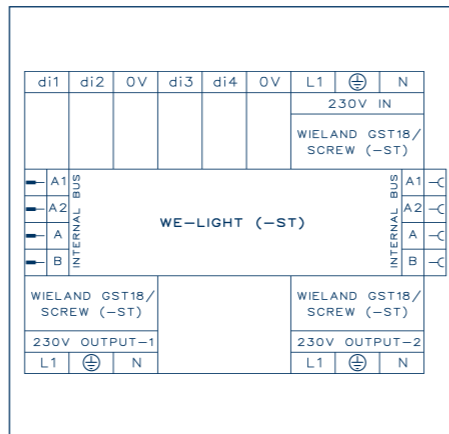
| Type
Cat. no. / Qty. | WE-LIGHT
16114.2/1 | WE-LIGHT-ST
16159.2/1 |

Lighting control Module	WE-LIGHT-DIM	Circuit diagram
• Dedicated module for lighting control • 2 universal inputs: 0..10V / Contact • 2 digital inputs • 2 relay outputs • 2 analog outputs 0..10V • Failsafe: all outputs are set to a predefined state when communication is lost • WE-LIGHT-DIM-ST: screw terminals in stead of Wieland connectors		
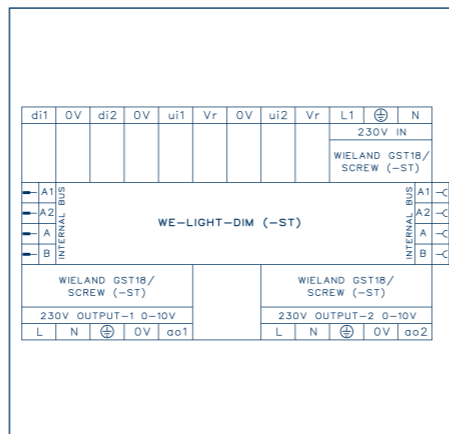
| Type
Cat. no. / Qty. | WE-LIGHT-DIM
16116.2/1 | WE-LIGHT-DIM-ST
16138.2/1 |

Webeasy I/O Modules

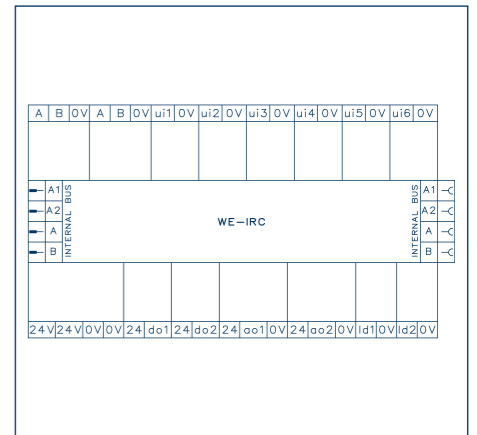| Sunblind control Module	WE-SUNBLIND	Circuit diagram
• Dedicated module for sunblind control • 2 digital inputs • 2 relay outputs • Failsafe: all outputs are set to a predefined state when communication is lost • WE-SUNBLIND-ST: screw terminals in stead of Wieland connectors		
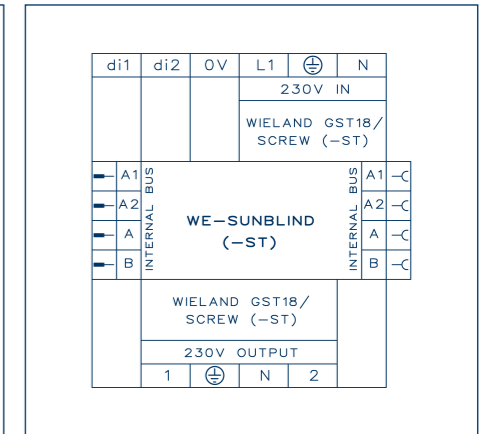
| Type
Cat. no. / Qty. | WE-SUNBLIND
16117.2/1 | WE-SUNBLIND-ST
16161.2/1 |

Fancoil control Module	WE-FANCOIL	Circuit diagram
• Dedicated module for fancoil units • 4 digital inputs • 3 relay outputs • Failsafe: all outputs are set to a predefined state when communication is lost • WE-FANCOIL-ST: screw terminals in stead of Wieland connectors		
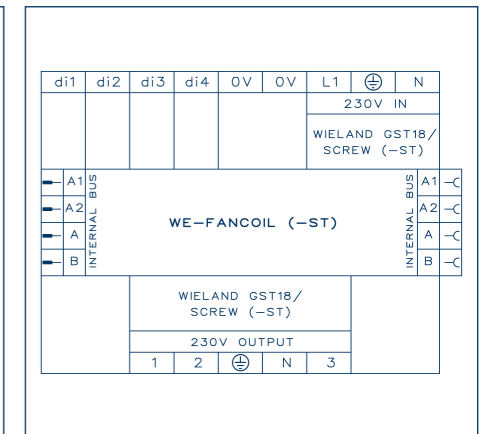
| Type
Cat. no. / Qty. | WE-FANCOIL
16115.2/1 | WE-FANCOIL-ST
16160.2/1 |

Connection Module	WE-SPLIT	Circuit diagram
• Provides dual screw connection for Power and Modbus, e.g. for connecting remote I/O Modbus modules • Power out is short-circuit protected • Modbus out is short-circuit- and overvoltage (24V) protected		

| Type
Cat. no. / Qty. | WE-SPLIT
16119.2/1 | |

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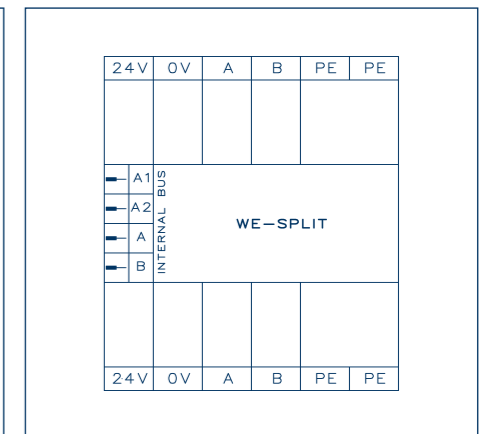| WE-CON	WE-CON-R	WE-CON-IP	WE-10DI	WE-4DO	WE-8AI	WE-4AOH-3DO	WE-6DOH-12DI-E	WE-MULTI-IO	Input / Output Data	
					8			6	**Universal Analog / Digital Input**	0..10V / 0(4)..20mA / RTD / 24Vdc*. Default: RTD input. Configure input type via plug-in resistors.
									Input resistance (0..10V)	Resistor type: Fixed (200 kOhm) The resistor plug-in socket must be empty
									Input resistance (0(4)..20mA)	Resistor type: Plug-in(Ri), 250 Ohm ± 0,1% Resistor not included
									Input resistance (RTD)	Resistor type: Plug-in(Rt), Sensor dependant ± 0,1%. Default: 5k11 for Ni/Pt1000 sensors -40..+120°C
									Resolution / conversion error (0..10V)	10bit / ± (10mV + 0,3% of measured value)
									Resolution / conv. error (0(4)..20mA)	10bit / ± (20uA + 0,4% of measured value)
									Resolution / conversion error (RTD)	14bit / ± (0,4°C + 0,5% of measured value)
									Temperature coefficient	< 0,02%/°C
									* 24Vdc input: MULTI-IO only Input current (24Vdc (10..30V))	min. @10V: 50uA / typ. @24V: 2,6mA / max. @30V: 3,9mA (the resistor plug-in socket must be empty)
			10				12	4	**Digital Input**	active High (apply external voltage on input pin, or use VDD (+) from the module)
									input voltage	24V ac (12..28V) / 24V dc (10..30V)
									Logic '0' ac / dc	<2V / <3V
									Max. frequency ac /dc	10Hz / 20Hz
									Min. Pulse length ac / dc	50ms / 15ms
									Input resistance	58kOhm
									VDD (+) output	may be used for this input only
									LED status indication	bi-colour LED per input (green/red/off, depending on selected input type)
						4		2	**Analog Output**	0...10V DC, short-circuit and overvoltage (24V AC/DC) protected
									Load resistance / current per channel	> 1 kOhm / < 10mA
									Resolution / conversion error	10bit / ± (30 mV + 0,5% of measured value)
									Temperature coefficient	< 0,02%/°C
									LED status indication	yellow LED. Light intensity depends on output value; <1,5V = no lighting.
				4		3	6	6	**Relay Output**	4AOH-3DO, 6DOH-12DI-E, MULTI-IO / 4DO
									Contact type	3x 1CO, 6x 1CO,3x 1CO + 3x 1NO / 4x 1CO
									Max. voltage	250V~ / 250V~
									Rated / inrush current (ohmic load)	8A / 12A / 16A / 80A (20ms)
									Max. total current (all relays)	32A / 32A
									Max. power rating	2000 VA / 4000 VA
									Electrical life span at rated / 2A load	1×10^5 / 4×10^5 cycles @ 23°C and Ohmic load / 1×10^5 / 7×10^5 cycles @ 23°C and Ohmic load
									Mechanical life span	30×10^6 cycles / 30×10^6 cycles
									Max. switching frequency	$360/72000\,h^{-1}$ with / without load / $360/72000\,h^{-1}$ with / without load
									Contact material	AgNi / AgSnO$_2$
									Relay test voltage coil - contact	5 kV / 5 kV
									Module intervention switch (A-0-H)	none, 6, 2 (NO contacts) / none
									LED status indication	none, yellow, yellow / yellow
		1							**Ethernet Bus Data**	IEEE 802.3 10BASE-T and 802.3u 100BASE-TX compliant, auto MDI/MDIX
									Protocol	TCP/IP
									Connector	RJ45, shielded, LED status indication
•	•	•	•	•	•	•	•	•	**Bus Data**	
•	•	•	•	•	•	•	•	•	Bus protocol / interface	Modbus RTU / RS485, half duplex, not isolated
•	•	•	•	•	•	•	•	•	Bus topology / length max.	multidrop line / 500m
•	•	•	•	•	•	•	•	•	Bus speed / nodes max.	19k2 bps / 64
•		•	•	•	•	•	•	•	Bus line termination	integrated termination resistors, activate via jumper (default: off)
•		•	•	•	•	•	•	•	Bus protection	built-in transient protection
•	•	•	•	•	•	•	•	•	Bus connector	pluggable integrated connector male/female (modules mounted with zero spacing, no cabling needed)
									Bus split connector (not included)	pluggable male or female screw connector, 0,2..1,0mm^2, insulation stripping length 7mm
•	•	•	•	•	•	•	•	•	Bus cabling	Shielded Twisted Pair (see: Manual Webeasy IO modules)
									General Data	
	•	•	•	•	•	•	•	•	LED indication: Status (bi-color)	run - no communication - error
•	•	•	•	•	•	•	•	•	Module power supply voltage	20..28V AC/DC (Bus connector current: 5A max.)
-	-	120	75	250	125	240	235	310	Module current AC	… mA typical @24V AC (all outputs active @ full load)
-	-	70	30	100	50	95	90	125	Module current DC	… mA typical @24V DC (all outputs active @ full load)
•	•	•	•	•	•	•	•	•	Operating / storage temperature	0°C…+50°C / -20°C…+70°C
•	•	•	•	•	•	•	•	•	Relative humidity	90% max., non-condensing
•	•	•	•	•	•	•	•	•	CE marking	Low Voltage Directive (LVD) 2006/95/EC, according requirements of EN 50178 EMC Directive 2004/108/EC, according requirements of EN 55011 and EN 61326-1
•	•	•	•	•	•	•	•	•	Conductor cross section / strip length	0,2 - 2,5 mm^2 screw clamp connection, insulation stripping length 6mm
•	•	•	•	•	•	•	•	•	Mounting / installation position	DIN-rail TS35 or direct mounting / any
36	36	71	53	53	53	53	106	88	Module size LxWxH	… x 95 x 60 mm
•	•	•	•	•	•	•	•	•	Insulating material / flammability class	Housing and I/O terminals: polycarbonate; bus terminals: polyamide 6.6 / UL94 - V0
•	•	•	•	•	•	•	•	•	Assembly	in rows with zero spacing (after connecting 15 modules, power must be connected externally again)
1	1	1	A	A	A	A	A	A	Module position in row	1: first position only. A: any position
•	•	•	•	•	•	•	•	•	Protection degree (DIN 40050)	IP 20
71	61	110	121	154	117	157	254	236	Weight (grams)	
•	•	•	•	•	•	•	•	•	Installation guidelines	On request

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WE-IRC	WE-4DOI-2AO	WE-FANCOIL (-ST)	WE-LIGHT-DIM (-ST)	WE-LIGHT (-ST)	WE-SUNBLIND (-ST)	WE-DALI	WE-4AO	WE-SPLIT	Input / Output Data	
6									**Universal Analog / Digital Input**	0..10V / 0(4)..20mA / RTD / Contact. Default: RTD input. Configure input type via plug-in resistors.
									Digital input (pull down)	Resistor type: Plug-in(Rt), Default: 5k11
									Input resistance (0..10V)	Resistor type: Fixed, >100 kOhm. The resistor plug-in socket must be empty
									Input resistance (0(4)..20mA)	Resistor type: Plug-in(Ri), 250 Ohm ± 0,1%. Resistor not included
									Input resistance (RTD)	Resistor type: Plug-in(Rt), Sensor dependant ± 0,1%. Default: 5k11 for Ni/Pt1000 sensors -40..+120°C
									Resolution / conversion error (0..10V)	10bit / ± (10mV + 0,3% of measured value)
									Resolution / conv. error (0(4)..20mA)	10bit / ± (20uA + 0,4% of measured value)
									Resolution / conversion error (RTD)	14bit / ± (0,4°C + 0,5% of measured value)
									Temperature coefficient	< 0,02%/°C
		2							**Universal Analog / Digital Input**	0..10V / Contact
									Digital input (pull up)	Connect sensor contact between input and reference voltage Vr
									Input resistance (0..10V)	94 kOhm
									Resolution / conversion error (0..10V)	10bit / ± (20mV + 5% of measured value)
									Reference voltage	10V ±5%
									Min. Potentiometer value	10 kOhm
		4	2	4	2				**Digital Input (pull down)**	Internal pull-up resistor: 24 kOhm. Connect sensor contact between input and 0V.
									Pull up voltage source	24V DC (typical 20..39V DC, unregulated, depending on load)
2	2	2					4		**Analog Output**	0...10V DC, short-circuit and overvoltage (24V AC/DC) protected
									Load resistance / current per channel	> 1 kOhm / < 10mA
									Resolution / conversion error	10bit / ± (30 mV + 2% of measured value)
									24V AC output current *	< 0,5A per channel, short-circuit protected via internal fuse (auto reset after cooling down) * WE-LIGHT-DIM(-ST) is not equipped with this terminal
2	4								**Triac Output**	24V AC
									Rated / inrush current (Ohmic load)	< 0,5A / 1A per channel, short-circuit protected via internal fuse (auto reset after cooling down)
		3	2	2	2				**Relay Output**	1NO contact, 250V~
									Rated / inrush current (ohmic load)	8A / 80A (20ms)
									Max. power rating	2000 VA
									Electrical life span at rated / 4A load	1×10^5 / 7×10^5 cycles @ 23°C and Ohmic load
									Mechanical life span	30×10^6 cycles
									Max. switching frequency	$360/72000\,h^{-1}$ with / without load
									Contact material	AgSnO$_2$
									Relay test voltage coil - contact	5 kV
2									**LED Output**	Open collector, short-circuit protected
									Current	< 20mA
									Output voltage for LED	24V DC (typical 20..39V DC, unregulated, depending on load)
						1			**DALI Bus**	
									Voltage output (internal supply)	18V DC ± 5%, 60mA max.
									Max. number of Slaves (ballasts)	16, if powered by the internal power supply / 64, if powered by an external power supply (250mA)
									Dali cable	2-wire 0,5 - 1,5mm^2 stranded, max. length 300m, 230V mains rated.
•	•	•	•	•	•	•	•	•	**Bus Data**	
•	•	•	•	•	•	•	•	•	Bus protocol / interface	Modbus RTU / RS485, half duplex, not isolated
•	•	•	•	•	•	•	•	•	Bus topology / length max.	multidrop line / 500m
•	•	•	•	•	•	•	•	•	Bus speed / nodes max.	19k2 bps / 64
•	•	•	•	•	•	•	•	•	Bus line termination	integrated termination resistors, activate via jumper (default: off)
•	•	•	•	•	•	•	•	•	Bus protection	built-in transient protection
•	•	•	•	•	•	•	•	•	Bus connector	pluggable integrated connector male/female (modules mounted with zero spacing, no cabling needed)
									Bus split connector (not included)	pluggable male or female screw connector, 0,2..1,0mm^2, insulation stripping length 7mm
•	•	•	•	•	•	•	•	•	Bus cabling	Shielded Twisted Pair (see: Manual Webeasy IO modules)
									General Data	
•	•	•	•	•	•	•	•	•	LED indication: Status (bi-color)	run - no communication - error
•	•	•	•	•	•	•	•	•	Module power supply voltage	20..28V AC/DC (WE-IRC: AC only if Triac outputs are used)
230	170	170	160	130	130	260	120		Module current AC	… mA typical @24V AC (all outputs active @ full load; triac output current excluded)
82	60	60	57	46	46	130	57	-	Module current DC	… mA typical @24V DC (all outputs active @ full load; triac output current excluded)
•									Max. current WE-IRC sub-Modbus	2,5A
•	•	•	•	•	•	•	•	•	Operating / storage temperature	0°C…+50°C / -20°C…+70°
•	•	•	•	•	•	•	•	•	Relative humidity	90% max., non-condensing
•	•	•	•	•	•	•	•	•	CE marking	Low Voltage Directive (LVD) 2006/95/EC, according requirements of EN 50178 EMC Directive 2004/108/EC, according requirements of EN 55011 and EN 61326-1
•	•	•	•	•	•	•	•	•	Conductor cross section / strip length	0,2 - 2,5 mm^2 screw clamp connection, insulation stripping length 6mm
•	•	•	•	•	•	•	•	•	Mounting / installation position	DIN-rail TS35 or direct mounting / any
106	71	71	106	71	71	71	36	36	Module size LxWxH	… x 95 x 60 mm
•	•	•	•	•	•	•	•	•	Insulating material / flammability class	Housing and I/O terminals: polycarbonate; bus terminals: polyamide 6.6/UL94-V0; Wieland: polyamide
•	•	•	•	•	•	•	•	•	Assembly	in rows with zero spacing (after connecting 15 modules, power must be connected externally again)
•	•	•	•	•	•	•	•	•	Protection degree (DIN 40050)	IP 20
224	142	168	219	163	150	126	66	64	Weight (grams)	
•	•	•	•	•	•	•	•	•	Installation guidelines	on request