

Pinout UNIGATE-IC (Stand 11.12.2019)

| Pin No. | Type | PB(only 5V)/ PB/PBL/PBX/PBY ⁽¹⁰⁾ | CO | DN | FE/MT ⁽⁹⁾ | IB (Old projects only) | RS | LN | MPI | PNE/BN 1-Port ⁽⁹⁾ | PNE/BN 2-Port (Only without magnetics) | EC 2-Port ⁽⁹⁾ |
|---------|-----------------------|---|--------------------------------|-------------------------------|------------------------------------|--|---|--------------------------------|-----------------|---------------------------------|---|---|
| 1 | VCC | 5V or 3.3V (not IC-PB) | 3V...5.5V | 3V...5.5V | 3V...5.5V | 5V or 3.3V | 3V...5.5V | 5V [3.3V ⁽⁸⁾] | 5V or 3.3V | 3.3V | 3.3V | 3.3V |
| 2 | IN _{Logic} | INPUT: -BootEnable | | | | | | | | | | |
| 3 | OUT _{Driver} | OUTPUT: Load Out (SPI-Master; SS0-) | | | | | | | | | | |
| 4 | OUT _{Driver} | OUTPUT: Data Out (SPI-Master: SS1-) / INPUT: SS- (only for SPI-Slave ⁽⁸⁾) | | | | | | | | | | |
| 5 | IN _{Logic} | INPUT: Data In (SPI: MISO) | | | | | | | | | | |
| 6 | OUT _{Logic} | OUTPUT: Load In (SPI: MOSI) | | | | | | | | | | |
| 7 | OUT _{Driver} | OUTPUT: Clock (SPI: SCK) / INPUT: SCK (only for SPI-Slave ⁽⁸⁾) | | | | | | | | | | |
| 8 | IN _{Reset} | INPUT: -Reset (min. 10ms for LN and IB, otherwise min. 10µs) | | | | | | | | | | |
| 9 | connected to pin 1 | VCC | VCC | VCC | VCC | VCC (5) | VCC | VCC | VCC | VCC (Only 3.3V) | VCC (Only 3.3V) | VCC (Only 3.3V) |
| 10 | | nc | nc | nc | Conncted to Pin 18 | nc | nc | nc | nc | Reserved ⁽¹⁴⁾ | Error-LED (A-red) | Error-LED (A-red) |
| 11 | | nc | nc | nc | Conncted to Pin 17 | nc | nc | nc | nc | Reserved ⁽¹⁴⁾ | LED-LINKACT1 (C-grn) | LED-LinkAct (Out) (C-grn) ⁽¹²⁾ |
| 12 | according to norm | nc | nc | nc | nc | IB-GND (3) | nc | nc | nc | nc | nc | nc |
| 13 | according to norm | PB- (8) / TxPB ⁽¹⁰⁾ | CANL (2) | CANL (2) | RJ45(6) / RD- | DI1- (7) | RX422- ⁽⁵⁾ | nc | MPI A- (8) | RJ45(6) / RD- | RD1- | RJ45(6 1"OUT") / RD1- |
| 14 | according to norm | PB+ (3) / RxPB ⁽¹⁰⁾ | CANH (7) | CANH (4) | RJ45(3) / RD+ | DI1 (2) | RX422+ ⁽⁵⁾ | LON-A (1) | MPI B+ (3) | RJ45(3) / RD+ | RD1+ | RJ45(3 1"OUT") / RD1+ |
| 15 | according to norm | PB-RTS (4) | nc | nc | RJ45(2) / TD- | DO1- (6) | TX422- ⁽⁵⁾ | LON-B (2) | MPI-RTS (4) | RJ45(2) / TD- | TD1- | RJ45(2 1"OUT") / TD1- |
| 16 | according to norm | nc | nc | nc | RJ45(1) / TD+ | DO1 (1) | TX422+ ⁽⁵⁾ | Ground (PE) | nc | RJ45(1) / TD+ | TD1+ | RJ45(1 1"OUT") / TD1+ |
| 17 | according to norm | nc | nc | V+ (5) | LED-LINKACT (C-grn) | DI2- (7) | Rx232 | Service- ⁽¹⁾ | nc | LED-LINKACT (C-grn) | TD2+ | RJ45(1 2"IN") / TD2+ |
| 18 | according to norm | nc | ⁽²⁾ | V- (1) | Reserved ⁽¹⁴⁾ | DI2 (2) | Tx232 | nc | nc | Error-LED (A-red) | TD2- | RJ45(2 2"IN") / TD2- |
| 19 | according to norm | PB-GND (5) | CAN-GND (3) | ⁽²⁾ | nc | DO2- (6) | RS-5V ⁽³⁾ / CTS ⁽¹⁹⁾ | nc | MPI-GND (5) | nc | RD2+ | RJ45(3 2"IN") / RD2+ |
| 20 | according to norm | PB-5V (6) | nc | nc | Ground (PE) | DO2 (1) | RS-GND ⁽³⁾ / RTS ⁽¹⁹⁾ | nc | MPI-5V (6) | Ground (PE) / nc ⁽⁵⁾ | RD2- | RJ45(6 2"IN") / RD2- |
| 21 | according to norm | nc | nc | nc | nc | RBST(9)/LED-RID (A-red)(bil) ⁽¹¹⁾ | nc | nc | nc | nc | nc | nc |
| 22 | according to norm | nc | nc | nc | Reserved ⁽¹⁴⁾ | LED-RESREG- (A-grn) | nc | nc | nc | Reserved ⁽¹⁴⁾ | LED-LINKACT2 (C-grn) | LED-LinkAct (In) (C-grn) ⁽¹²⁾ |
| 23 | according to norm | nc | nc | nc | Conncted to Pin 20 | LED-RBDA (A-ye)(bil) ⁽¹¹⁾ | nc | nc | nc | Reserved ⁽¹⁴⁾ | nc | Ground (PE) / nc ⁽³⁾ |
| 24 | connected to pin 32 | GND | GND | GND | GND | GND (3) | GND | GND | GND | GND | GND | GND |
| 25 | * | LED-PB (A-red) | LED-CAN (A-red) ⁽⁸⁾ | LED-DN (A-grn) ⁽⁸⁾ | LED-FE (A-grn) ⁽¹⁵⁾⁽¹⁷⁾ | LED-BA (A-grn) | LED-RS (A-red) | LED-LON (A-grn) ⁽⁸⁾ | LED-MPI (A-grn) | State-LED (A-grn) | State-LED (A-grn) | State-LED (A-grn) ⁽¹²⁾ |
| 26 | IN _{Logic} | INPUT: -Config Mode | | | | | | | | | | |
| 27 | OUT _{Logic} | OUTPUT: Debug Tx | | | | | | | | | | |
| 28 | IN _{Logic} | INPUT: Debug Rx | | | | | | | | | | |
| 29 | IN _{Logic} | INPUT: Data Rx | | | | | | | | | | |
| 30 | OUT _{Logic} | OUTPUT: Data Tx | | | | | | | | | | |
| 31 | OUT _{Logic} | OUTPUT: TEN (for RS485 or RS422) | | | | | | | | | | |
| 32 | GND | GND | | | | | | | | | | |

| | | | | | | | | | | | |
|------------------------------------|---|------------|-------------|--|-----------|---|------------|------------|--|-----------|--|
| Dimension (BxTxH over PCB): | PB =45x25x9,5mm PBL,PBX,PBY=45x25x12mm | 45x25x12mm | 45x25x9,5mm | 45x25x11mm 45x25x8mm ⁽⁵⁾ | 45x25x8mm | 45x25x12mm 45x25x9,5mm ⁽¹⁹⁾ | 45x25x13mm | 45x25x12mm | 45x25x11mm 45x25x8mm ⁽⁵⁾ | 45x25x8mm | 45x25x11mm 45x25x8mm ⁽⁵⁾ |
|------------------------------------|---|------------|-------------|--|-----------|---|------------|------------|--|-----------|--|

| Busconnector | Dsub female | Dsub male | 5pol-PHOENIX | RJ45 female | Dsub male (In) Female (Out) | No Standard | 2pol-PHOENIX | Dsub female | RJ45 female | RJ45 female | RJ45 female |
|---------------------------------|------------------------------|--------------------|--------------------|---------------------|-----------------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| M12 Coding | 3pol (B-invers) | 5pol (A-standard) | 5pol (A-standard) | 4pol (D-data) | 5pol (B-invers) | No Standard | No Standard | 3pol (B-invers) | 4pol (D-data) | 4pol (D-data) | 4pol (D-data) |
| I _{max} | 3,3/5V:170mA(typ),200mA(max) | 270mA | 75mA | 250mA | 250mA | 260mA | 75mA | 200mA | 390mA | 460mA | 230mA |
| SPI available | Master (max. 5MHz) | Master (max. 5MHz) | Master (max. 5MHz) | Master (max. 5MHz) | Master (max. 5MHz) | Master (max. 5MHz) | no ¹⁸⁾ | Master (max. 5MHz) | no ²⁰⁾ | Master (max. 1MHz) | Master (max. 5MHz) |
| Script-Length (actual firmware) | 2-16k ⁴⁾ | 12k/16k | 16k | 16k (bis Rev.D: 8k) | 8k | 16k | 8k | 16k | 32k (<Rev 42: 16k) | 32k (<Rev 42: 16k) | 16k |

nc = not connected

^{*)} A-red=Anode of red LED, A-grn=Anode of green LED, C-grn=Cathode of green LED (Details->Manual)

Serial-R located on UG-IC: 5V=1k5, 3,3V=470R

¹⁾ Pushbutton to GND

²⁾ Don't use. These signals are internal connected

³⁾ Only for termination resistors (alternativ RTS/CTS on request)

⁴⁾ 8k für DPV1, optional 16k for DPV1; 16k for DPX/DPY-IC, DPL-IC 2k; for IC2 4k (from 6/2019=16k)

⁵⁾ Without transformer

⁶⁾ For RS485 must RX422 connect with TX422

⁷⁾ Available in 5V (default) and 3,3V (on request)

⁸⁾ Not available in RS485-Mode with AT89C51RD2

⁹⁾ Available with or without magnetics (see User-Manual)

¹⁰⁾ Also available without PB-Driver or for LWL (see User-Manual)

¹¹⁾ SuPI3:RBST+LED A-red; SuPI4: Bicolor-LED yellow/red

¹²⁾ Connect ONLY the LED and no other components

¹³⁾ Only with RE2-Processor

¹⁴⁾ Make all 32 holes in pcb for future use of 2-port-IC

¹⁵⁾ With RD2 not available in RS485-Mode

¹⁶⁾ Data priliminary (under development)

¹⁷⁾ Signal may be inverted by Script

¹⁸⁾ On request

¹⁹⁾ Without galvanic isolation

²⁰⁾ No hardware implementation is available, but a software implementation. The clock rate being in the range of a few kHz.

PB = ProfibusDP

CO = CANopen

DN = DeviceNET

FE = Ethernet 10/100 MBit

IB = Interbus

RS = Serial RS232/485/422

LN = LONWorks

MPI = Siemens MPI[®]

PN = Profinet-IO

PL = Powerlink

EI = Ethernet/IP

EC = EtherCAT

ASI = AS-Interface (AS-i)

BN = BACnet/IP

MT = Modbus/TCP

| | | |
|--------------------------------------|-----------------|--------------------------|
| 5V±5% | V _{IL} | V _{IH} |
| IN _{Reset} (only LN and IB) | < 0,33V / 4mA | >1,95V / 10µA (max.5.5V) |
| IN _{Reset} | < 0,75V / 0,4mA | >2,5V / 10µA (max.4V) |
| IN _{Logic} | < 0,8V / 0,5mA | >1,95V / 10µA (max.5.5V) |
| | V _{OL} | V _{OH} |
| OUT _{Logic} | < 0,6V / 1mA | >3,8V / 0,1mA (max.5V) |
| OUT _{Driver} | < 0,33V / 4mA | >3,8V / 4mA (max.5V) |
| 3,3V±5% | V _{IL} | V _{IH} |
| IN _{Reset} (only LN and IB) | < 0,25V / 1mA | >1,5V / 10µA (max.5.5V) |
| IN _{Reset} (only EC) | < 0,45V / 1mA | >1,5V / 10µA (max.5.5V) |
| IN _{Reset} | < 0,75V / 0,4mA | >2,5V / 10µA (max.4V) |
| IN _{Logic} | < 0,5V / 0,4mA | >1,5V / 10µA (max.3.8V) |
| | V _{OL} | V _{OH} |
| OUT _{Logic} | < 0,6V / 1mA | >2,3V / 0,1mA(max.3.3V) |
| OUT _{Driver} | < 0,5V / 4mA | >2,5V / 4mA (max.3.3V) |

Pinout UNIGATE IC2 (17.05.2021)

| Pin No. | Type | PB | FE/MT ⁹⁾ | | | | | PN 2-Port (without magnetics only) | EC 2-Port ²⁰⁾ (without magnetics only) |
|---------|--|-------------------|-------------------------------|--|--|--|--|---------------------------------------|--|
| 1 | POWER | | | | | | | | |
| 2 | IN _{Logic} | | | | | | | | |
| 3 | IN _{Logic} /OUT _{Driver} | | | | | | | | |
| 4 | IN _{Logic} /OUT _{Driver} | | | | | | | | |
| 5 | IN _{Logic} /OUT _{Driver} | | | | | | | | |
| 6 | IN _{Logic} /OUT _{Driver} | | | | | | | | |
| 7 | IN _{Logic} /OUT _{Driver} | | | | | | | | |
| 8 | IN _{Reset} | | | | | | | | |
| 9 | POWER | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | nc | Conncted to Pin 18 | | | | | Error-LED (A-red) | Error-LED (A-red) |
| 12 | according to norm | nc | Conncted to Pin 17 | | | | | Link-LED1 (C-grn) | LED-LinkAct (Out) (C-grn) ¹²⁾ |
| 13 | according to norm | PB- (8) | RJ45(6) / RD- | | | | | RD1- | RD1- (OUT) |
| 14 | according to norm | PB+ (3) | RJ45(3) / RD+ | | | | | RD1+ | RD1+ (OUT) |
| 15 | according to norm | PB-RTS (4) | RJ45(2) / TD- | | | | | TD1- | TD1- (OUT) |
| 16 | according to norm | nc | RJ45(1) / TD+ | | | | | TD1+ | TD1+ (OUT) |
| 17 | according to norm | nc | LED-LINKACT (C-grn) | | | | | TD2+ | TD2+ (IN) |
| 18 | according to norm | nc | Reserved ¹⁴⁾ | | | | | TD2- | TD2- (IN) |
| 19 | according to norm | PB-GND (5) | nc | | | | | RD2+ | RD2+ (IN) |
| 20 | according to norm | PB-5V (6) | Ground (PE) | | | | | RD2- | RD2- (IN) |
| 21 | according to norm | nc | nc | | | | | nc | nc |
| 22 | according to norm | nc | nc | | | | | Link-LED2 (C-grn) | LED-LinkAct (In) (C-grn) ¹²⁾ |
| 23 | according to norm | nc | Conncted to Pin 20 | | | | | nc | nc |
| 24 | POWER | | | | | | | | |
| 25 | *) | LED-PB (A-red) | LED-FE (A-grn) ¹⁷⁾ | | | | | | |
| 26 | IN _{Logic} | | | | | | | State-LED (A-grn) | State-LED (A-grn) ¹²⁾ |
| 27 | OUT _{Driver} | | | | | | | | |
| 28 | IN _{Logic} | | | | | | | | |
| 29 | IN _{Logic} | | | | | | | | |
| 30 | OUT _{Driver} | | | | | | | | |
| 31 | OUT _{Driver} | | | | | | | | |
| 32 | POWER | | | | | | | | |

| Dimensions | | | | | | | | | |
|------------------------------|--|-------|-------|--|--|--|--|------|-------|
| Overall length | | | | | | | | | 45 mm |
| Width | | | | | | | | | 25 mm |
| Hight (top to seating plane) | | 13 mm | 11 mm | | | | | 8 mm | 8 mm |

| | | | | | | | | | |
|-----------------------------|--------------------------|----------------------|--|--|--|--|--|--------------------------|----------------------|
| Busconnector | Dsub female | RJ45 female | | | | | | RJ45 female | RJ45 female |
| M12 Coding | 3pol (B-invers) | 4pol (D-data) | | | | | | 4pol (D-data) | 4pol (D-data) |
| I_{max} | 280 mA | 210 mA | | | | | | 460 mA | 250 mA |
| SPI master | 12 Mbit/s ²¹⁾ | 12 Mbit/s | | | | | | 12 Mbit/s ²¹⁾ | |
| SPI slave | 10 Mbit/s ²¹⁾ | 10 Mbit/s | | | | | | 10 Mbit/s ²¹⁾ | |
| Script storage space | 16 kB | 4 kB | | | | | | 16 kB | 16 kB |

nc = not connected

PB = ProfibusDP

*) A-red=Anode of red LED, A-grn=Anode of green LED, C-grn=Cathode of green LED
(Details->Manual), current limiting 470R resistor present in UNIGATE

FE = Ethernet 10/100 MBit

PN = PROFINET

¹⁾ Pushbutton to GND

EC = EtherCAT

²⁾ Don't use. These signals are internal connected

³⁾ Only for termination resistors (alternativ RTS/CTS on request)

⁴⁾

⁵⁾ Without transformer

⁶⁾ For RS485 must RX422 connect with TX422

⁷⁾

⁸⁾

⁹⁾ Available with or without magnetics (see User-Manual)

¹⁰⁾

¹¹⁾

¹²⁾ Connect ONLY the LED and no other components

¹³⁾

¹⁴⁾ Make all 32 holes in pcb for future use of 2-port-IC

¹⁵⁾

¹⁶⁾ Data priliminary (under development)

¹⁷⁾ Signal may be inverted by Script

¹⁸⁾ On request

¹⁹⁾ Without galvanic isolation

²⁰⁾ Preliminary values, product is not yet released

²¹⁾ The SPI controller supports transfer rates up to 48 (14) Mbit/s in master (slave) mode.
These high transfer rates are not verified, though. The higher the transfer rate the more care must be taken with respect to appropriate signal routing.

| | | |
|-----------------------|-----------------|-------------------|
| 3,3V±5% | V _{IL} | V _{IH} |
| IN _{Reset} | < 0,75V | >2,5V (max. 4,1V) |
| IN _{Logic} | < 0,8V | >2V (max. 5V) |
| | V _{OL} | V _{OH} |
| OUT _{Driver} | < 0,4V / 6mA | >2,7V / 6mA |