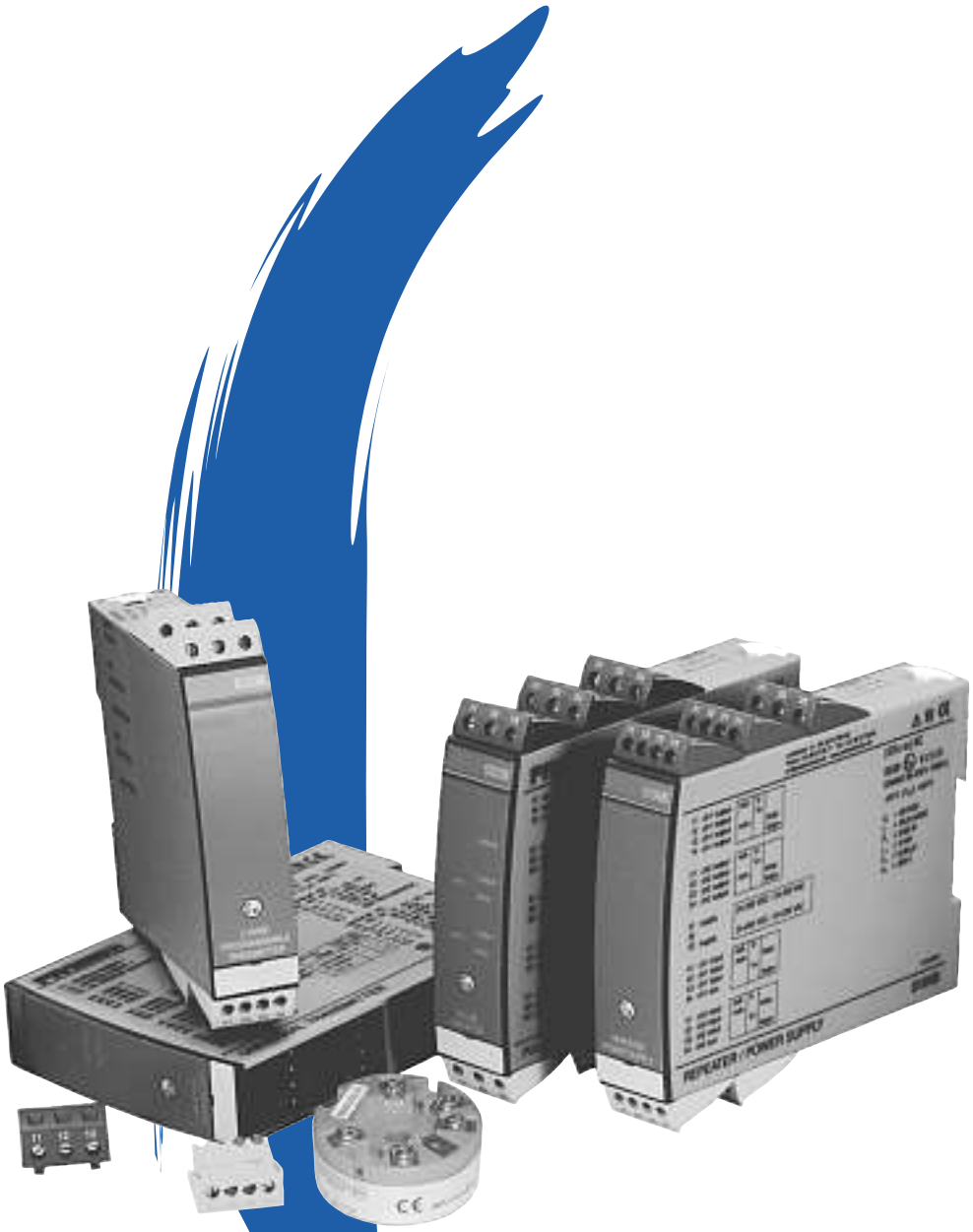
Control Units 1011



上海欧逸机电工程设备有限公司
地址：上海市沪太路3777号5305室 邮编：200444
电话：021-51875816，传真：021-51875821
Http：//www.shhfl.com; E-mail：sales@shhfl.com

Control Units 1011
Table of contents

Index

Instructions for instrument selection in the catalogue

So that the customer gets the best equipment solution according to his requirements, we recommend this simple procedure using the following pages:
- Define the functionality of the control unit, incl. required approvals.
- Find out the assembly or disassembly situation.
- With the type description a price quotation can be made or the instrument can be ordered.

Control Units 1011
Certificates / Approvals

Certificates

SCHWEIZERISCHER VEREIN FÜR QUALITÄTS- UND MANAGEMENTSYSTEME
Certified according to ISO 9000 rev. 2000

Approvals

The company Heinrich Kübler AG can manufacture control units to most national and industrial approvals. Therefore a wide range of instruments with approvals requirements can be produced according to customer's requests.

GERMANISCHER LLOYD (Building of ships)
Approval for the production of control units according to GL-regulations

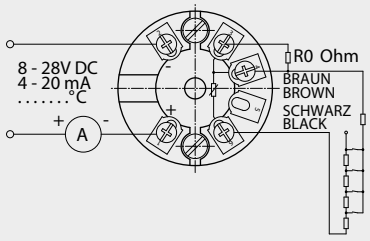
BUREAU VERITAS (Building of ships)
Approval for the production of control units according to BV-regulations

REGISTRO ITALIANO NAVALE (Building of ships)
Approval for the production of control units according to RINA-regulations

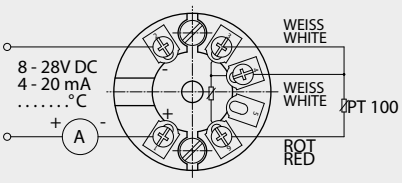
Control Units 1011
Transmitter TP 5333

Technical data	TP 5333A	TP 5333B Ex
Power Supply:	8 ... 35 V DC	8 ... 28 V DC
Current output:	4.0 ... 20.0 mA	4.0 ... 20.0 mA
Operating temperature max.:	85 °C	85 °C
Error alarm:	3.5 ... 23.0 mA	3.5 ... 23.0 mA
Input:	PT-100 (-200 °C ... +850 °C) Linear 0kOhm ... 10kOhm	PT-100 (-200 °C ... +850 °C) Linear 0kOhm ... 10kOhm
Protection rating:	IP68 / IP00 (housing / connection)	IP68 / IP00 (housing / connection)
Weight:	50 gr	50 gr
Dimension:	ø 44.0 x 20.2 mm	ø 44.0 x 20.2 mm
Connection diameter max.:	ø 1 x 1.5 mm²	ø 1 x 1.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 28 V DC Ii 120 mA DC Pi 0.84 W Li ≤ 10 µH Ci ≤ 1nF
Approval:	- - -	DEMKO 99 ATEX 126964 EExia IIC T1 ... T6 FM/acc. to drawing 5300Q502
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Programming software:	5905 Loop Link	5905 Loop Link
Functional description:	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Programmable • Head mounting or DIN rail	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Programmable • Head mounting or DIN rail • ATEX and FM approved

2 - wire



2 - wire

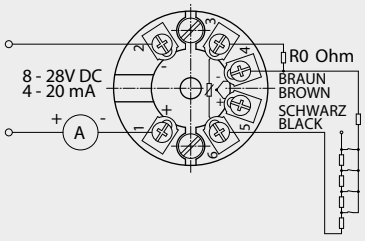


Type combination not possible

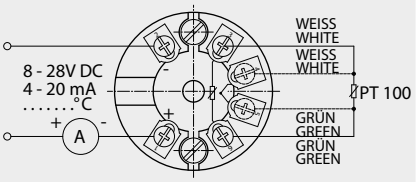
Control Units 1011
Transmitter TD 5335 Hart®-programmable

Technical data	TD 5335A	TD 5335B Ex
Power Supply:	8 ... 35 V DC	8 ... 28 V DC
Current output:	4.0 ... 20.0 mA	4.0 ... 20.0 mA
Operating temperature max.:	85 °C	85 °C
Error alarm:	3.5 ... 22.0 mA	3.5 ... 23.0 mA
Input:	PT-100 (-200 °C ... +850 °C) Linear 0kOhm ... 7kOhm	PT-100 (-200 °C ... +850 °C) Linear 0kOhm ... 7kOhm
Protection rating:	IP68 / IP00 (housing / connection)	IP68 / IP00 (housing / connection)
Weight:	50 gr	50 gr
Dimension:	ø 44.0 x 20.2 mm	ø 44.0 x 20.2 mm
Connection diameter max.:	ø 1 x 1.5 mm²	ø 1 x 1.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 28 V DC Ii 120 mA DC Pi 0.84 W Li ≤ 10 µH Ci ≤ 1nF
Approval:	- - - IEC 61508 SIL 2	DEMKO 99 ATEX 126965 EExia IIC T1 ... T6 FM/acc. to drawing 5300Q502 IEC 61508 SIL 2
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Programming software:	5905 Loop Link & Hart®Modem	5905 Loop Link & Hart®Modem
Functional description:	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Programmable • Head mounting or DIN rail • Hart®- programmable	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Programmable • Head mounting or DIN rail • ATEX and FM approved • Hart®- programmable

2 - wire



2 - wire

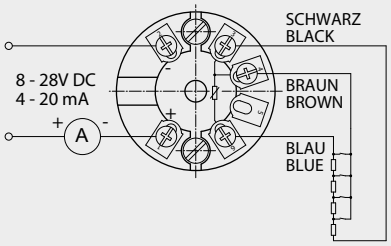


Type combination not possible

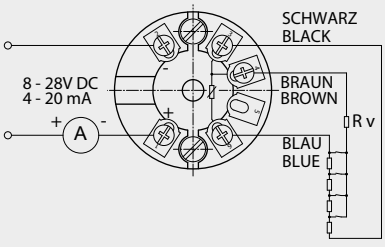
Control Units 1011
Transmitter TP 5343

Technical data	TP 5343A	TP 5343B Ex
Power Supply: **Current output:** **Operating temperature max.:** **Error alarm:** **Input:**	8 ... 35 V DC 4.0 ... 20.0 mA 85 °C 3.5 ... 22.0 mA 3-wire potentiometer 1kOhm ... 100kOhm	8 ... 28 V DC 4.0 ... 20.0 mA 85 °C 3.5 ... 23.0 mA 3-wire potentiometer 1kOhm ... 100kOhm
Protection rating: **Weight:** **Dimension:** **Connection diameter max.:** **Atmospheric humidity max.:**	IP68 / IP00 (housing / connection) 50 gr ø 44.0 x 20.2 mm ø 1 x 1.5 mm² < 95 % RH (not condensed)	IP68 / IP00 (housing / connection) 50 gr ø 44.0 x 20.2 mm ø 1 x 1.5 mm² < 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 28 V DC Ii 120 mA DC Pi 0.84 W Li ≤ 10 µH Ci ≤ 1nF
Approval:	- -	DEMKO 99 ATEX 127088 EExia IIC T1 ... T6
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Programming software:	5999 Prelevel	5999 Prelevel
Functional description:	• 3-wire potentiometer • High measuring accuracy • Programmable • Head mounting or DIN rail	• 3-wire potentiometer • High measuring accuracy • Programmable • Head mounting or DIN rail • ATEX approved

2 - wire



2 - wire

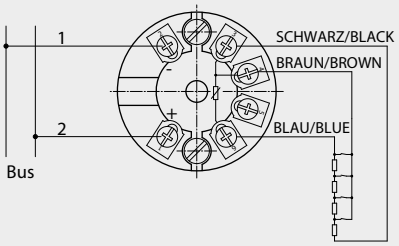


Type combination not possible

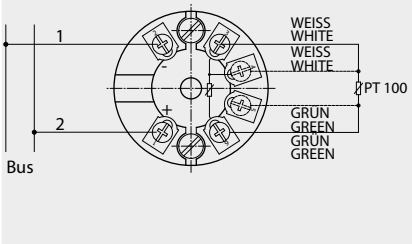
Control Units 1011
Transmitter TP 5350 Profibus PA / Fieldbus

Technical data	TP 5350A	TP 5350B Ex
Power Supply: **Current output:** **Operating temperature max.:** **Input:**	9 ... 32 V DC Foundation Fieldbus ITK4.51 Profibus PA 85 °C 3-wire potentiometer RTD input value	9 ... 30 V DC Foundation Fieldbus ITK4.51 Profibus PA 85 °C 3-wire potentiometer RTD input value
Protection rating: **Weight:** **Dimension:** **Connection diameter max.:** **Atmospheric humidity max.:**	IP68 / IP00 (housing / connection) 50 gr ø 44.0 x 20.2 mm ø 1 x 1.5 mm^2 < 95 % RH (not condensed)	IP68 / IP00 (housing / connection) 50 gr ø 44.0 x 20.2 mm ø 1 x 1.5 mm^2 < 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 28 V DC Ii 120 mA DC Pi 0.84 W Li ≤ 10 µH Ci ≤ 1 nF
Approval:	- -	KEMA 02 ATEX1318 EExia IIC T1 ... T6
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020 / 50 284
Programming Profibus:	Siemens Simatic PDM ABB Melody / Honeywell AX Metso Damatec XD	Siemens Simatic PDM ABB Melody / Honeywell AX Metso Damatec XD
Programming Fieldbus:	Emerson Delta V - ABB Melody Yokogawa CS 1000 - CS 3000 Honeywell Psource	Emerson Delta V - ABB Melody Yokogawa CS 1000 - CS 3000 Honeywell Psource
Functional description:	• 3-wire potentiometer • RTD input value • Programmable • Head mounting or DIN rail	• 3-wire potentiometer • RTD input value • Programmable • Head mounting or DIN rail • ATEX approved

2 - wire



2 - wire

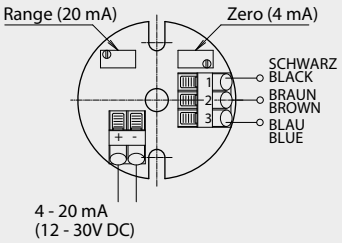


Type combination not possible

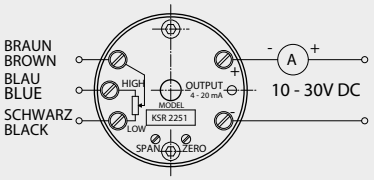
Control Units 1011
Transmitters XT-42-Si / ZMUL-2251

Technical data	XT 42 Si	ZMUL-2251 Ex
Power Supply: **Current output:** **Operating temperature max.:** **Error alarm:** **Input:**	12 ... 30 V DC 4.0 ... 20.0 mA 70 °C 3.7 ... 22.0 mA 3-wire potentiometer 1kOhm ... 100kOhm	10 ... 30 V DC 4.0 ... 20.0 mA 60 °C 3.5 ... 23.0 mA 3-wire potentiometer 1kOhm ... 100kOhm
Protection rating: **Weight:** **Dimension:** **Connection diameter max.:** **Atmospheric humidity max.:**	IP20 / IP00 (housing / connection) 40 gr ø 44.0 x 18.0 mm ø 1 x 1.5 mm² < 95 % RH (not condensed)	IP20 / IP00 (housing / connection) 40 gr ø 44.0 x 20.2 mm ø 1 x 1.5 mm² < 95 % RH (not condensed)
Intrinsically safe data:	1000 Ohm U_B30 V DC 700 Ohm U_B24 V DC 500 Ohm U_B12 V DC	Ui 28 V DC Ii 120 mA DC Pi 0.84 W
Approval:	L.C.I.E. 02. ATEX 6073X ATEX EExia IIC T5 ... T6 Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano Navale (RINA)	SABS MS/N921 ATEX EExib IIC T5 ... T6
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Calibration and potentiometer:	0% and 100% alignment	0% and 100% alignment
Functional description:	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Head mounting or DIN rail • ATEX approved	• RTD input value • Resistance input • High measuring accuracy • 3-wire input • Head mounting or DIN rail • ATEX approved

2 - wire potentiometer



2 - wire potentiometer

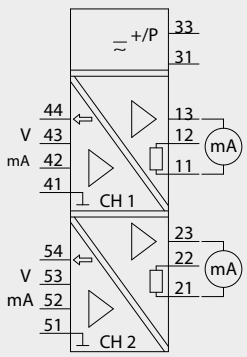


Type combination not possible

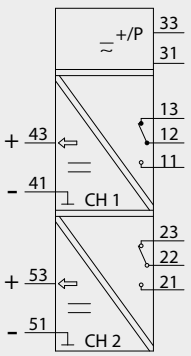
Control Units 1011
Power supplies 5104B / 5420B

Technical data	5104B Ex	5420B Ex
Power Supply:	24 ... 230 V DC / AC universal	24 ... 230 V DC / AC universal
Current input:	4.0 ... 20.0 mA / 2.0 ... 10.0 V DC	4.0 ... 20.0 mA / 2.0 ... 10.0 V DC
Current output:	4.0 ... 20.0 mA / 2.0 ... 10.0 V DC	4.0 ... 20.0 mA / 2.0 ... 10.0 V DC
Operating temperature max.:	85 °C	85 °C
Error alarm:	3.5 ... 23.0 mA	3.5 ... 23.0 mA
Input:	2-wire	2-wire
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	225 gr	225 gr
Dimension:	109.0 x 23.5 x 130 mm	109.0 x 23.5 x 130 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	U_m <250 V U_o 28.0 V DC I_o 93 mA DC P_o <0.65 W L_o <3 mH C_o <0.08 µF	U_m <250 V U_o 28.0 V DC I_o 93 mA DC P_o <0.65 W L_o <3 mH C_o <0.08 µF
Approval:	DEMKO 99 ATEX 126013 EExia II C / II (1) G Zone 0, 1 or 2	DEMKO 99 ATEX 126256 EExia II C / II (1) G Zone 0, 1 or 2
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Measuring channels:	1 or 2 measuring channels	1 or 2 meas.channels with relay
Functional description:	• Universal Power Supply • 2-wire drive • 1 or 2 measuring channels • ATEX approved • DIN mounting rail	• Universal Power Supply • 2-wire drive • 1 or 2 measuring channels • ATEX approved • DIN mounting rail • Relay alarm output

Block diagram



Block diagram

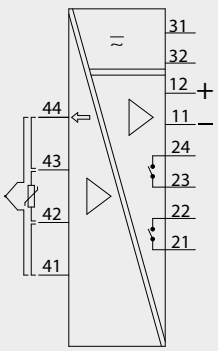


Type combination not possible

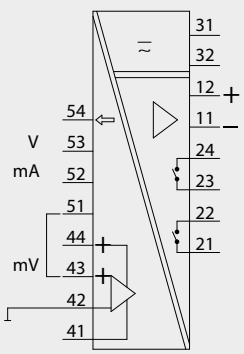
Control Units 1011
Transmitter with relay 5111

Technical data	5111A	5111B Ex
Power Supply:	24 ... 230 V AC / DC universal	24 ... 230 V AC / DC universal
Input signal:	mA / mV / V / RTD / TC / R	mA / mV / V / RTD / TC / R
Output signal:	-20.0 ... +20.0 mA -10 ... +10 V DC	-20.0 ... +20.0 mA -10 ... +10 V DC
Relay:	2 pcs. (250 V / 500 VA / 1A)	2 pcs. (250 V / 500 VA / 1A)
Operating temperature max.:	85 °C	85 °C
Error alarm:	3.5 ... 23.0 mA	3.5 ... 23.0 mA
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	225 gr	225 gr
Dimension:	109.0 x 23.5 x 130 mm	109.0 x 23.5 x 130 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 28 V DC Ii 110 mA DC Pi 0.65 W Li ≤ 4.2 mH Ci ≤ 0.08 µF
Approval:	- -	DEMKO 01 ATEX 130321 EExia IIC
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Programming software:	5901 Opto Link Interface	5901 Opto Link Interface
Functional description:	• Programmable by PC • Multifunctions • High measuring accuracy • Universal Power Supply • Relay outputs • DIN mounting rail	• Programmable by PC • Resistance input • High measuring accuracy • 3-wire input • DIN mounting rail • ATEX approved

Block diagram



Block diagram

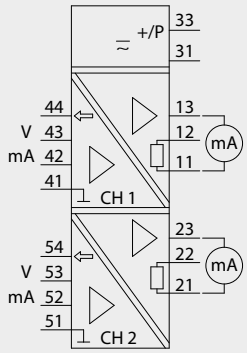


Type combination not possible

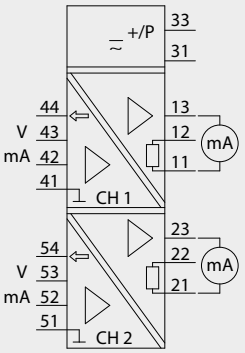
Control Units 1011
Transmitter 5114

Technical data	5114A	5114B Ex
Power Supply: **Input signal:** **Output signal:** **Operating temperature max.:** **Error alarm:**	24 ... 230 V AC / DC universal mA / mV / V / RTD / TC / R 0.0 ... +20.0 mA 0 ... +10 V DC 85 °C 3.5 ... 23.0mA	24 ... 230 V AC / DC universal mA / mV / V / RTD / TC / R 0.0 ... +20.0 mA 0 ... +10 V DC 85 °C 3.5 ... 23.0mA
Protection rating: **Weight:** **Dimension:** **Connection diameter max.:** **Atmospheric humidity max.:**	IP20 / IP50 225 gr 109.0 x 23.5 x 130 mm ø 1 x 2.5 mm^2 < 95 % RH (not condensed)	IP20 / IP50 225 gr 109.0 x 23.5 x 130 mm ø 1 x 2.5 mm^2 < 95 % RH (not condensed)
Intrinsically safe data:	- - - - - -	U_m <250 V U_o 28.0 V DC I_o 87.0 mA DC P_o <0.62 W L_o <4.2 mH C_o <80 nF
Approval:	- -	DEMKO 99 ATEX 124571 EExia IIC
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Measuring channels:	1 or 2 measuring channels	1 or 2 measuring channels
Programming software:	5905 Loop Link	5905 Loop Link Interface
Functional description:	• Programmable by PC • Multifunctions • High measuring accuracy • Universal Power Supply • 1 or 2 measuring channels • DIN mounting rail	• Programmable by PC • Multifunctions • High measuring accuracy • Universal Power Supply • 1 or 2 measuring channels • DIN mounting rail • ATEX approved

Block diagram



Block diagram

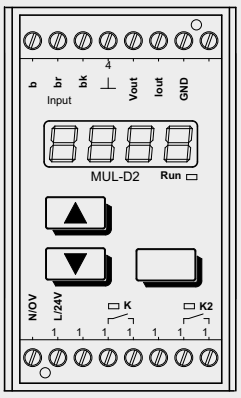


Type combination not possible

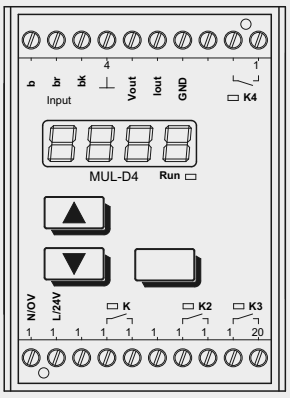
Control Units 1011
Transmitters MUL - D2 / MUL - D4

Technical data	MUL - D2	MUL - D4
Power Supply:	18 ... 36 V DC 24 V / 115 V / 230 V AC	18 ... 36 V DC 24 V / 115 V / 230 V AC
Input signal:	3-wire potentiometer 1kOhm ... 100kOhm	3-wire potentiometer 1kOhm ... 100kOhm
Output signal:	0.0 (4.0) ... 20.0 mA 0 (2) ... 10 V DC	0.0 (4.0) ... 20.0 mA 0 (2) ... 10 V DC
Operating temperature max.:	0 ... +50 °C	0 ... +50 °C
Relay:	2 pcs. max. 500 VA / 230 V	4 pcs. max. 500 VA / 230 V
Display:	4 digit 7-Segment LED display in red Size 7.6 mm Free scaling	4 digit 7-Segment LED display in red Size 7.6 mm Free scaling
Power consumption:	4.0 VA	4.0 VA
Protection rating:	IP20 / IP40	IP20 / IP40
Weight:	325 gr	395 gr
Dimension:	75.0 x 45.0 x 115.0 mm	75.0 x 55.0 x 115.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Programming software:	By programming buttons	By programming buttons
Functional description:	• Programmable • Multifunctions • High measuring accuracy • Universal Power Supply • 2 relay outputs • DIN mounting rail	• Programmable • Multifunctions • High measuring accuracy • Universal Power Supply • 4 relay outputs • DIN mounting rail

Block diagram



Block diagram

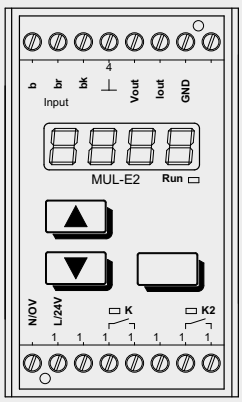


Type combination not possible

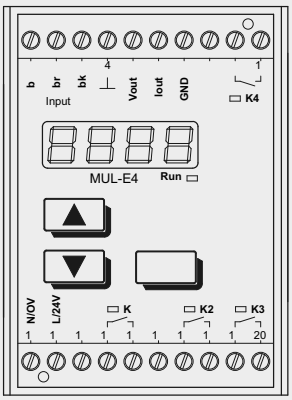
Control Units 1011
Transmitters MUL - E2 / MUL - E4

Technical data	MUL - E2	MUL - E4
Power Supply:	18 ... 36 V DC 24 V / 115 V / 230 V AC	18 ... 36 V DC 24 V / 115 V / 230 V AC
Input signal:	3-wire potentiometer 1 kOhm ... 100 kOhm	3-wire potentiometer 1 kOhm ... 100 kOhm
Output signal:	0.0 (4.0) ... 20.0 mA Free linearization 0 (2) ... 10 V DC Free linearization	0.0 (4.0) ... 20.0 mA Free linearization 0 (2) ... 10 V DC Free linearization
Operating temperature max.:	0 ... +50 °C	0 ... +50 °C
Relay:	2 pcs. max. 500 VA / 230 V	4 pcs. max. 500 VA / 230 V
Display:	4 digit 7-Segment LED display in red Size 7.6 mm Free scaling	4 digit 7-Segment LED display in red Size 7.6 mm Free scaling
Power consumption:	4.0 VA	4.0 VA
Protection rating:	IP20 / IP40	IP20 / IP40
Weight:	325 gr	395 gr
Dimension:	75.0 x 45.0 x 115.0 mm	75.0 x 55.0 x 115.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081 Immunity EN 50 082	Emission EN 50 081 Immunity EN 50 082
Measuring channels:	1 measuring channel	1 measuring channel
Programming software:	By programming buttons	By programming buttons
Functional description:	• Programmable • Multifunctions • High measuring accuracy • Universal Power Supply • 2 relay outputs • DIN mounting rail • Linearization	• Programmable • Multifunctions • High measuring accuracy • Universal Power Supply • 4 relay outputs • DIN mounting rail • Linearization

Block diagram



Block diagram

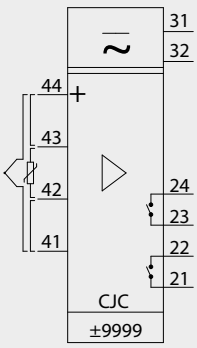


Type combination not possible

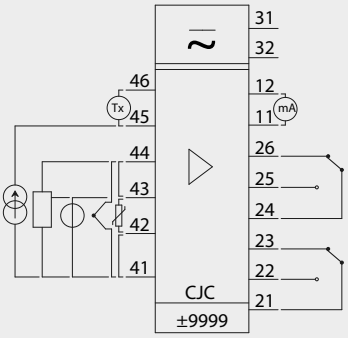
Control Units 1011
Digital indicators 5515 / 5714

Technical data	5515	5714
Power Supply:	24 ... 230 V AC / DC universal	24 ... 230 V AC / DC universal
Input signal:	mA / A / mV / V / RTD / TC / R 2-wire control units	mA / A / mV / V / RTD / TC / R 2-wire control units
Output signal:	-	0 / 4 m 20 mA
Output relays:	- - -	2 relays max. 240 V AC / 2 A / 500 VA max. 24 V DC / max. 1 A
Operating temperature max.:	85 °C	85 °C
Display:	4 digit LED display in red Digit height 14.2 mm Free scaling	4 digit LED display in red Digit height 13.8 mm Free scaling
Protection rating:	IP65	IP65
Weight:	330 gr	210 gr
Dimension:	48.0 x 96.0 x 120.0 mm	48.0 x 96.0 x 120.0 mm
Mounting dimensioning:	44.5 x 91.5 x 120.0 mm	44.5 x 91.5 x 120.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 90 % RH (not condensed)	< 90 % RH (not condensed)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 61 326 EN 61 010-1 Immunity EN 61 326 EN 61 010-1
Measuring channels:	1 measuring channel	1 measuring channel
Programming software:	By programming buttons	By programming buttons
Functional description:	• Programmable by buttons • Multifunctions • High measuring accuracy • Universal Power Supply • 1 measuring channel • Front mounting	• Programmable by buttons • Multifunctions • High measuring accuracy • Universal Power Supply • 1 measuring channel • Front mounting • analog output

Block diagram



Block diagram

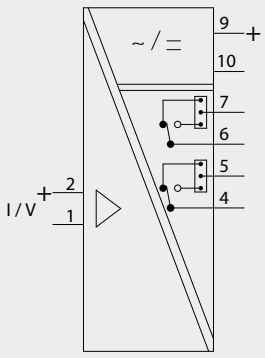


Type combination not possible

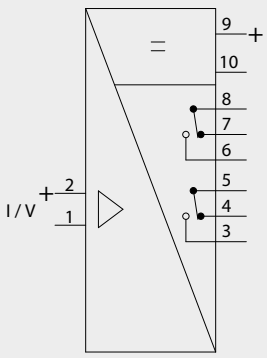
Control Units 1011
Set point relay 2231 / 2238

Technical data	2231	2238
Power Supply:	24 ... 230 V AC 24 ... 230 V AC 24 V DC	24 V DC
Input signal:	0.0 ... 20 mA 0.0 ... 1 A 0 ... 250 V DC 0 ... 250 V AC	0.0 ... 20 mA 0.0 ... 1 A 0 ... 250 V DC 0 ... 250 V AC
Output signal:	2 relays Change over Potential free max. 240 V AC / 2 A / 500 VA max. 24 V DC / 1 A	2 relays Change over Potential free max. 240 V AC / 2 A / 500 VA max. 24 V DC / 1 A
Operating temperature max.:	85 °C	85 °C
Display:	3 digit LED display in red Digit height 14.2 mm Free scaling	- - -
Protection rating:	IP50	IP50
Weight:	175 gr	175 gr
Dimension:	84.5 x 35.5 x 80.5 mm	84.5 x 35.5 x 80.5 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Set point adjustment:	By programming buttons	By turning knob
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Programmable by buttons • Multifunctions • High measuring accuracy • 1 measuring channel • DIN mounting rail • 2 set points	• Programmable by turning knob • Multifunctions • High measuring accuracy • 1 measuring channel • DIN mounting rail • 2 set points

Block diagram



Block diagram

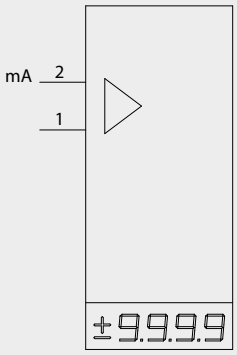


Type combination not possible

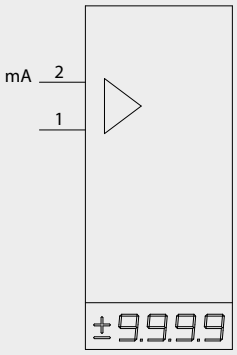
Control Units 1011
Digital loop-powered indicator 5531

Technical data	5531A	5531B Ex
Power Supply:	Current signal scaled 4-20 mA (no auxiliary power necessary)	Current signal scaled 4-20 mA (no auxiliary power necessary)
Current input:	3.6 ... 23 mA	3.6 ... 23 mA
Backlight:	Voltage drop by: 0 % < 1.5 V DC 50 % < 6.5 V DC 100 % < 10.5 V DC	Voltage drop by: 0 % < 1.5 V DC 50 % < 6.5 V DC 100 % < 10.5 V DC
Operating temperature max.:	85 °C	85 °C
Display:	4 digit LCD Display Digit height 16.0 mm Free scaling Backlight in green	4 digit LCD Display Digit height 16.0 mm Free scaling Backlight in green
Protection rating:	IP65	IP65
Weight:	150 gr	150 gr
Dimension:	48.0 x 96.0 x 120.0 mm	48.0 x 96.0 x 120.0 mm
Mounting dimensioning:	44.5 x 91.5 mm	44.5 x 91.5 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	- - - - -	Ui 45 V DC Ii 500 mA DC Pi 0.90 W Li ≤ 0 µH Ci ≤ 0 nF
Approval:	-	DEMKO 02 ATEX 132122 II 2G EExia IIC T6
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020 EN 50 284
Functional description:	• Free scaling • Loop Power Supply • With backlight • 4 digit	• Free scaling • Loop Power Supply • With backlight • 4 digit • ATEX approved

Block diagram



Block diagram

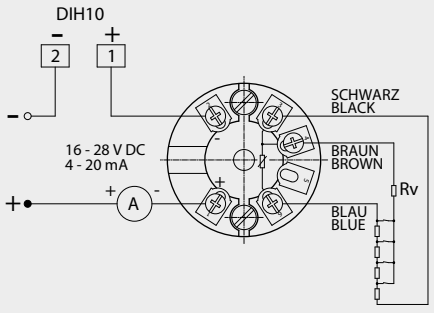


Type combination not possible

Control Units 1011
Digital loop-powered indicator DAL

Technical data	DALA	DALB Ex
Power Supply:	Current signal scaled 4-20 mA (no auxiliary power necessary)	Current signal scaled 4-20 mA (no auxiliary power necessary)
Current input:	4.0 ... 20 mA	4.0 ... 20 mA
Operating temperature max.:	60 °C	60 °C
Display:	4 digit LED display in red Digit height 8.0 mm Free scaling Overflow = HI / Underflow = LO ... °C / ... °F or ... %	4 digit LED display in red Digit height 8.0 mm Free scaling Overflow = HI / Underflow = LO ... °C / ... °F or ... %
Input resistor by 20mA:	<250 Ohm	<250 Ohm
Indicating interval:	0.1 / 1.0 / 10.0 sec. adjustable	0.1 / 1.0 / 10.0 sec. adjustable
Temperature drift:	100 ppm/K	100 ppm/K
Housing material:	Aluminium coated	Aluminium coated
Display cover:	Macrolon	Macrolon
Protection rating:	IP65	IP65
Weight:	400 gr	400 gr
Dimension:	130 x 75 mm	130 x 75 mm
Mounting:	NPT ½" Muffe	NPT ½" Muffe
Connection diameter max.:	ø 1 x 1.5 mm²	ø 1 x 1.5 mm²
Cable entry:	M20 x 1.5mm / NPT ½"	M20 x 1.5mm / NPT ½"
Atmospheric humidity max.:	< 90 % RH (not condensed)	< 90 % RH (not condensed)
Approval:	- -	ATEX II 2G EExia IIC T6 ATEX II 2G EExd IIC T6 (AB 2005)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Functional description:	• Free scaling • Loop Power Supply • LED display in red • 4 digit • For mounting onto Level Sensor	• Free scaling • Loop Power Supply • LED display in red • 4 digit • For mounting onto Level Sensor • ATEX approved

Block diagram

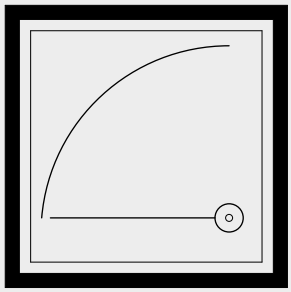


Type combination not possible

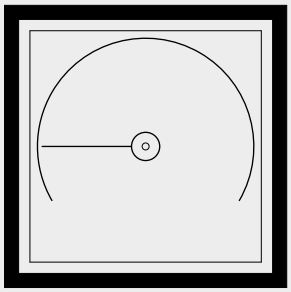
Control Units 1011
Analogous loop panel meter

Technical data	A .. 90° Square scale	A .. - K 240° Square scale
Current input:	0.0 ... 100.0 µA 0.0 ... 20.0 mA 4.0 ... 20.0 mA	0.0 ... 100.0 µA 0.0 ... 20.0 mA 4.0 ... 20.0 mA
Operating temperature max.:	85 °C	85 °C
Scaling:	0 ... 100 % Special calibration possible	0 ... 100 % Special calibration possible
Operating temperature:	85 °C	85 °C
Display angle:	90 °	240 °
Front dimensions:	Type A 48 48.0 x 48.0 mm Type A 72 72.0 x 72.0 mm Type A 96 96.0 x 96.0 mm Type A144 144.0 x 144.0 mm	Type A 48-K 48.0 x 48.0 mm Type A 72-K 72.0 x 72.0 mm Type A 96-K 96.0 x 96.0 mm Type A144-K 144.0 x 144.0 mm
Mounting dimensions:	Type A 48 42.0 x 42.0 mm Type A 72 66.0 x 66.0 mm Type A 96 90.0 x 90.0 mm Type A144 137.0 x 137.0 mm	Type A 48-K 42.0 x 42.0 mm Type A 72-K 66.0 x 66.0 mm Type A 96-K 90.0 x 90.0 mm Type A144-K 137.0 x 137.0 mm
Housing material:	Aluminium	Aluminium
Display cover:	Macrolon or glass	Macrolon or glass
Protection rating:	IP52	IP52
Terminal protection:	IP20	IP20
Connection diameter:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Functional description:	• Front mounting • Panel Meter • Special calibrations • Norm sizes acc. to DIN •Display angle 90°	• Front mounting • Panel Meter • Special calibrations • Norm sizes acc. to DIN •Display angle 240°

Front



Front

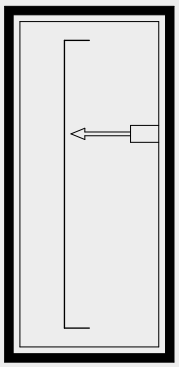


Type combination not possible

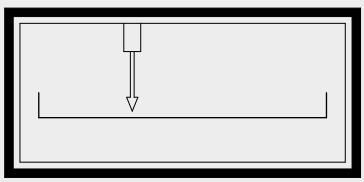
Control Units 1011
Analogous loop panel meter

Technical data	A .. - V Vertical scale	A .. - Q Horizontal scale
Current input:	0.0 ... 100.0 µA 0.0 ... 20.0 mA 4.0 ... 20.0 mA	0.0 ... 100.0 µA 0.0 ... 20.0 mA 4.0 ... 20.0 mA
Operating temperature max.:	85 °C	85 °C
Scaling:	0 ... 100 % Special calibration possible	0 ... 100 % Special calibration possible
Operating temperature:	85 °C	85 °C
Display angle:	Vertical	Horizontal
Front dimensions:	Type A 96/48-V 76.0 x 48.0 mm Type A144/36-V 144.0 x 36.0 mm Type A144/72-V 144.0 x 72.0 mm Type A192/96-V 192.0 x 96.0 mm	Type A 96/48-Q 76.0 x 48.0 mm Type A144/36-Q 144.0 x 36.0 mm Type A144/72-Q 144.0 x 72.0 mm Type A192/96-Q 192.0 x 96.0 mm
Mounting dimensions:	Type A 96/48-V 91.5 x 44.5 mm Type A144/36-V 138.0 x 32.0 mm Type A144/72-V 137.0 x 67.5 mm Type A192/96-V 185.5 x 92.0 mm	Type A 96/48-Q 91.5 x 44.5 mm Type A144/36-Q 138.0 x 32.0 mm Type A144/72-Q 137.5 x 67.5 mm Type A192/96-Q 185.5 x 92.0 mm
Housing material: **Display cover:** **Protection rating:** **Terminal protection:** **Connection diameter:**	Aluminium Macrolon or glass IP52 IP20 ø 1 x 2.5 mm²	Aluminium Macrolon or glass IP52 IP20 ø 1 x 2.5 mm²
Functional description:	• Front mounting • Panel Meter • Special calibrations • Norm sizes acc. to DIN • Display vertical	• Front mounting • Panel Meter • Special calibrations • Norm sizes acc. to DIN • Display horizontal

Front



Front

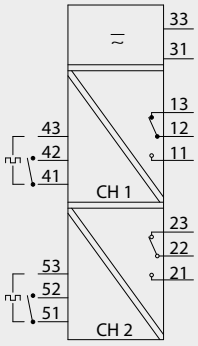


Type combination not possible

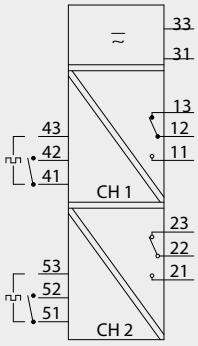
Control Units 1011
Contact protection relays 5202

Technical data	5202A	5202B Ex
Power Supply:	24 ... 230 V AC / DC universal	24 ... 230 V AC / DC universal
Current input:	Potential free contact	Potential free contact Potential free contact - Namur
Current output:	Change over potential free 250 V AC / 2 A AC / 100 VA by 24 V DC max. 1 A	Change over potential free 250 V AC / 2 A AC / 100 VA by 24 V DC max. 1 A
Operating temperature max.:	85 °C	85 °C
Error alarm:	Cable error alarm by LED	Cable error alarm by LED
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	215 gr	225 gr
Dimension:	109.0 x 23.5 x 130 mm	109.0 x 23.5 x 130 mm
Connection diameter max.:	ø 1 x 2.5 mm^2	ø 1 x 2.5 mm^2
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Intrinsically safe data:	- - - - - -	U_m <250 V U_o 10.6 V DC I_o 13.8 mA DC P_o <0.038 W L_o <160 mH C_o <1.9 µF
Approval:	- -	DEMKO 99 ATEX 127186 II (1)G (EExia) II C
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Measuring channels:	2 measuring channels	2 measuring channels
Functional description:	• Cable error alarm • Galvanic isolation • Universal Power Supply • 2 measuring channels • DIN mounting rail	• Cable error alarm • Galvanic isolation • Universal Power Supply • 2 measuring channels • DIN mounting rail • ATEX approved

Block diagram



Block diagram

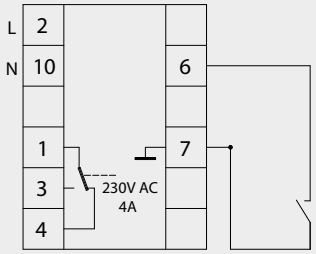


Type combination not possible

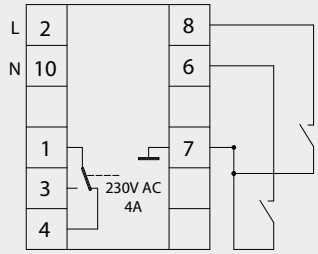
Control Units 1011
Contact protection relay NL 1755 / NL 2755

Technical data	NL 1755	NL 2755
Power Supply:	24 V AC / 115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	Change over Potential free 250 V AC / 5 A	Change over Potential free 250V AC / 5 A
Relay output:	Active by unwetted probe	Active by unwetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	100 kOhm	100 kOhm
Switching delay:	2.0 sec.	0.1 sec.
LED display:	For power supply (green) For output signal (red)	For power supply (green) For output signal (red)
Function:	1-point level controller e.g. alarm functions	2-point level controller e.g. pump control
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	150 gr	150 gr
Dimension:	45.0 x 36.0 x 75.0 mm	45.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective

Block diagram



Block diagram

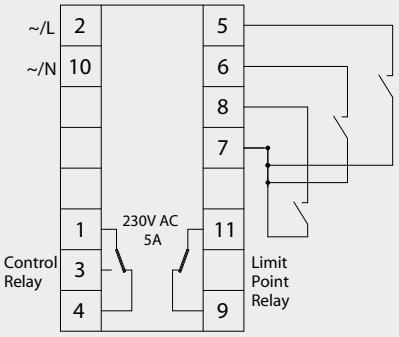


Type combination not possible

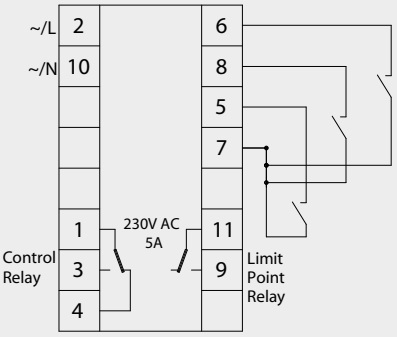
Control Units 1011
Contact protection relay NL 2860 / NL 2861

Technical data	NL 2860	NL 2861
Power Supply:	24 V AC /115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	2 change overs Potential free 250 V AC/5 A	2 change overs Potential free 250 V AC/5 A
Relay output:	Active by wetted probe	Active by wetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	100 kOhm	100 kOhm
Switching delay:	0.1 sec.	0.1 sec.
Resistance:	240 kOhm	-
LED display:	For power supply (green) For control relay (orange) For alarm relay (red)	For power supply (green) For control relay (orange) For alarm relay (red)
Function:	3-point level controller Level controller with high alarm e.g. pump control with high alarm	3-point level controller Level controller with low alarm e.g. pump control with low alarm
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	250 gr	250 gr
Dimension:	68.0 x 36.0 x 75.0 mm	68.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring

Block diagram



Block diagram

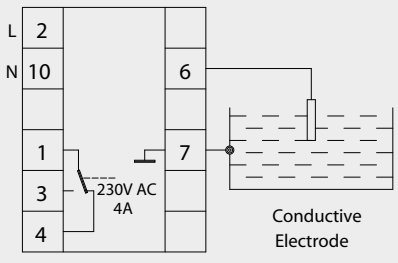


Type combination not possible

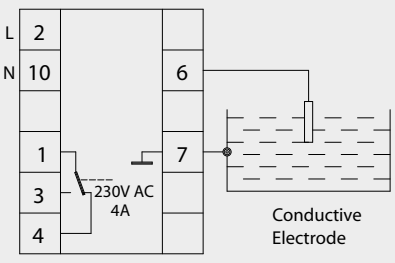
Control Units 1011
Conductive level controllers NL 1750 / NL 1751

Technical data	NL 1750	NL 1751
Power Supply:	24 V AC / 115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	Change over / potential free	Change over / potential free
	250 V AC / 5 A	250 V AC / 5 A
Relay output:	Active by unwetted probe	Active by wetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	20.0 ... 200.0 kOhm	20.0 ... 200.0 kOhm
Switching delay:	0.1 ... 10.0 sec.	0.1 ... 10.0 sec.
LED display:	For power supply (green)	For power supply (green)
	For output signal (red)	For output signal (red)
Function:	1-point level controller	1-point level controller
	e.g. alarm functions	e.g. alarm functions
Protection rating:	IP20 / IP50	IP20 / P50
Weight:	150 gr	150 gr
Dimension:	45.0 x 36.0 x 75.0 mm	45.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approvals:	Germanischer Lloyd (GL)	Germanischer Lloyd (GL)
	Bureau Veritas (BV)	Bureau Veritas (BV)
	Registro Italiano (RINA)	Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1	Emission EN 50 081-1
	EN 50 081-2	EN 50 081-2
	Immunitiy EN 50 082-1	Immunity EN 50 082-1
	EN 50 082-2	EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation

Block diagram



Block diagram

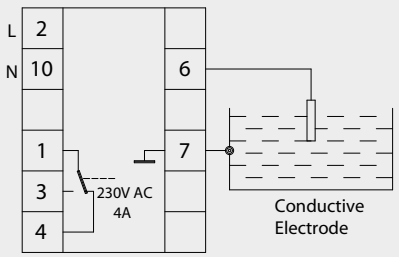


Type combination not possible

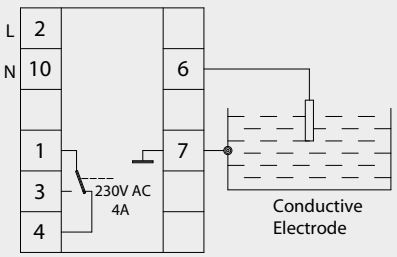
Control Units 1011
Conductive level controllers NL 1750E / NL 1751E

Technical data	NL 1750E	NL 1751E
Power Supply:	24 V AC / 115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	Change over / potential free	Change over / potential free
	250 V AC / 5 A	250 V AC / 5 A
Relay output:	Active by unwetted probe	Active by wetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	100.0 ... 1000.0 kOhm	100.0 ... 1000.0 kOhm
Switching delay:	0.1 ... 10.0 sec.	0.1 ... 10.0 sec.
LED display:	For power supply (green)	For power supply (green)
	For output signal (red)	For output signal (red)
Function:	1-point level controller	1-point level controller
	e.g. alarm functions	e.g. pump control
Protection rating:	IIP20 / IP50	IP20 / IP50
Weight:	150 gr	150 gr
Dimension:	45.0 x 36.0 x 75.0 mm	45.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL)	Germanischer Lloyd (GL)
	Bureau Veritas (BV)	Bureau Veritas (BV)
	Registro Italiano (RINA)	Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1	Emission EN 50 081-1
	EN 50 081-2	EN 50 081-2
	Immunity EN 50 082-1	Immunity EN 50 082-1
	EN 50 082-2	EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation

Block diagram



Block diagram

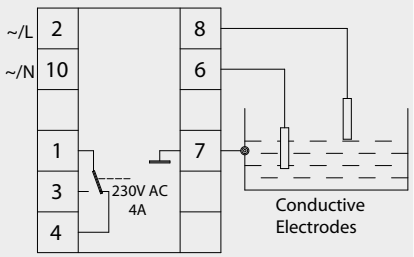


Type combination not possible

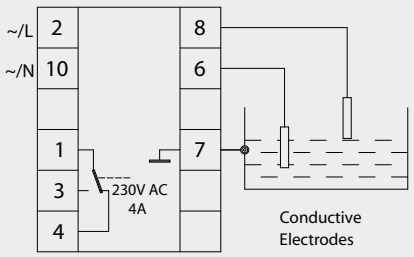
Control Units 1011
Conductive level controllers NL 2750 / NL 2750E

Technical data	NL 2750	NL 2750E
Power Supply:	24 V AC / 115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	Change over / potential free	Change over / potential free
	250 V AC / 5 A	250 V AC / 5 A
Relay output:	Active by unwetted probe	Active by unwetted probe
	Active by wetted probe	Active by wetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	100 kOhm	1000 kOhm
Switching delay:	0.1 ... 10.0 sec.	0.1 ... 10.0 sec.
LED display:	For power supply (green)	For power supply (green)
	For output signal (red)	For output signal (red)
Function:	2-point level controller	2-point level controller
	e.g. pump control	e.g. pump control
Protection rating:	IIP20 / IP50	IP20 / IP50
Weight:	150 gr	150 gr
Dimension:	45.0 x 36.0 x 75.0 mm	45.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL)	Germanischer Lloyd (GL)
	Bureau Veritas (BV)	Bureau Veritas (BV)
	Registro Italiano (RINA)	Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1	Emission EN 50 081-1
	EN 50 081-2	EN 50 081-2
	Immunity EN 50 082-1	Immunity EN 50 082-1
	EN 50 082-2	EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Cost-effective • Simple operation

Block diagram



Block diagram

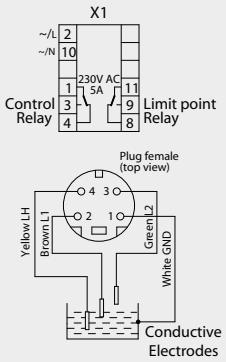


Type combination not possible

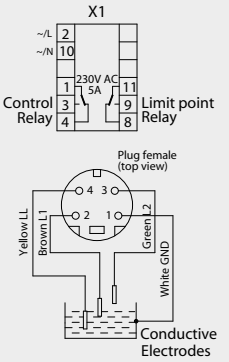
Control Units 1011
Conductive level controllers NL 2850 / NL 2851

Technical data	NL 2850	NL 2851
Power Supply:	24 V AC / 115 V AC / 230 V AC	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV	4 kV
Input:	Potential free contact	Potential free contact
Output:	2 change overs Potential free 250 V AC / 5A	2 change overs Potential free 250 V AC / 5A
Relay output:	Active by wetted probe	Active by wetted probe
Operating temperature max.:	70 °C	70 °C
Responsiveness:	100 kOhm/33.0 kOhm	100 kOhm/33.0 kOhm
Switching delay:	0.1 ... 10.0 sec.	0.1 ... 10.0 sec.
Resistance:	240 kOhm	-
LED display:	For power supply (green) For control relay (orange) For alarm relay (red)	For power supply (green) For control relay (orange) For alarm relay (red)
Function:	3-point level controller Level controller with high alarm e.g. pump control with high alarm	3-point level controller Level controller with low alarm e.g. pump control with low alarm
Protection rating:	IP20 / IP50	IP20 / IP50
Weight:	250 gr	250 gr
Dimension:	68.0 x 36.0 x 75.0 mm	68.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunitiy EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel	1 measuring channel
Mounting:	11-pole mounting socket needed (must be ordered seperately)	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring

Block diagram



Block diagram



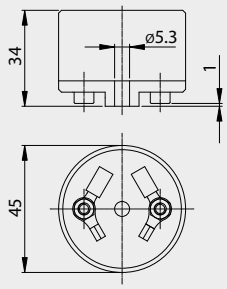
Type combination not possible

Control Units 1011
Leakage detector GL100 with sensor electrodes

Technical data	GL100
Power Supply:	24 V AC / 115 V AC / 230 V AC
Protection isolation:	4 kV
Input:	Floor electrodes Type FE (cascade electrode) Type AFE (end electrode)
Output:	1 change over (alarm) Potential free 250 V AC / 5A 1 normally open (output) 250 V AC
Operating temperature max.:	50 °C
Responsiveness:	100 kOhm / 33.0 kOhm
Switching delay:	3.0 sec.
Resistance:	240 kOhm
LED display:	For power supply (green) For wire break (orange) For alarm relay (red)
Function:	Leakage detector for e.g. ingress of water etc. - with test function button - external reset key
Protection rating:	IP20 / IP50
Weight:	250 gr
Dimension:	68.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Mounting:	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring • Simple operation

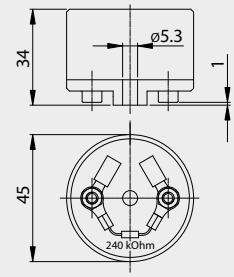
FE (cascade electrode)

Dimensions: ø 45.0 x 34.0 mm
Material: PVC / stainless steel
Electrode distance: 1.0 mm
Temperature: -40 °C ... +60 °C
Mounting bore: ø 5.0 mm

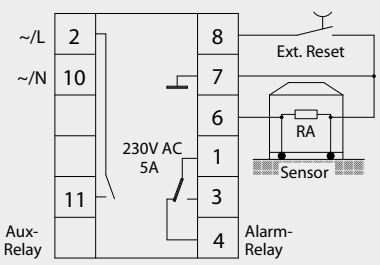


AFE (end electrode)

Dimensions: ø 45.0 x 34.0 mm
Material: PVC / stainless steel
Electrode distance: 1.0 mm
Temperature: -40 °C ... +60 °C
Mounting bore: ø 5.0 mm
Resistance: 240 kOhm



Block diagram



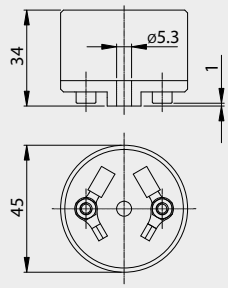
Type combination not possible

Control Units 1011
Leakage detector GL110 with sensor electrodes

Technical data	GL110
Power Supply:	24 V DC
Protection isolation:	4 kV
Input:	Floor electrodes Type FE (cascade electrode) Type AFE (end electrode)
Output:	1 change over (alarm) Potential free 250 V AC / 5 A 1 change over (output) Potential free 250 V AC / 5 A
Operating temperature max.:	50 °C
Responsiveness:	100kOhm/ 33.0kOhm
Switching delay:	3.0 sec.
Resistance:	240 kOhm
LED display:	For power supply (green) For wire break (orange) For alarm relay (red)
Function:	Leakage detector for e.g. ingress of water etc. - with test function button - external reset key
Protection rating:	IP20 / IP50
Weight:	250 gr
Dimension:	68.0 x 36.0 x 75.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Mounting:	11-pole mounting socket needed (must be ordered seperately)
Functional description:	• Simple installation • Functional display by LED • High switching capacity • Cable error monitoring

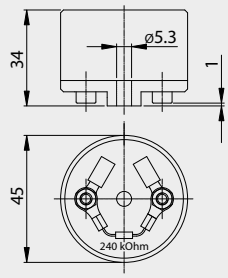
FE (cascade electrode)

Dimensions: ø 45.0 x 34.0 mm
Material: PVC / stainless steel
Electrode distance: 1.0 mm
Temperature: -40 °C ... +60 °C
Mounting bore: ø 5.0 mm

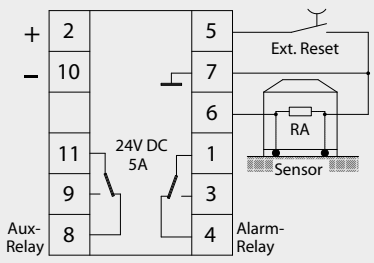


AFE (end electrode)

Dimensions: ø 45.0 x 34.0 mm
Material: PVC / stainless steel
Electrode distance: 1.0 mm
Temperature: -40 °C ... +60 °C
Mounting bore: ø 5.0 mm
Resistance: 240 kOhm



Block diagram

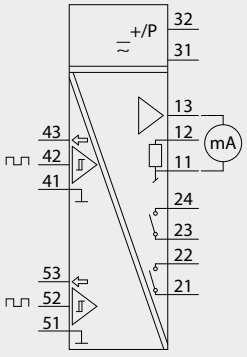


Type combination not possible

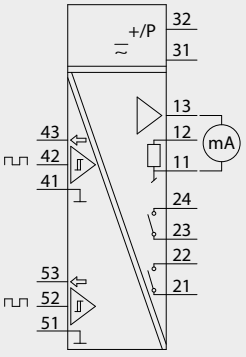
Control Units 1011
Speed and Frequency monitor 5223

Technical data	5223A	5223B Ex
Power Supply: **Input:** **Output:** **Relay:** **Operating temperature max.:**	24 ... 230 V AC / DC universal 0.1 ... 20'000Hz 0.0 (4.0) ... 20.0 mA 0 (2) ... 10 V DC 2 pcs. (250 V / 500 VA / 1 A) 85 °C	24 ... 230 V AC / DC universal 0.1 ... 20'000Hz 0.0 (4.0) ... 20.0 mA 0 (2) ... 10 V DC 2 pcs. (250 V / 500 VA / 1 A) 85 °C
Protection rating: **Weight:** **Dimension:** **Connection diameter max.:** **Atmospheric humidity max.:**	IP20 / IP50 240 gr 109.0 x 23.5 x 130 mm ø 1 x 2.5 mm^2 < 90 % RH (not condensed)	IP20 / IP50 240 gr 109.0 x 23.5 x 130 mm ø 1 x 2.5 mm^2 < 90 % RH (not condensed)
Intrinsically safe data:	- - - - -	UM 250 VRMS / DC U max. 13.5 V DC I max. 35.0 mA Lext ≤30 mH Ci ≤0.08 µF
Approval:	- -	DEMKO 97D. 121583 EExia IIC
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2 ATEX EN 50 014 EN 50 020
Programming software:	5905 Loop Link	5905 Loop Link
Functional description:	• Programmable by PC • Multifunctions • High measuring accuracy • Universal Power Supply • 2 relays and output • DIN mounting rail	• Programmable by PC • Multifunctions • High measuring accuracy • Universal Power Supply • 2 relays and output • DIN mounting rail • ATEX approved

Block diagram



Block diagram

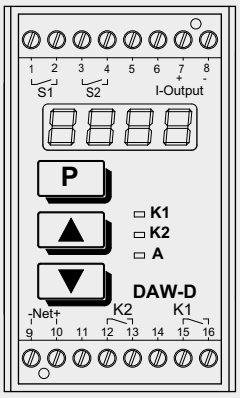


Type combination not possible

Control Units 1011
Speed and Frequency monitor DAW-D

Technical data	DAW-D
Power Supply:	18 ... 36 V DC 24 V / 115 V / 230 V AC
Input:	Potential free contact 30 ... 9999 Hz/min.
Output:	0.0 (4.0) ... 20.0 mA 0 (2) ... 10 V DC
Operating temperature max.:	-20 °C ... +70 °C
Relay:	2 pcs. max. 500 VA / 30 V Normally open or normally closed
Display:	4 digit 7-Segment LED display red Size 7.6 mm Free scaling
Power consumption:	4.0 VA
Protection rating:	IP20 / IP40
Weight:	325 gr
Dimension:	75.0 x 45.0 x 115.0 mm
Connection diameter max.:	ø 1 x 2.5 mm²
Atmospheric humidity max.:	< 95 % RH (not condensed)
Approval:	Germanischer Lloyd (GL) Bureau Veritas (BV) Registro Italiano (RINA)
EMC Directive 83/336/EC:	Emission EN 50 081-1 EN 50 081-2 Immunity EN 50 082-1 EN 50 082-2
Measuring channels:	1 measuring channel
Programming software:	By programming buttons
Functional description:	• Programmable • Multifunctions • High measuring accuracy • Universal Power Supply • 2 relay outputs • Current output • Differential measurement possible

Block diagram



Type combination not possible

Control Units 1011
Type key

Code	Type	Transmitters 2-wire	ATEX
	ZMU	XT-42-SI	
	ZMUP	956045 (no data sheet)	
	ZMUL	2251	
	TP	TP 5333B	
	TPA	TP 5333A	
	TP43	TP 5343B	
	TP43A	TP 5343A	
	TP50	TP 5350B	
	TP50A	TP 5350A	
	TD	TD 5335B	
	TDA	TD5335A	
	...	Various	

Code	Type	Power supplies	ATEX
	5104B	5104B	
	5420B	5420B	
	...	Various	

Code	Type	Transmitters	ATEX
	5111	5111	
	5111B	5111B	
	5114	5114	
	5114B	5114B	
	...	Various	

Code	Type	Digital - Transmitters	ATEX
	MUL - D2	MUL - D2	
	MUL - D4	MUL - D4	
	MUL - E2	MUL - E2	
	MUL - E4	MUL - E4	
	...	Various	

Code	Type	Digital - Indicators	ATEX
	5515	5515	
	5714	5714	
	...	Various	

Code	Type	Digital - Set point relays	ATEX
	2231	2231	
	2238	2238	
	...	Various	

Code	Type	Digital - Loop - Indicators	ATEX
	5531	5531	
	5531B	5531B	
	DALA	DALA	
	DALB	DALB	
	...	Various	

Control Units 1011
Type key

Code	Type	Analogous - Loop - Indicators	ATEX
	A48	A48	
	A72	A72	
	A96	A96	
	A144	A144	
	A48-K	A48-K	
	A72-K	A72-K	
	A96-K	A96-K	
	A144-K	A144-K	
	496/48	496/48	
	A144/36	A144/36	
	A144/72	A144/72	
	A192/96	A192/96	
	...	Various	

Code	Type	Contact protection relays	ATEX
	5202	5202	
	5202B	5202B	
	1755	1755	
	2755	2755	
	2860	2860	
	2861	2861	
	...	Various	

Code	Type	Conductive level controllers	ATEX
	1750	1750	
	1751	1751	
	2750	2750	
	1750 (E)	1750 (E)	
	1751 (E)	1751 (E)	
	2750 (E)	2750 (E)	
	2850	2850	
	2851	2651	
	...	Various	

Code	Type	Leakage detectors	ATEX
	GL 100	GL 100	
	GL 110	GL 110	
	...	Various	

Code	Type	Speed monitors
	DAW - D	DAW - D
	5223A	5223A
	5223B	5223B
	...	Various

上海欧逸机电工程设备有限公司
地址：上海市沪太路3777号5305室 邮编：200444
电话：021-51875816，传真：021-51875821
Http：//www.shhfl.com; E-mail：sales@shhfl.com