

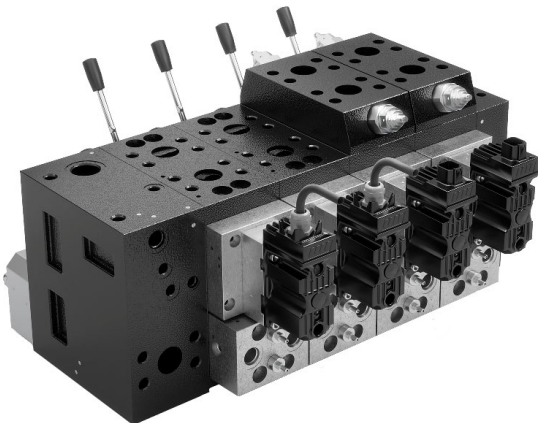
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PDV315 Proportional valve

General description

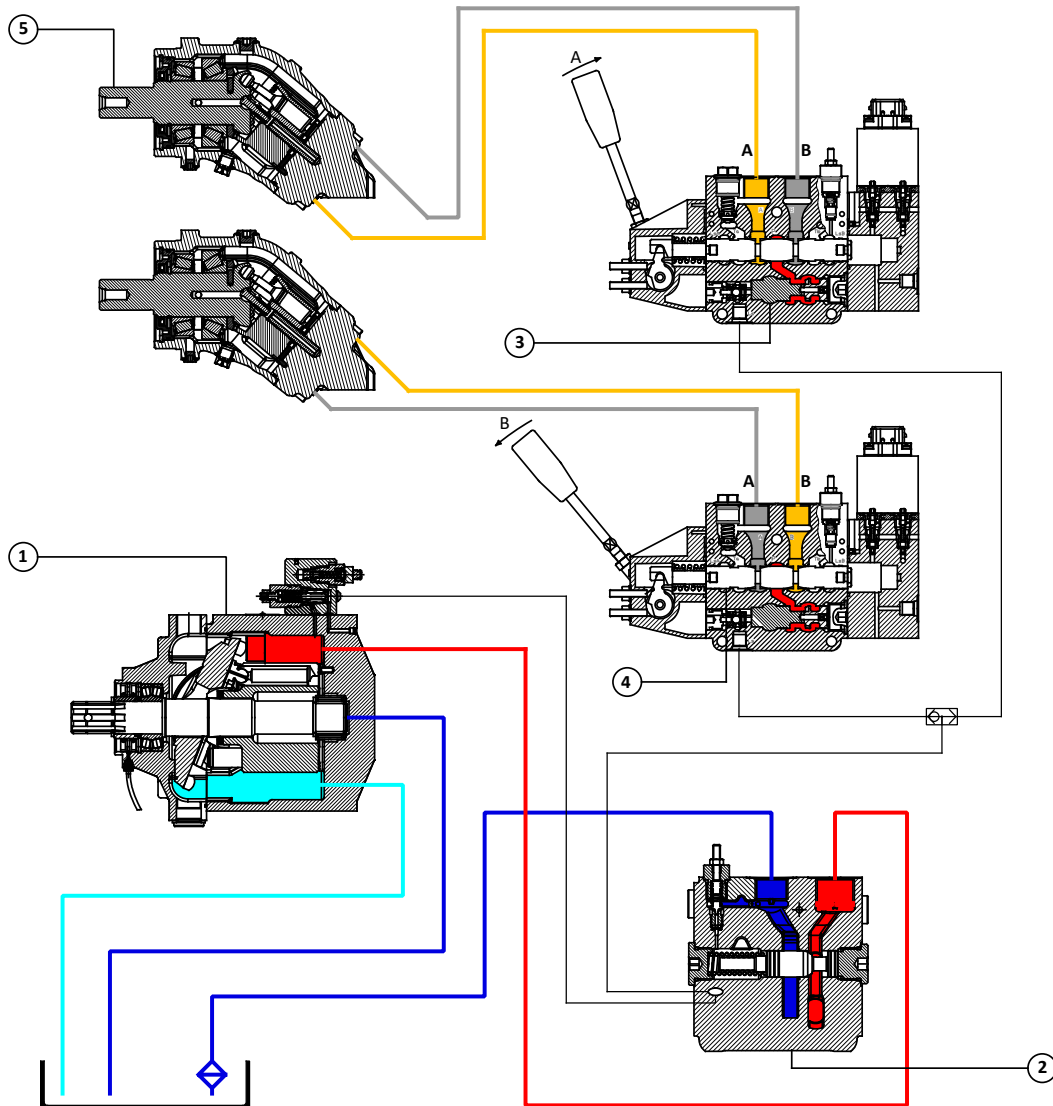
PDV315 is a hydraulic proportional directional valve, designed to offer a wide range of control options and flexibility.

The **PDV315** modular system enables bankable groups to perform many individual tasks, to meet and exceed the changing control needs of the off-highway machines of today, and well into the future to maximize the efficiency, controllability and reliability of vehicles.



PDV315 main features:

- Load sensing up-stream pressure compensation
- High flow/low pressure drop capability
- Integrated pump unloading system
- Integrated cut-off pump system
- Open/closed centre shifting system
- Precise metering capabilities
- LSA-LSB electrical unloading
- LSA-LSB electrical working pressure remote control
- Constant flow regardless of pressure
- Working sections symmetrical flow
- Optional priority inlet for steering or different priority functions
- Optional dual hydraulic pilot and electrohydraulic control
- ATEX and IECEx configuration
- CAN-Bus communication
- EMC immunity ensures high safety with regard to electro-magnetic compatibility



High pressure port of **PPV** piston pump ① supply the closed centre inlet section of **PDV315** proportional valve ② which in turn feeds the down-stream working sections.

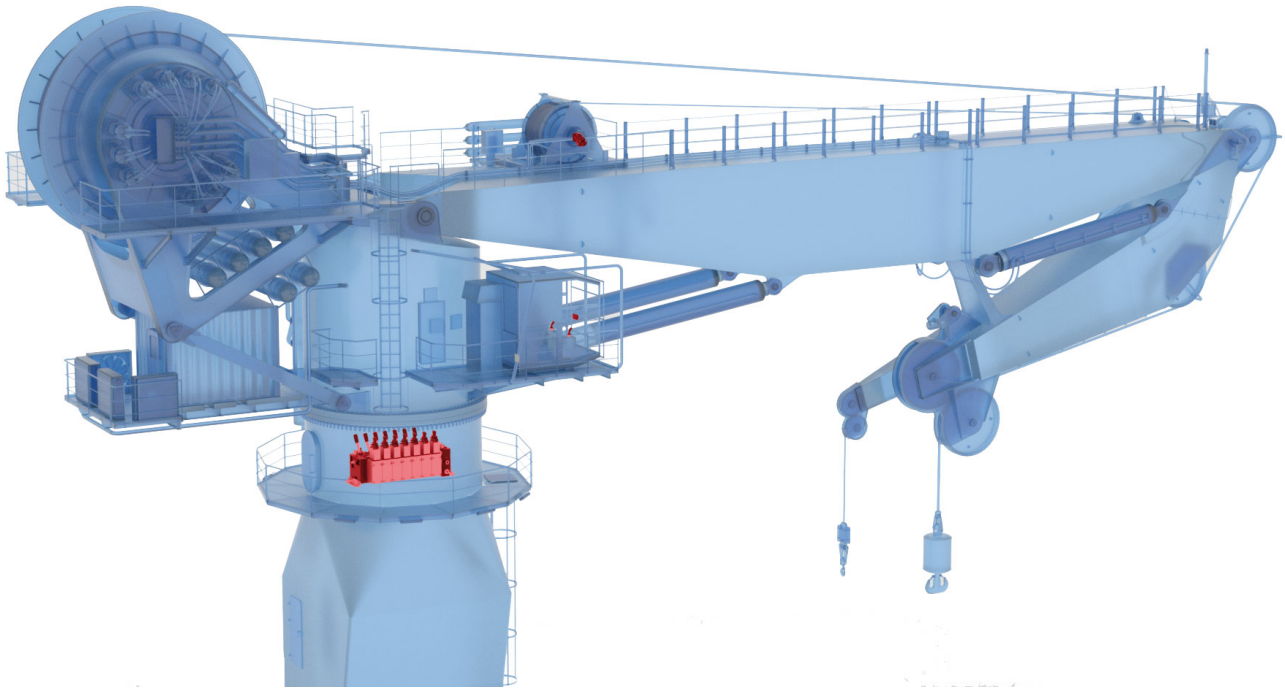
The **PDS** spool neutral position ④ unload the LS pump signal to tank, so that the swashplate angle is towards the minimum displacement and pressure in stand-by setting.

The spool position determines the flow demands (speed rotation) of the two **HPM** motors ⑤.

The PDS main spool compares the pressure drop before and after the spool notches (differential pressure Δp), and therefore, the pump flow remain constant.

If the differential pressure increase, the pump swashplate is swivelled back towards the minimum displacement, and if the differential pressure decrease, the swashplate angle increase towards the max flow displacement until balance is restored within the valve.

Actuators load determines the working pressure, and the built-in pressure compensator ③ enable simultaneously function regardless of different working pressure.



1. PPV90 load sensing piston pump
2. Pump splitter gear box
3. I/O controller PHSI7101008
4. PDV74/6 closed centre inlet
5. Electronic double axis joystick PEJD
6. Graphic display PDHI703000
7. PPM40 piston motors

The hydraulic features listed in this chart, are typical measured data obtained by using mineral based hydraulic oil according to DIN 51524 with a viscosity of 21 mm²/sec [102 SUS] and a temperature of 50 °C [122 °F]

Oil flow rate	PDI inlet section, P port		600 l/min (max)	158 US gal/min
	PDIM - Mid inlet section, P port		600 l/min	158 US gal/min
	A, B port with pressure compensator		500 l/min	132 US gal/min
Max. pressure	P port	Pressure relief valve setting	400 bar	5800 psi
		Working pressure	370 bar	5370 psi
	A, B port		370 bar	5370 psi
	Ty port, directly to tank			
	T port	Static	25 bar	363 psi
Dynamic		35 bar	508 psi	
Max. pilot pressure oil supply			30 bar	435 psi
Oil temperature	Recommended		30 ÷ 65 °C	86 °F ÷ 149 °F
	Min		-30 °C	-22 °F
	Max		90 °C	194 °F
Ambient temperature			-30 ÷ 60 °C	-22 ÷ 140 °F
Oil viscosity	Operating range		12 ÷ 75 mm²/sec	65 ÷ 347 SUS
	Min		4 mm²/sec	39 SUS
	Max		460 mm²/sec	2128 SUS
Spool stroke	Standard		9 mm	0,35 in
	Flow control proportional range		7,5 mm	0,3 in
	Pressure control propotional range		7,5 mm	0,3 in
Daed band spool	Flow control		1,5 mm	0,06 in
	Pressure control		1,5 mm	0,06 in
Max internal leakage A/B port at 100 bar [1450 psi] and 21 mm ² /sec		A/B T without shock valves	100 cm³/min	6,1 in³/min
		A/B T with shock valves	115 cm³/min	7 in³/min
Filtration	Max. contamination: class 9 according to NAS 1638 (20/18/15 according to ISO 4406)			

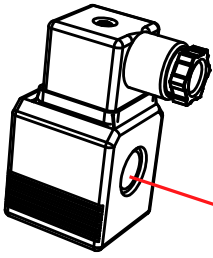
PDH module - hydraulic control

Pilot pressure	Spool start movement	4 bar / 58 psi
	Spool end stroke	15 bar / 218 psi
Max. pilot pressure		30 bar / 436 psi

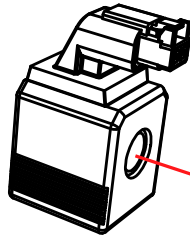
PDV74 internal filters, mesh 100 µm

Mineral oil hydraulic fluid: according to DIN 51524 and 51525 or ISO 6743/4 PDV74 can also be used with phosphate esters (HFDR), water-glycol (HFC) or water oil (HFB) mixes, subject to our Technical Dept. approval

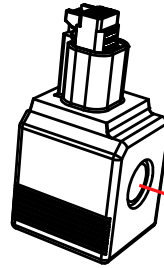
DIN 43650A



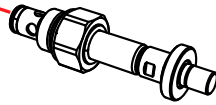
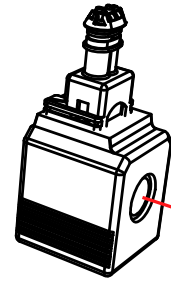
Deutsch Parallel



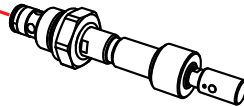
Deutsch Perpendicular



Junior Power Timer



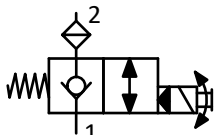
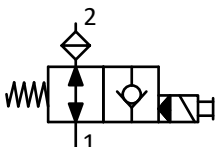
Normally closed
 Emergency: screw



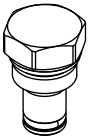

Normally open
 Emergency: push and twist

Code numbers

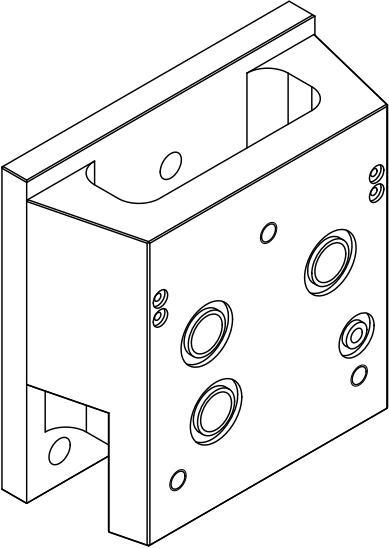
PIU solenoid LS unloading valve codes

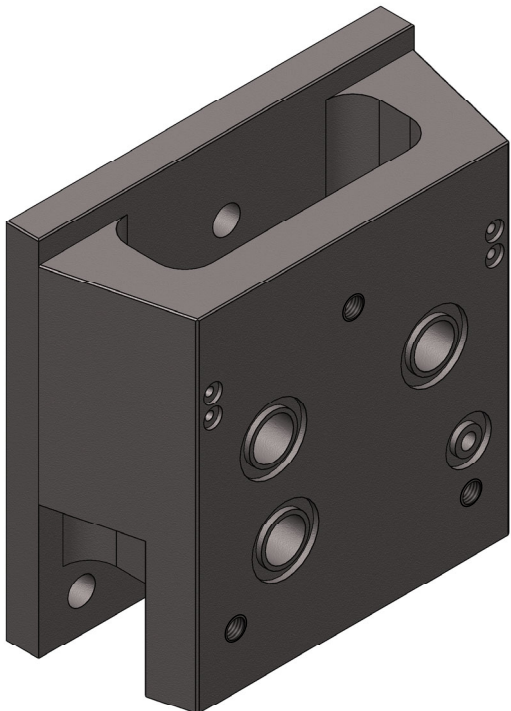
Code numbers			
PIU solenoid LS unloading valve codes			
Cartridge valve type	Connector type	12 Vdc	24 Vdc
Normally closed Emergency: screw 	DIN 43650A	PIU0C023200	PIU0C013200
	Deutsch Parallel	PIU0C021200	PIU0C011200
	Deutsch Perpendicular	PIU0C022200	PIU0C012200
	Junior Power Timer	PIU0C024200	PIU0C014200
Normally open Emergency: push and twist 	DIN 43650A	PIU0A023100	PIU0A013100
	Deutsch Parallel	PIU0A021100	PIU0A011100
	Deutsch Perpendicular	PIU0A022100	PIU0A012100
	Junior Power Timer	PIU0A024100	PIU0A014100

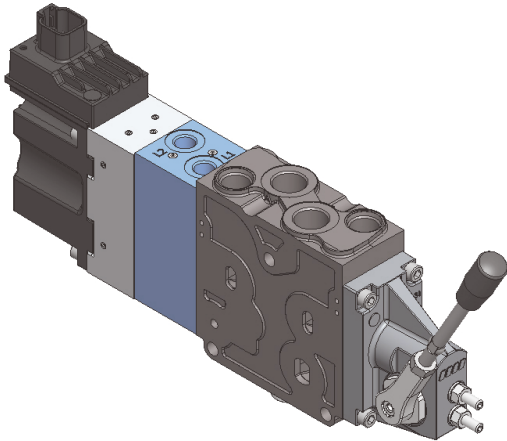
Plug for LS unloading cavity

Plug cavity	Hydraulic scheme	Code numbers
		<p>PIP10000000</p>

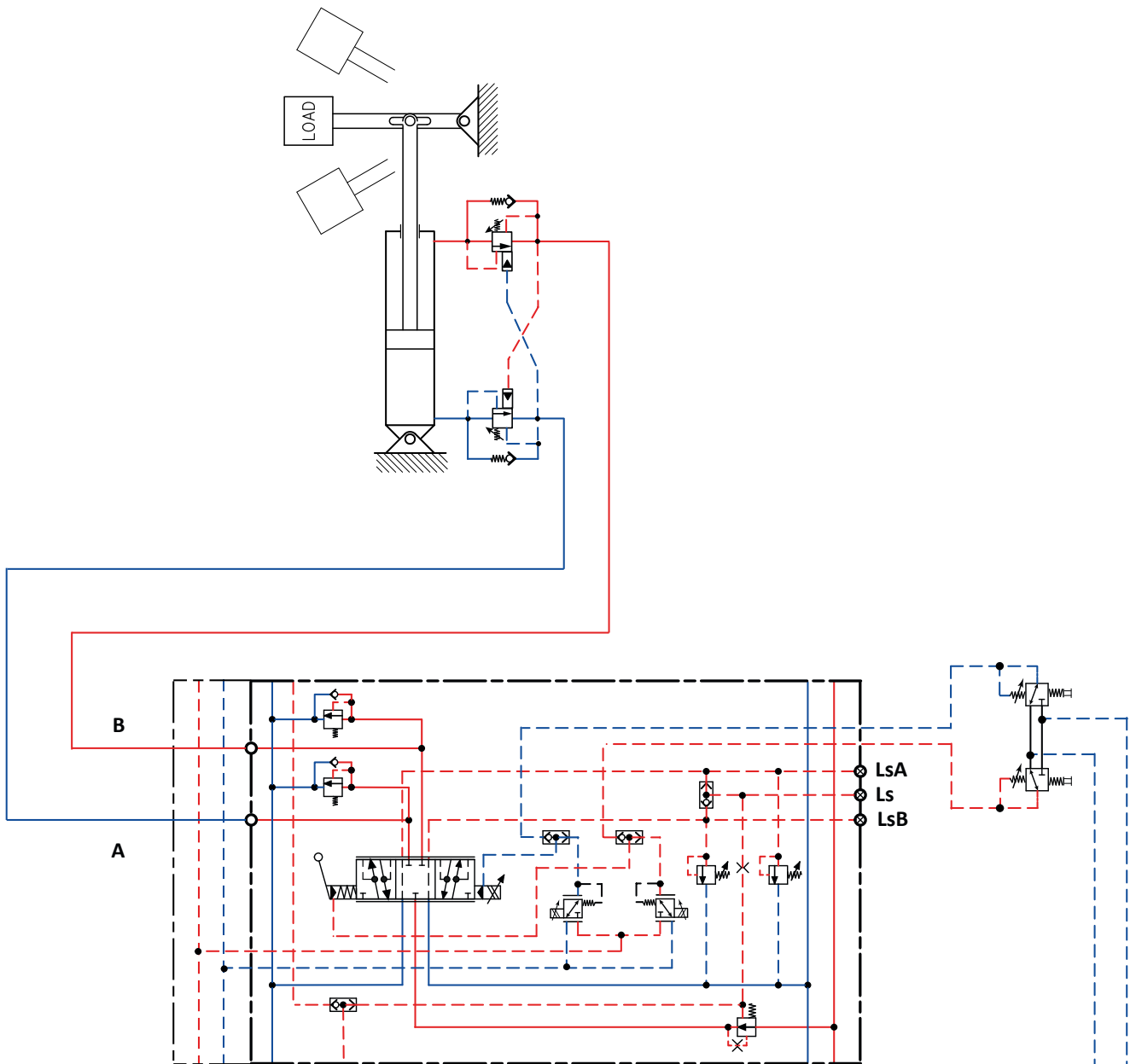
Max. operating pressure	350 bar	
Max. internal leakage	350 bar, 46 mm²/sec 1 cm³/min	
max pressure drop	< 1,5 bar	
Expected life - 350 bar, 0,5 Hz (1s on / 1s off)	10.000.000 cycles	
Response time for LS pressure relief	< 280ms	
Oil temperature	Recommended	30 ÷ 60 °C
	Min.	-30 °C
	Max.	90 °C
Ambient temperature	-30 ÷ 60 °C	
Max. coil surface temperature	160 °C	
Oil viscosity	Operating range	10 ÷ 90 cSt
	Min.	4 mm²/sec
	Max.	460 mm²/sec
Degree of enclosure	Connector DIN 43650	IP65
	Connector Deutsch DT04-2p	IP67
		IP69K integrated to coil
Rated voltage	12 Vdc	24 Vdc
Supply voltage	10,6 ÷ 14,6 Vdc	20,4 ÷ 28,6 Vdc
Working temperature	-30 ÷ 80 °C	
Maximum coil surface temperature	175 °C	
Heat insulation	Class H (180 °C)	
Resistance	7,5 Ω	29,9 Ω
Current consumption	1,6 A	0,8 A
Power consumption	19 W	

	Description	
		PDEI4000000



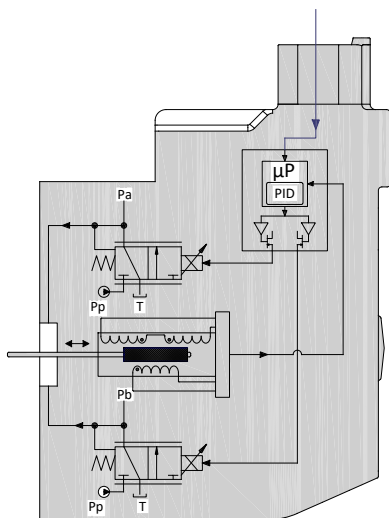
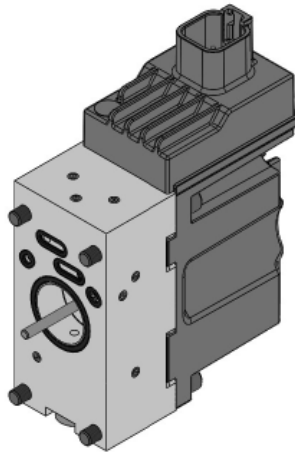


PDZ is a small HIC body that can be matched with any kind of PDV74 working section PDW, to get hydraulic and electro-hydraulic spool control



PDZ overall dimensions	For open loop spool control	For closed loop spool control
	<p>PDZ70000000 1/4" BSPP - 12 mm deep</p>	<p>PDZ 1/4" BSPP - 12 mm deep</p>
	<p>PDZ [7/16 in-20 UNF-2B - 0,47 in deep]</p>	<p>PDZ [7/16 in-20 UNF-2B - 0,47 in deep]</p>

PDV315 - PEAC131 Electro-hydraulic proportional actuation
Closed loop spool control, high performance resolution
Input signal control 0,5 Udc



PEAC131 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics. The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC131 modules comes with integrated fault monitoring system, available in two version:

- Active version
- Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up). The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

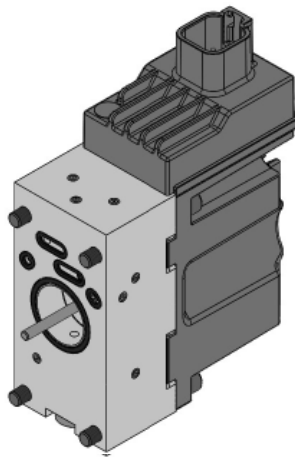
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

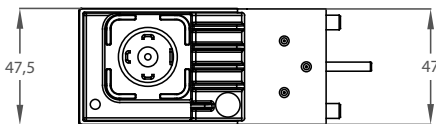
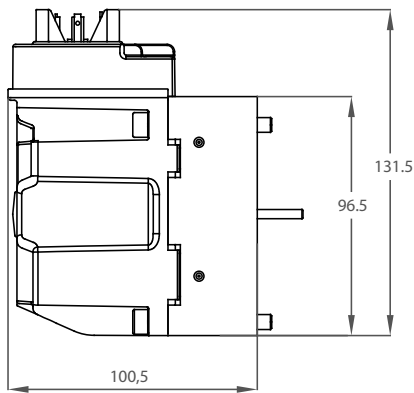
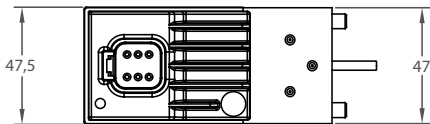
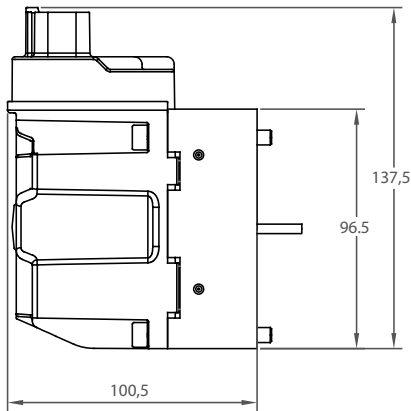
The use of PEAC131 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC131 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.


PEAC131 is defined by:

- Inductive transducer with resolution < 12 µm
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power

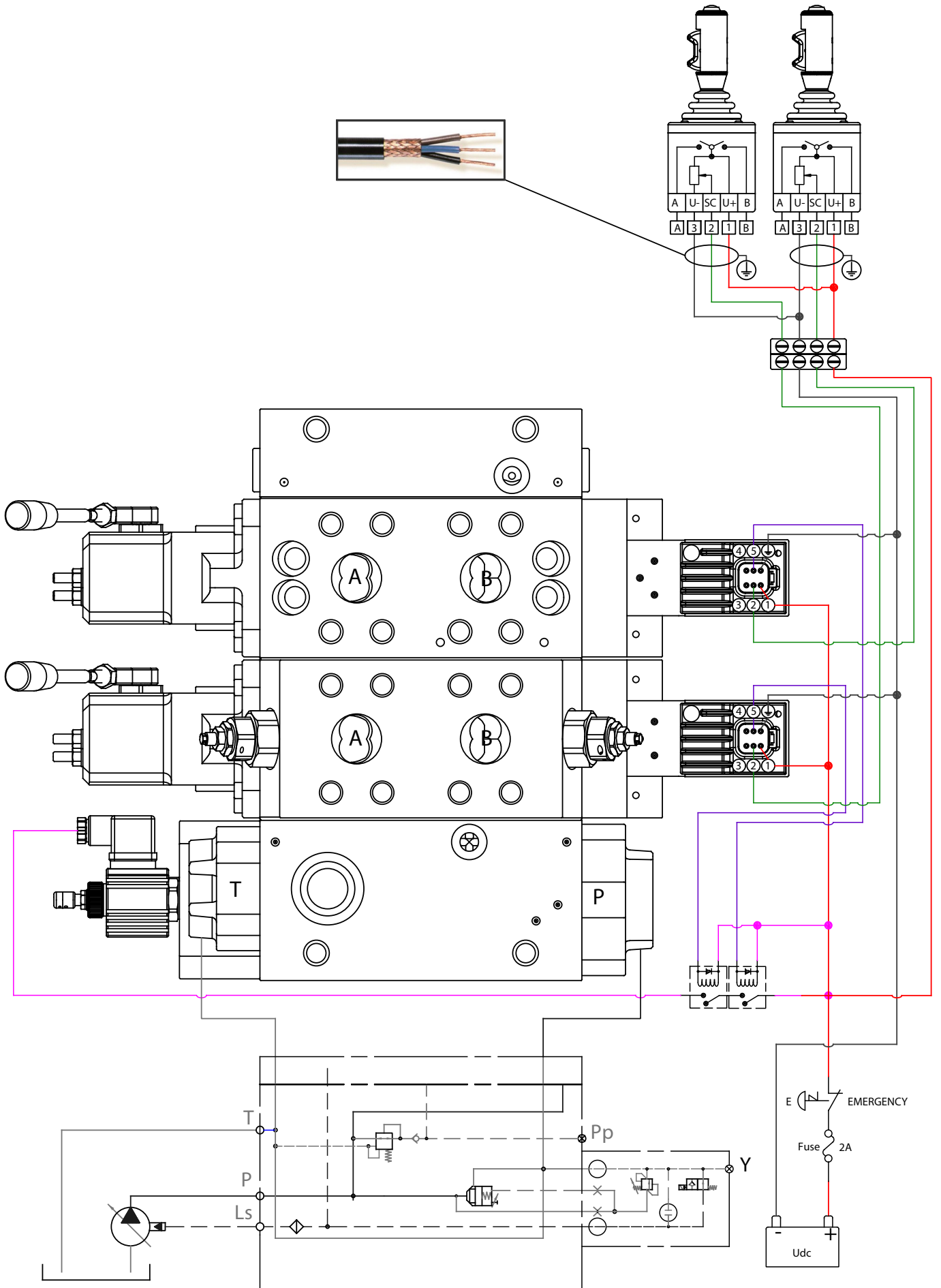
PEAC131 Technical data		
Rated supply voltage		10 ÷ 30 Vdc
Max ripple		5%
Signal control		0,5 Udc
Range control signal		0,25 Udc to 0,75 Udc
Neutral spool position		0,5 Udc
Max threshold signal, A port		1 V
Max threshold signal, B port		1 V
Max current signal @ rated voltage		48 mA
Input capacitor		100 nF
Signal control impedance		25 kΩ
Power consumption		8,7 W
Heat insulation		Class H (180°C)
Duty cycle		ED 100%
Max current consumption		650 mA
Current consumption in neutral position		80 mA
Coil impedance @ 20°C		8,9 Ω
Dither frequency		50-200 Hz
Recommended frequency		100 Hz
Enclouser degree	(Electrical wiring excepted)	IP 66 - IP 67 - IP 69K
Weight cast iron body		1,8 kg
Weight aluminium body		1,3 kg
Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S		
Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
Max current output signal for spool direction movment		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

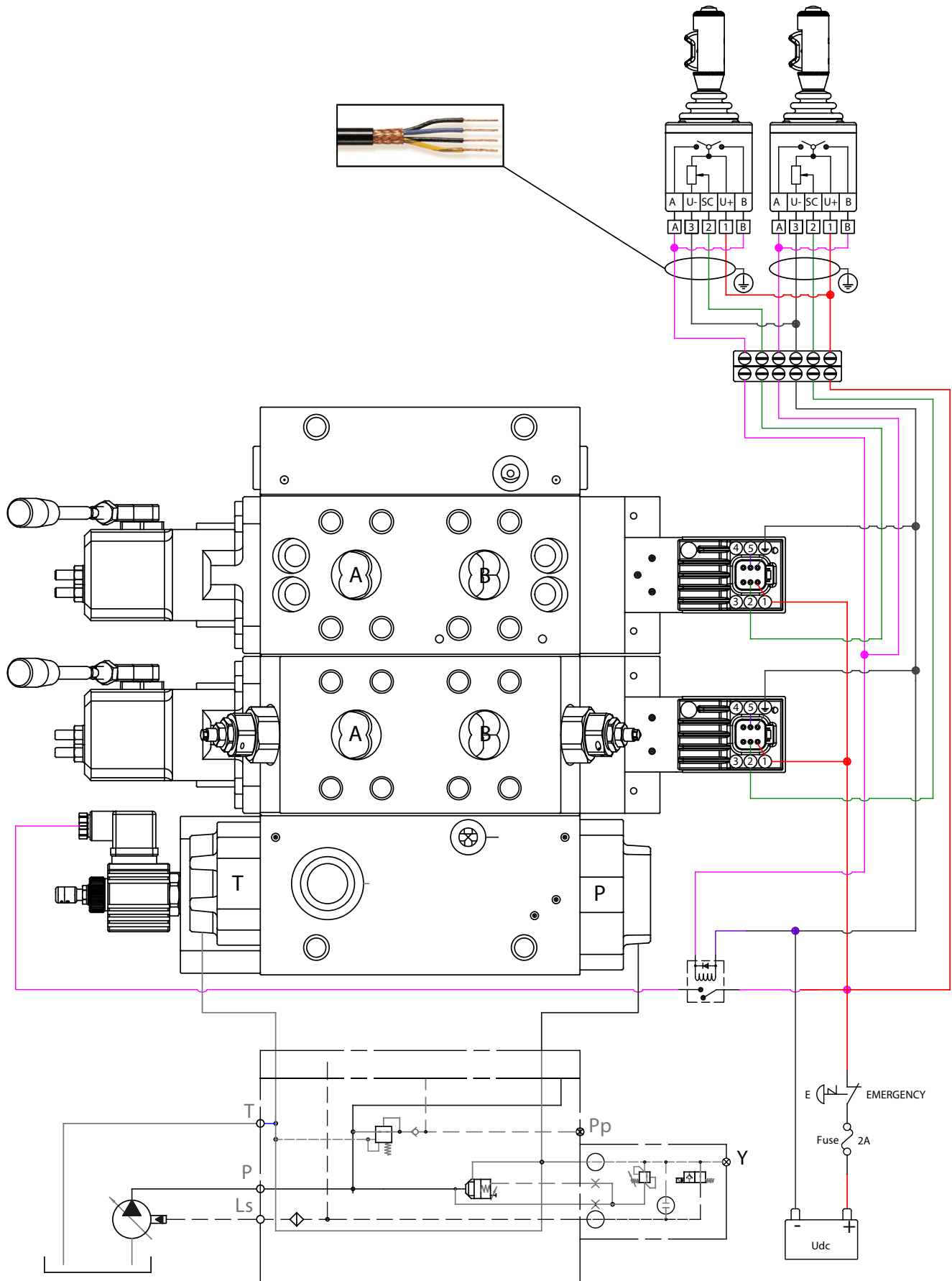


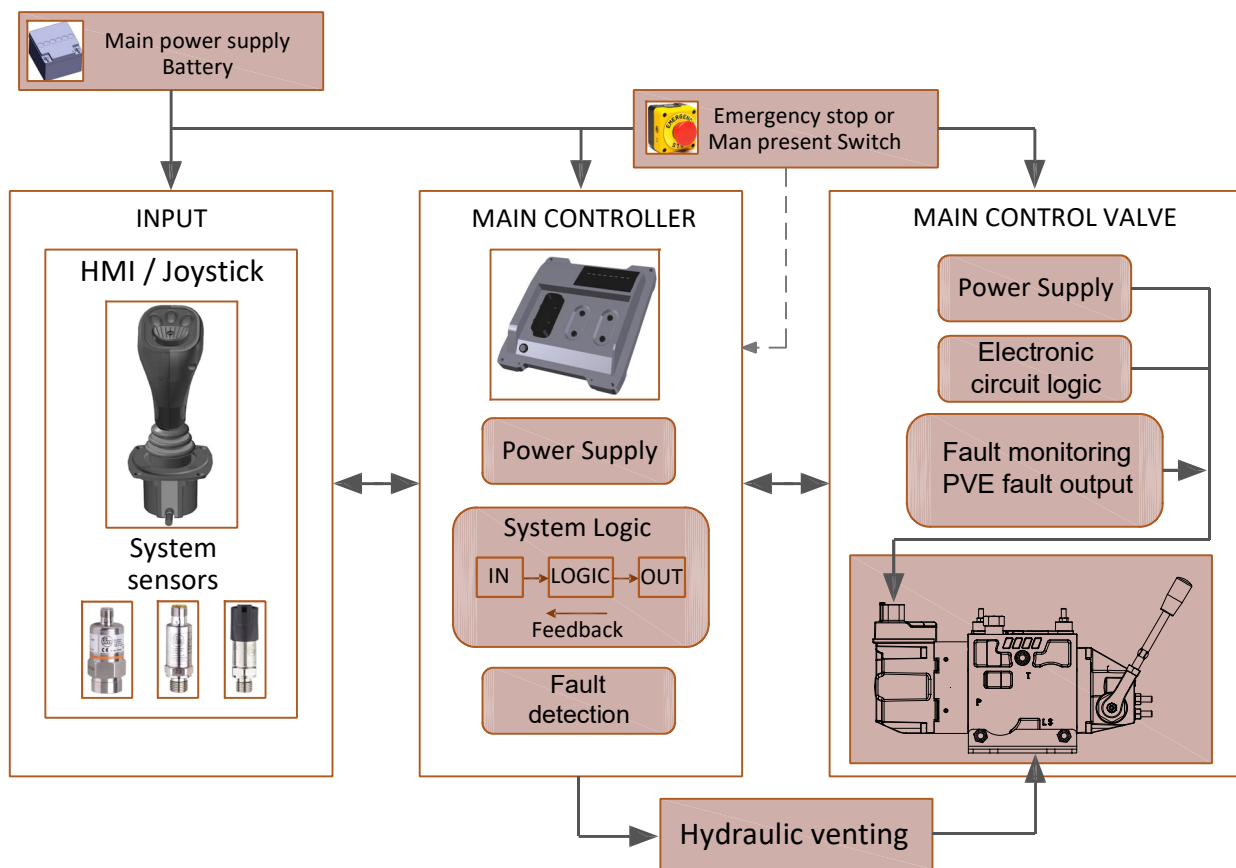
Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	CAN-high	A port-spool movement signal
	4	CAN-low	B port-spool movement signal
	5	Fault monitoring signal	
	6	Ground	

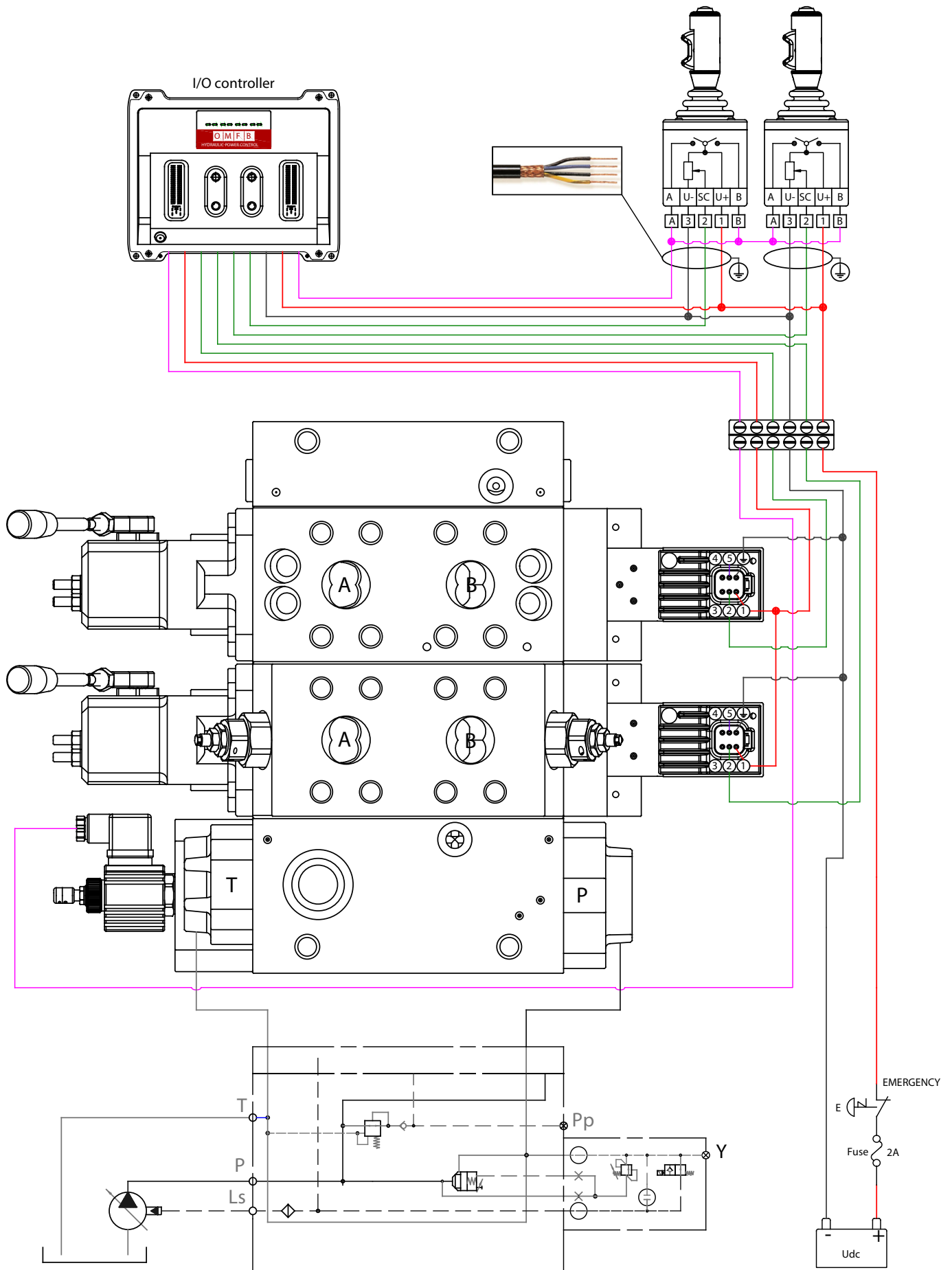
Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	Fault monitoring signal	
	4	Ground	

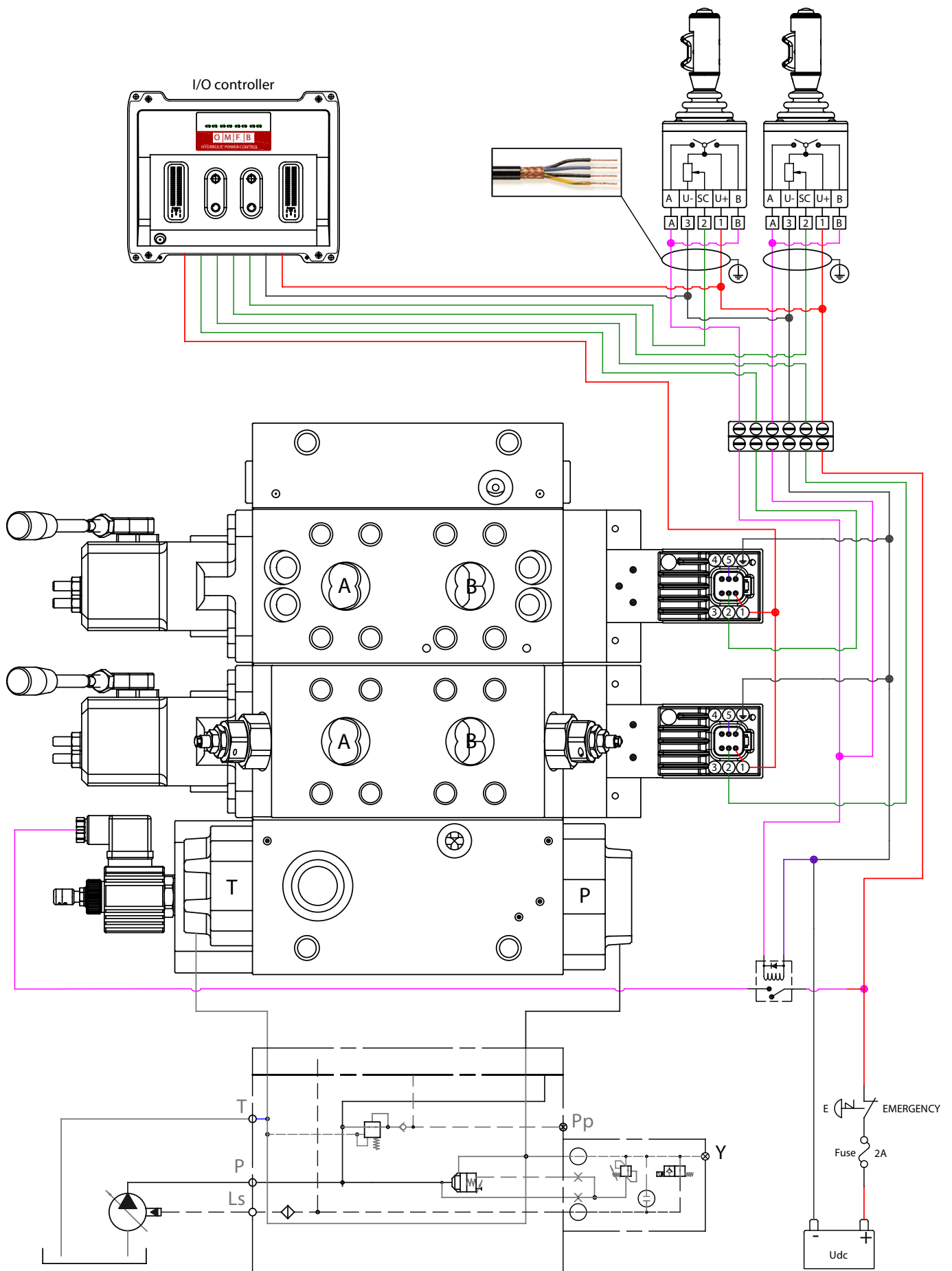
Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0181000	PEAC1181000	PEAC0171000	PEAC1171000
DIN 43650	PEAC0181200	PEAC1181200	PEAC0171200	PEAC1171200



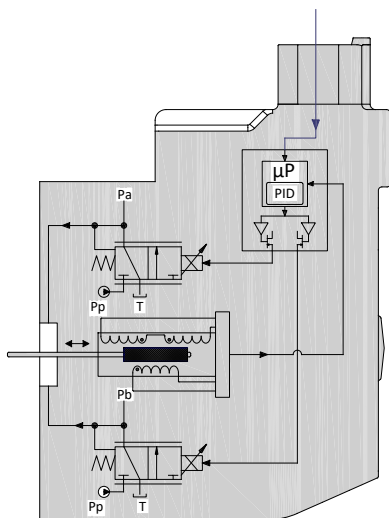
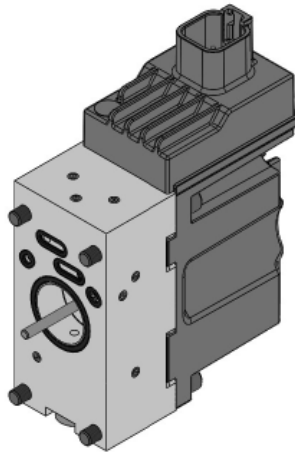








PDV315 - PEAC132 Electro-hydraulic proportional actuation
Closed loop spool control, high performance resolution
Input signal control 0 ÷ 10 V



PEAC132 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics. The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC132 modules comes with integrated fault monitoring system, available in two version:

- Active version
- Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up). The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

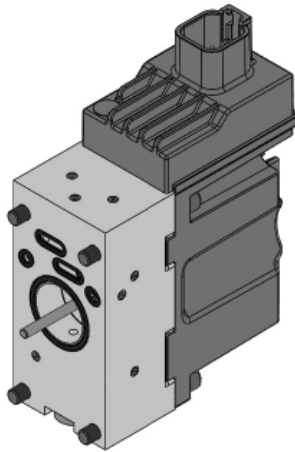
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

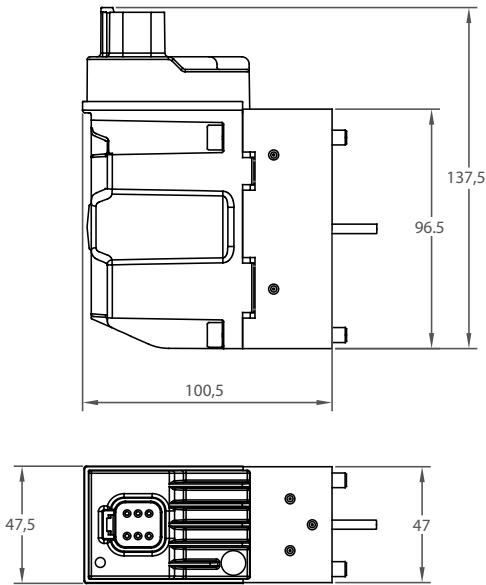
The use of PEAC132 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC132 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.

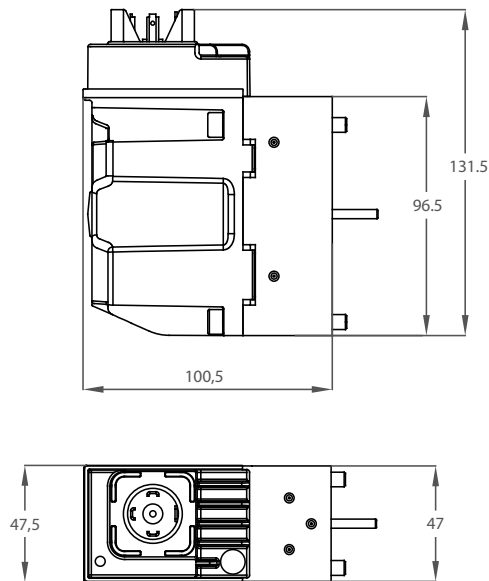

PEAC132 is defined by:

- Inductive transducer with resolution < 12 µm
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance to
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power

PEAC132 Technical data		
Rated supply voltage		10-30 Vdc
Max ripple		5%
Signal control		0-10 V
Range control signal		2,5 V to 7,5 V
Neutral spool position		5 V
Max threshold signal, A port		1 V
Max threshold signal, B port		1 V
Max current signal @ rated voltage		48 mA
Input capacitor		100 nF
Signal control impedance		25 kΩ
Power consumption		8,7 W
Heat insulation		Class H (180°C)
Duty cycle		ED 100%
Max current consumption		650 mA
Current consumption in neutral position		80 mA
Coil impedance @ 20°C		8,9 Ω
Dither frequency		50-200 Hz
Recommended frequency		100 Hz
Enclouser degree	(Electrical wiring excepted)	IP 66 - IP 67 - IP 69K
Weight cast iron body		1,8 kg
Weight aluminium body		1,3 kg
Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S		
Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
Max current output signal for spool direction movement		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

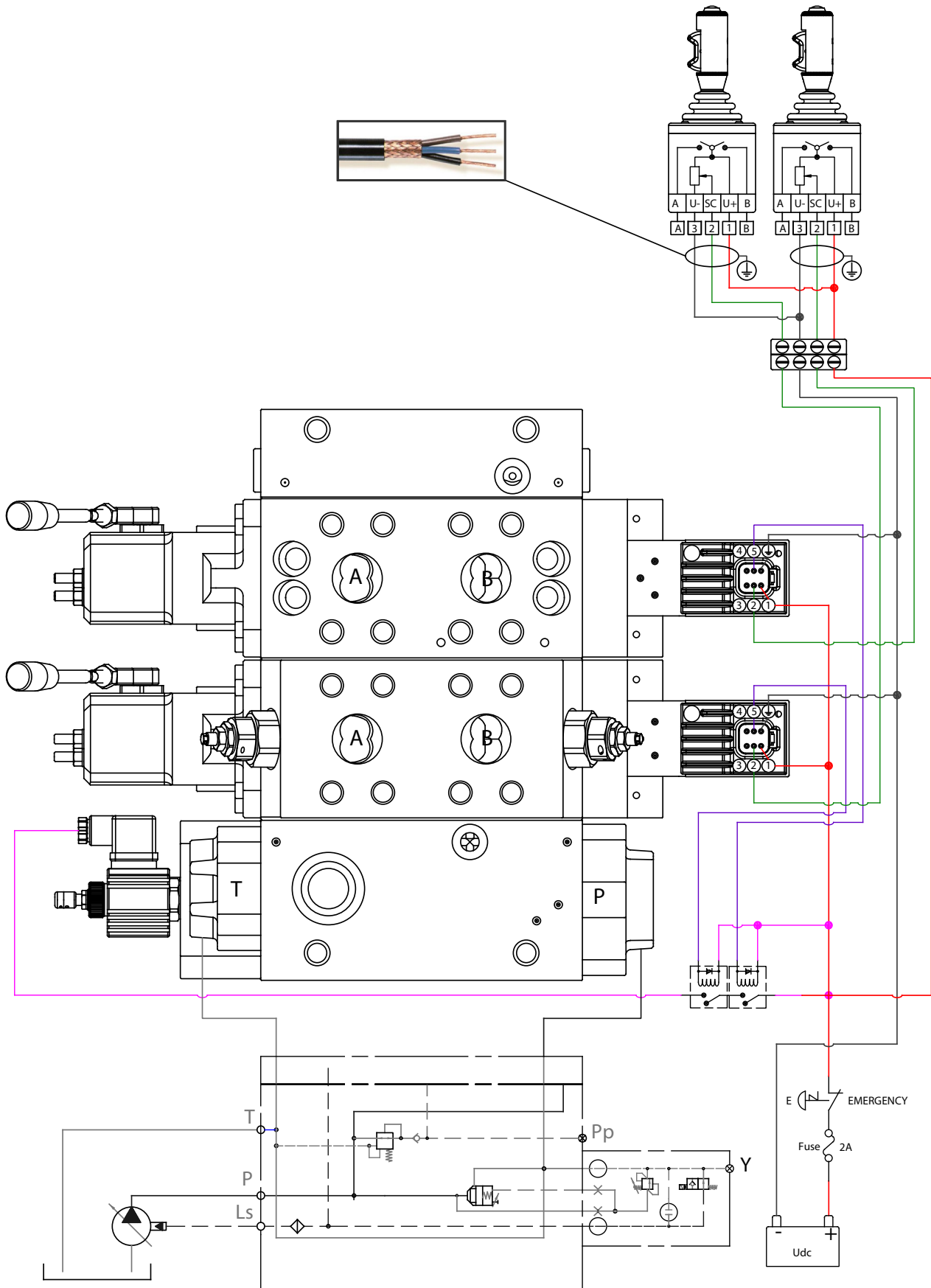


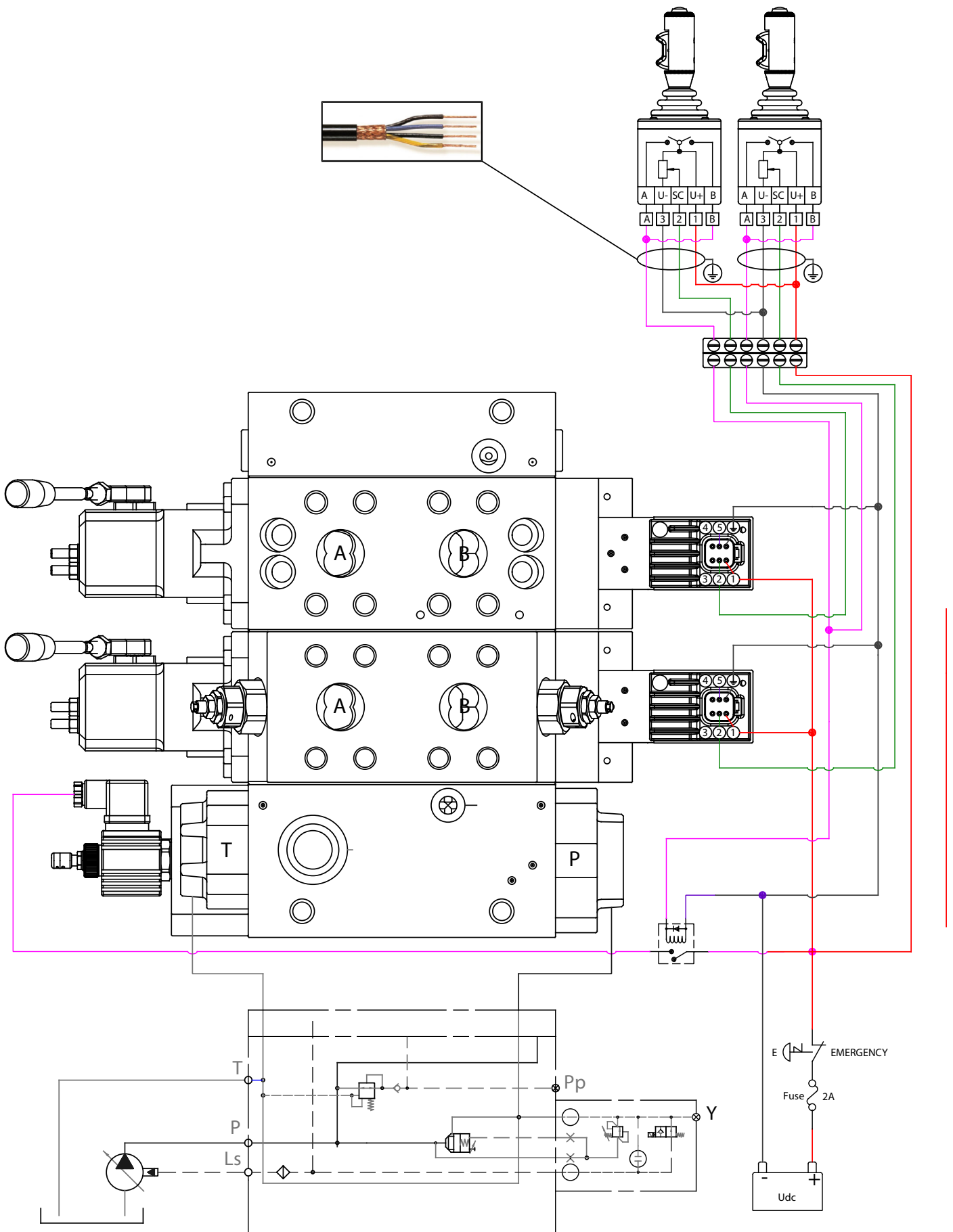
Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	CAN-high	A port-spool movement signal
	4	CAN-low	B port-spool movement signal
	5	Fault monitoring signal	
	6	Ground	

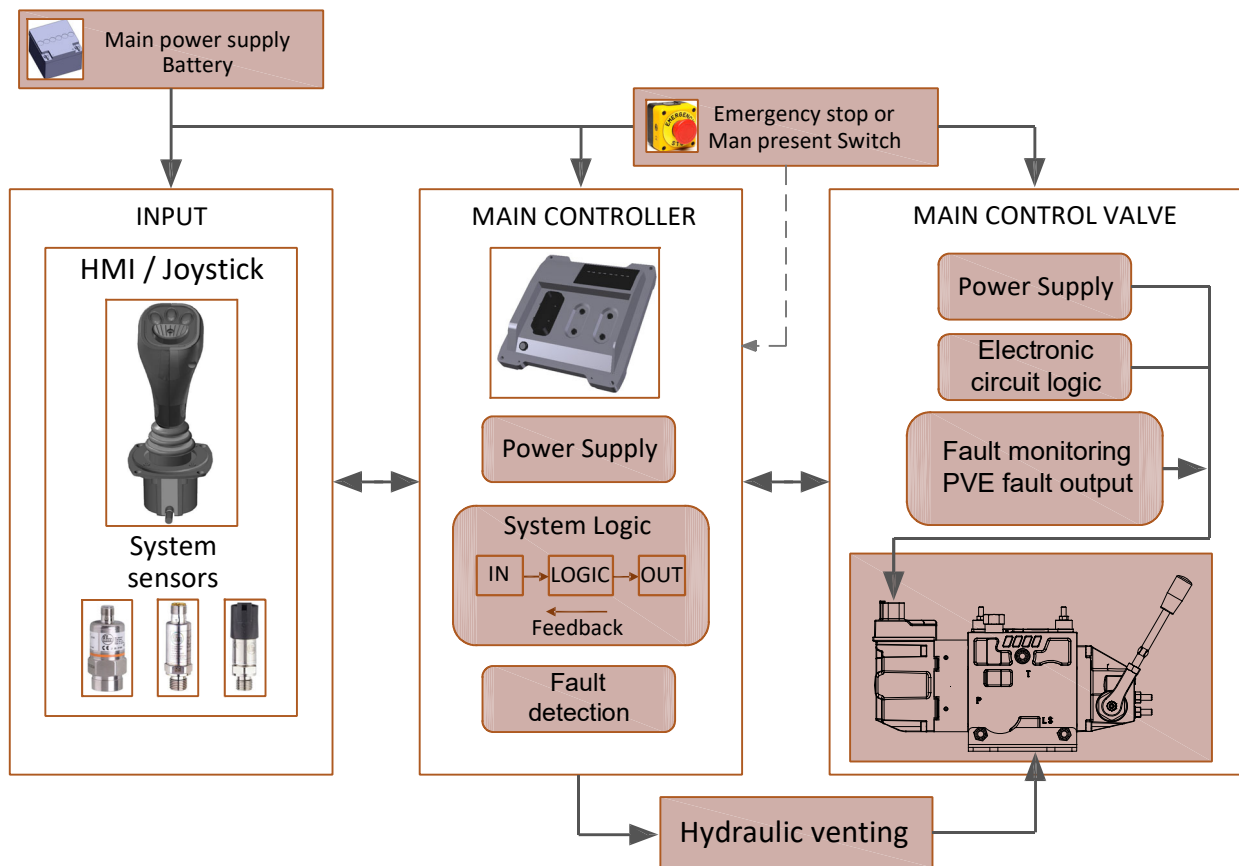


Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	Fault monitoring signal	
	4	Ground	

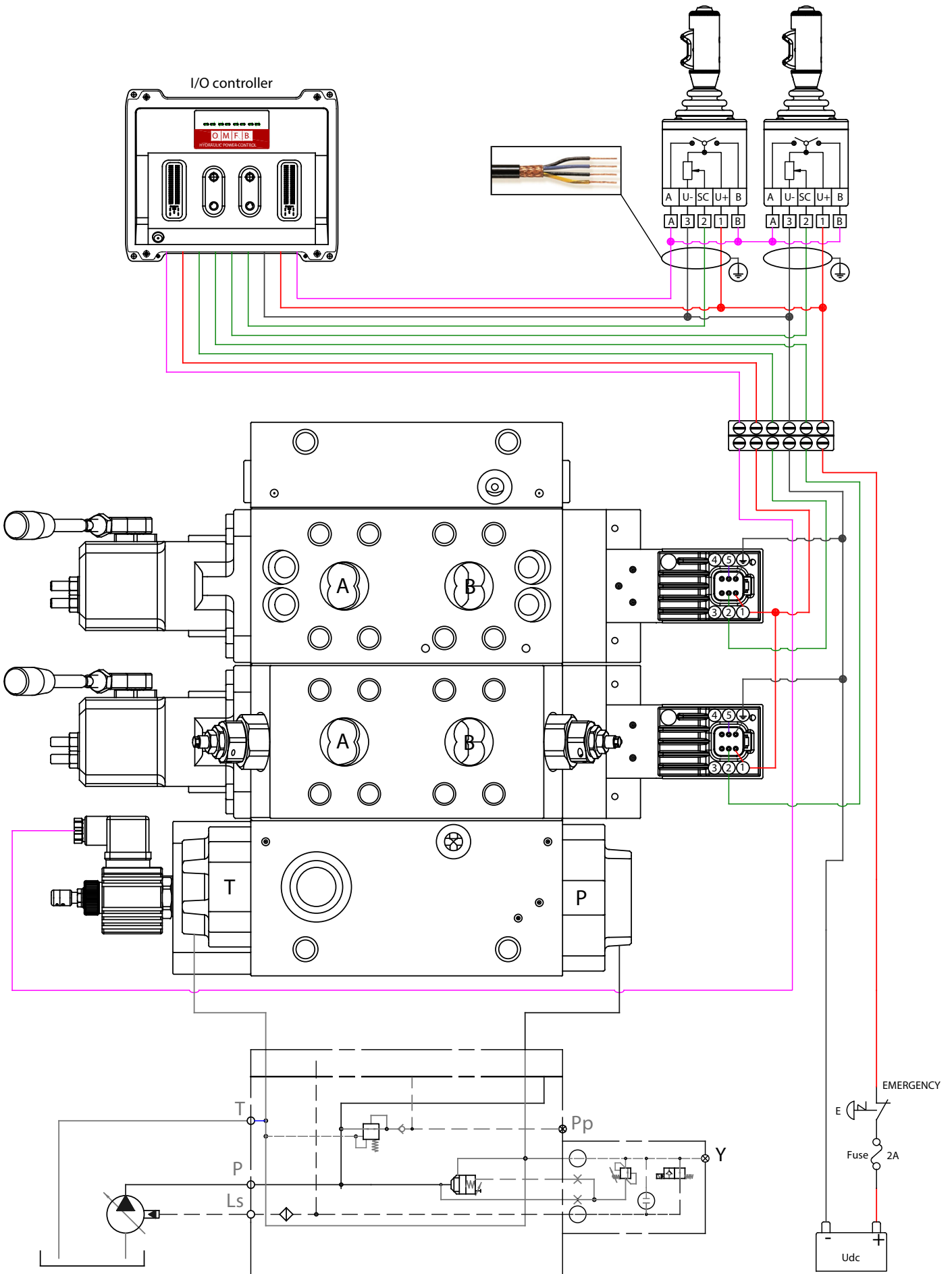
Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0182000	PEAC1182000	PEAC0172000	PEAC1172000
DIN 43650	PEAC0182200	PEAC1182200	PEAC0172200	PEAC1172200



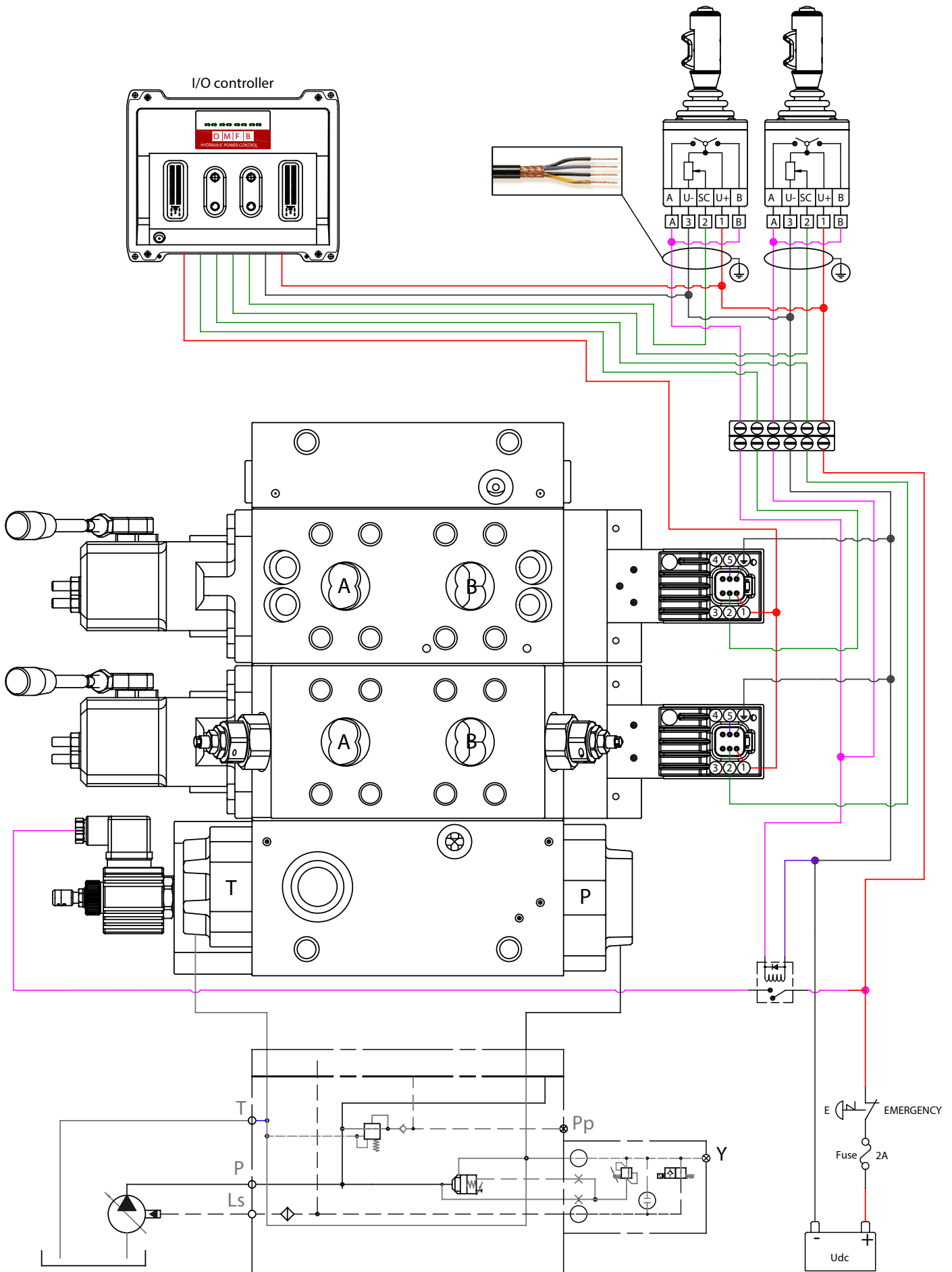




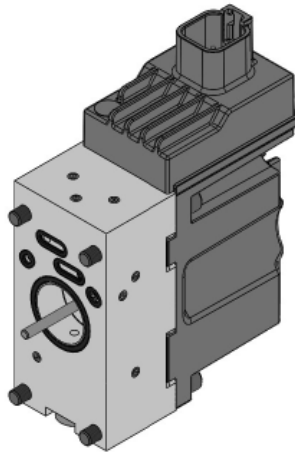
PDV315 - PEAC132 Electro-hydraulic proportional actuation
Electrical wiring diagram with OMFB I/O controller
Input signal 0 ÷ 10 V



PDV315 - PEAC132 Electro-hydraulic proportional actuation
Electrical wiring diagram with OMFB I/O controller
Input signal 0 ÷ 10 V



PDV315 - PEAC136 Electro-hydraulic proportional actuation
Closed loop spool control, high performance resolution
Input signal 4 ÷ 20 mA



PEAC136 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics. The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC136 modules comes with integrated fault monitoring system, available in two version:

- Active version
- Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up). The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

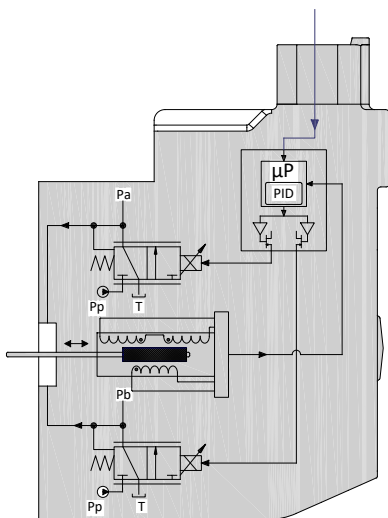
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

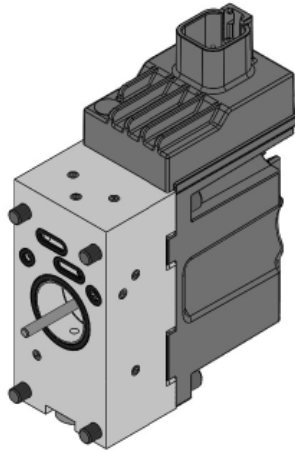
This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

The use of PEAC136 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC136 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.

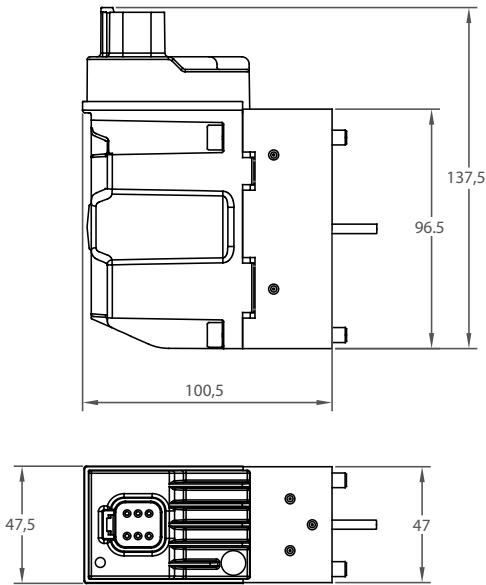



PEAC136 is defined by:

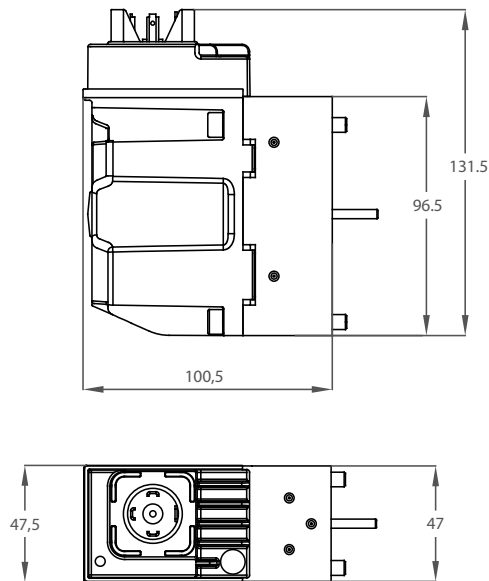
- Inductive transducer with resolution < 12 µm
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC136 Technical data

Rated supply voltage	10 ÷ 30 Vdc	
Max ripple	5%	
Signal control	4 ÷ 20 mA	
Range control signal	4 mA to 20 mA	
Neutral spool position	12 mA	
Max threshold signal, A port	1,5 mA	
Max threshold signal, B port	1,5 mA	
Max current signal @ rated voltage	48 mA	
Input capacitor	100 nF	
Signal control impedance	220 Ω	
Power consumption	8,7 W	
Heat insulation	Class H (180°C)	
Duty cycle	ED 100%	
Max current consumption	650 mA	
Current consumption in neutral position	80 mA	
Coil impedance @ 20°C	8,9 Ω	
Dither frequency	50 ÷ 200 Hz	
Recommended frequency	100 Hz	
Enclosure degree	(Electrical wiring excepted) IP65 - IP66 - IP69K	
Weight cast iron body	1,8 kg	
Weight aluminium body	1,3 kg	
Bootloader function, debugging parameters and set-up function available with Deutsch connector DT06-6S, only		
Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
Max current output signal for spool direction movement		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 ÷ 140 ms
	From max spool travel to neutral	70 ÷ 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 ÷ 170 ms
	From max spool travel to neutral	70 ÷ 90 ms

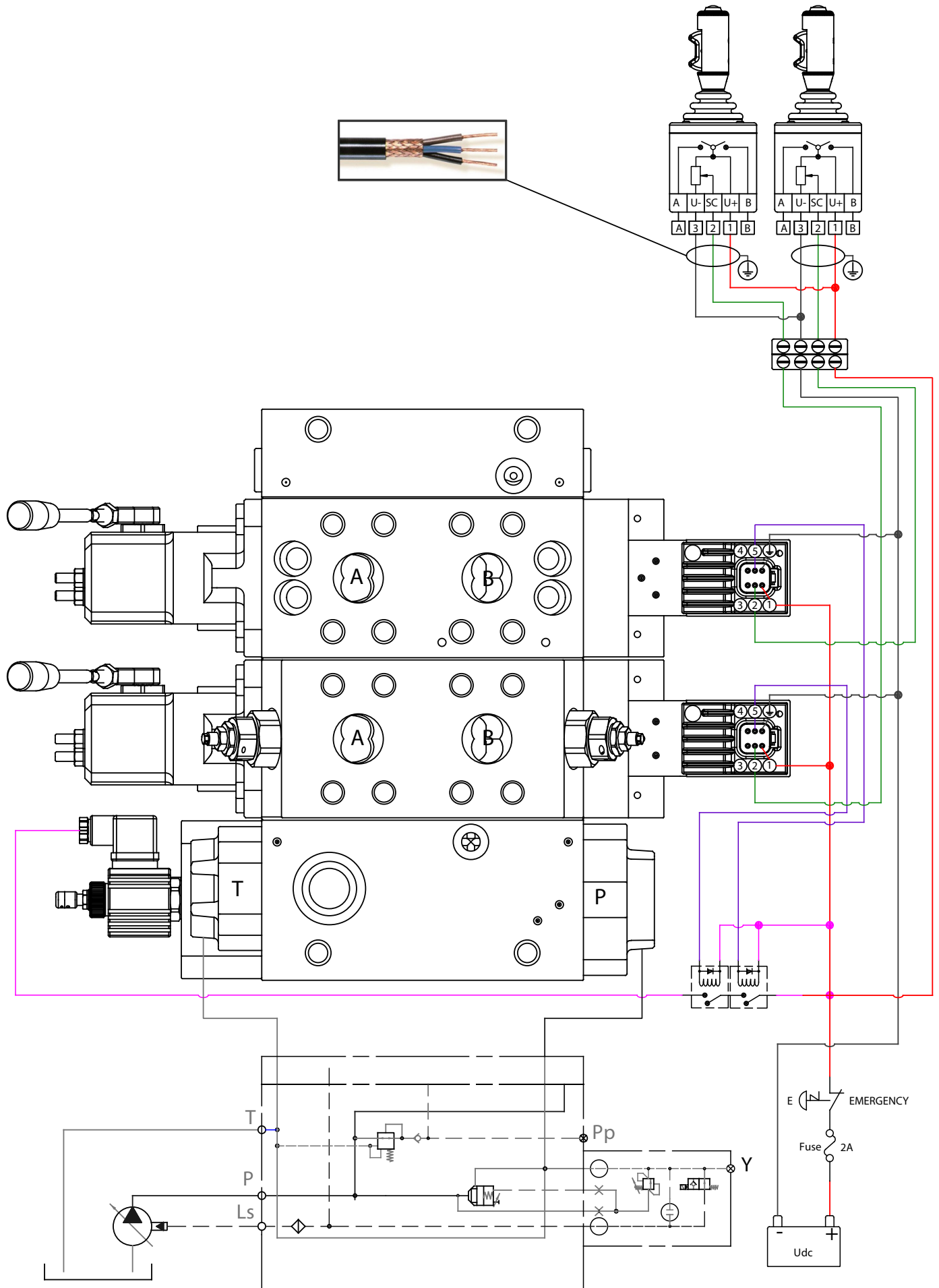


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	CAN-high	A port-spool movement signal
	4	CAN-low	B port-spool movement signal
	5	Fault monitoring signal	
	6	Ground	

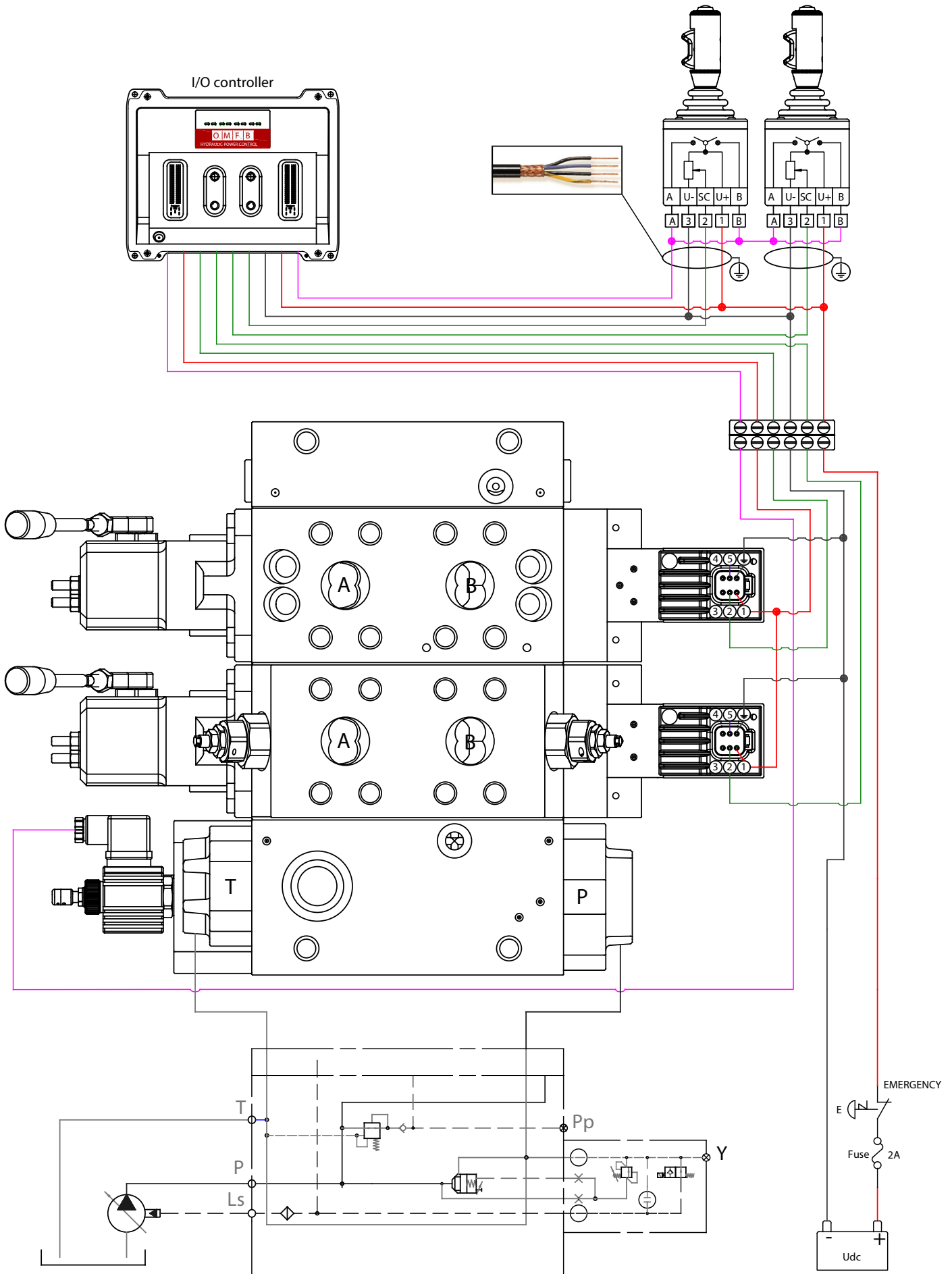


Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment			
	1	Power supply	
	2	Input signal control	
	3	Fault monitoring signal	
	4	Ground	

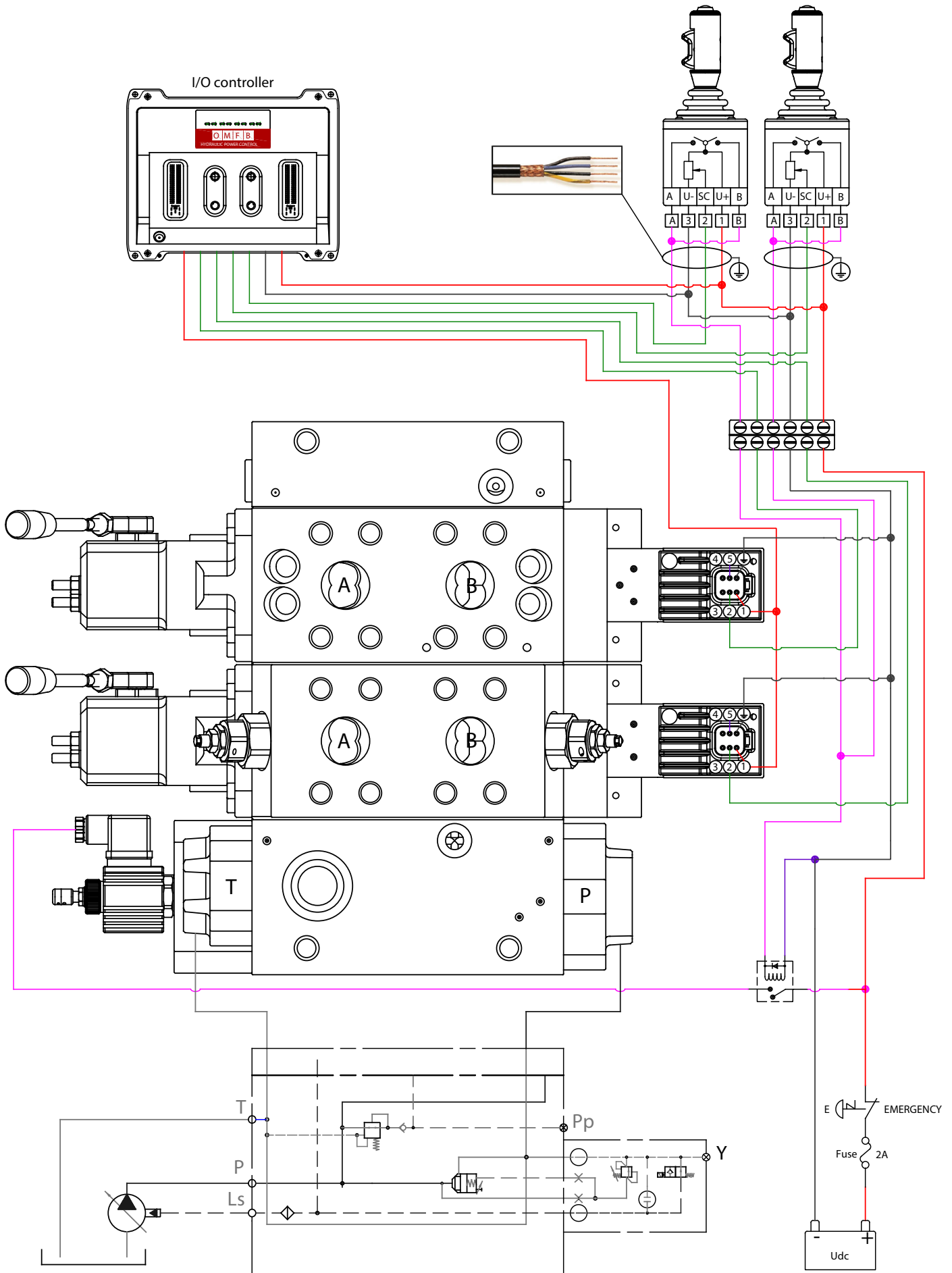
Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0186000	PEAC1186000	PEAC0176000	PEAC1176000
DIN 43650	PEAC0186200	PEAC1186200	PEAC0176200	PEAC1176200

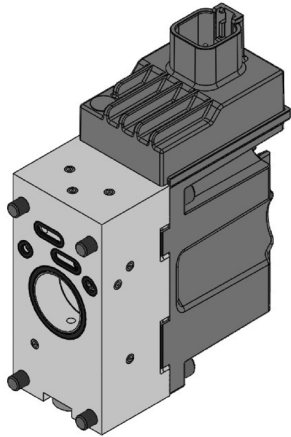


PDV315 - PEAC136 Electro-hydraulic proportional actuation.
Electrical wiring with OMFB I/O controller
 Input signal 4 ÷ 20 mA



PDV315 - PEAC136 Electro-hydraulic proportional actuation
Electrical wiring diagram with OMFB I/O controller
 Input signal 4 ÷ 20 mA



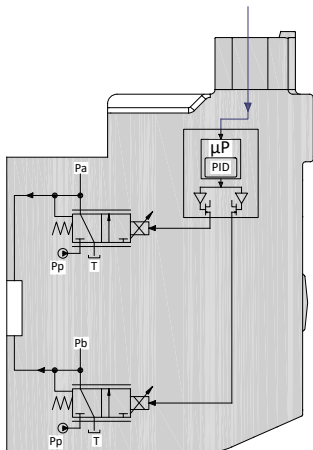


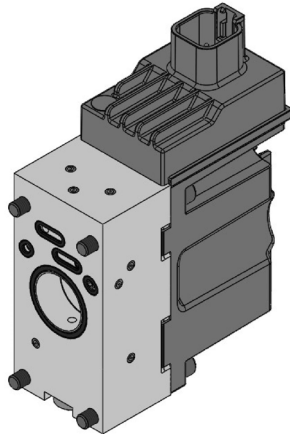
PEAC031 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC031 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

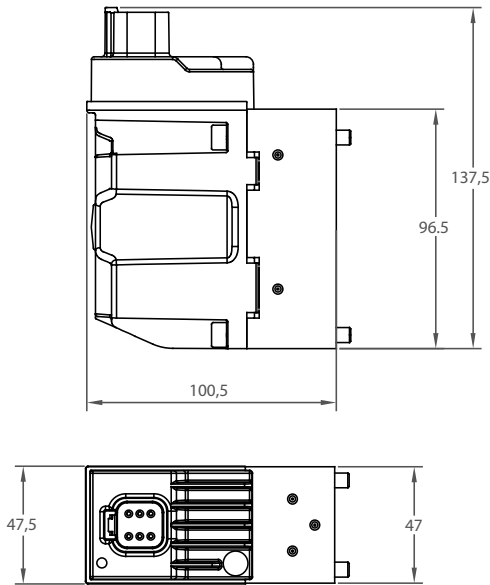
PEAC031 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.



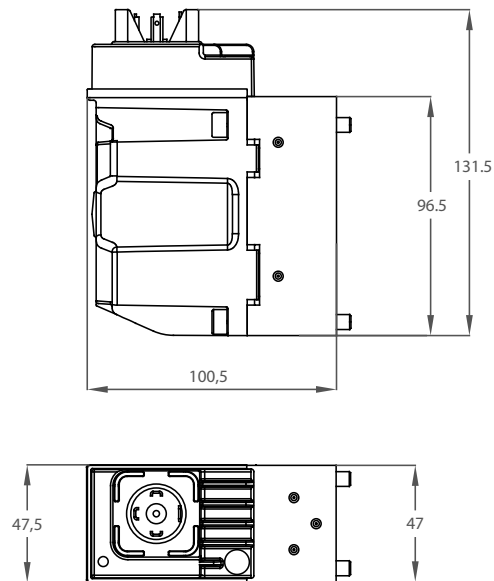

PEAC031 is defined by:

- High spool control accuracy
- EMC performace according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC031 Technical data		
Rated supply voltage	10-30 Vdc	
Max ripple	5%	
Signal control	0,5 Udc	
Range control signal	0,25 Udc to 0,75 Udc	
Neutral spool position	0,5 Udc	
Max threshold signal, A port	1 V	
Max threshold signal, B port	1 V	
Max current signal @ rated voltage	48 mA	
Input capacitor	100 nF	
Signal control impedance	25 kΩ	
Power consumption	8,7 W	
Heat insulation	Class H (180°C)	
Duty cycle	ED 100%	
Max current consumption	650 mA	
Current consumption in neutral position	80 mA	
Coil impedance @ 20°C	8,9 Ω	
Dither frequency	50-200 Hz	
Recommended frequency	100 Hz	
Enclouser degree	(Electrical wiring excepted)	
	IP 66 - IP 67 - IP 69K	
Weight cast iron body	1,8 kg	
Weight aluminium body	1,3 kg	
Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S		
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

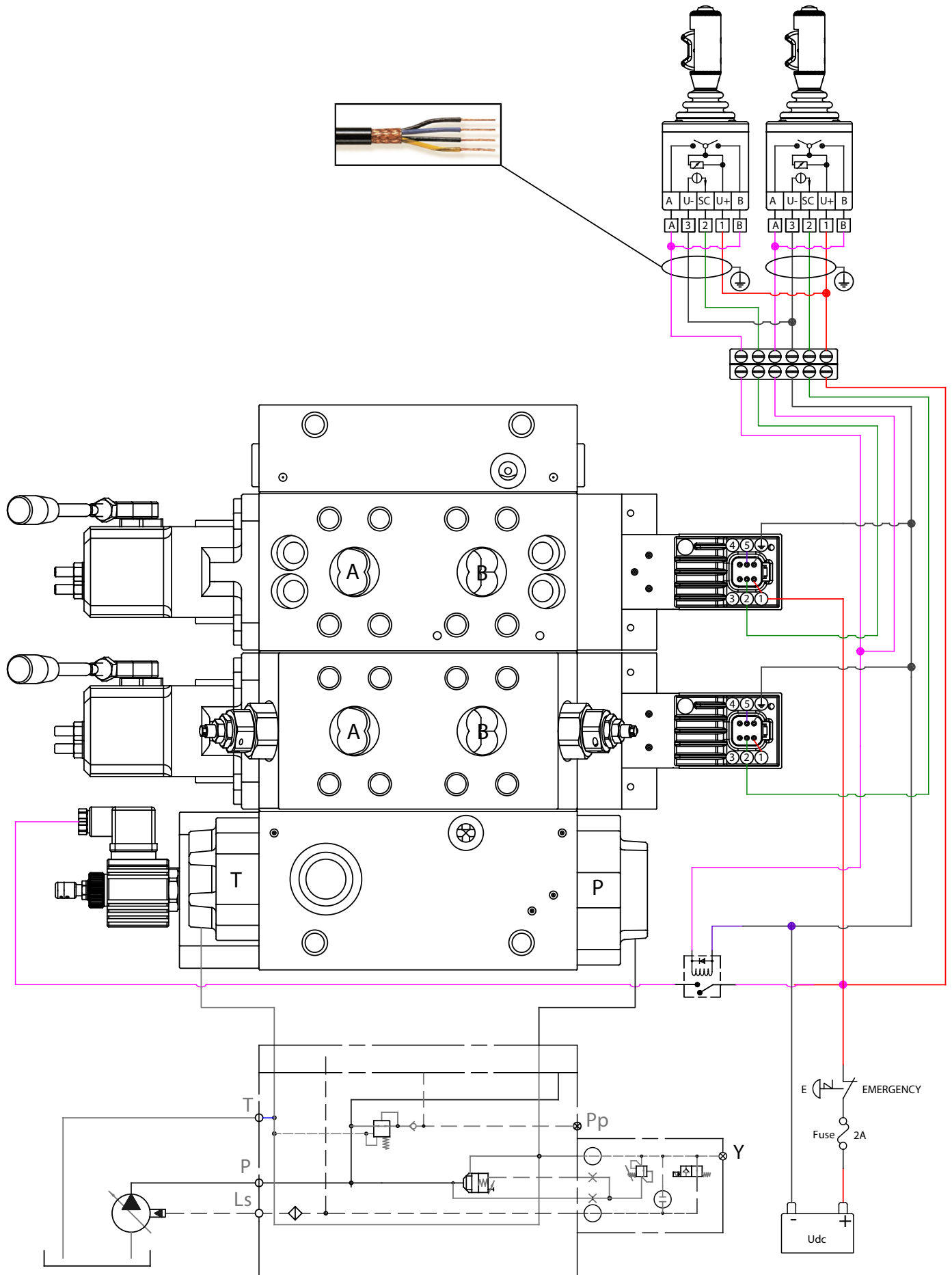


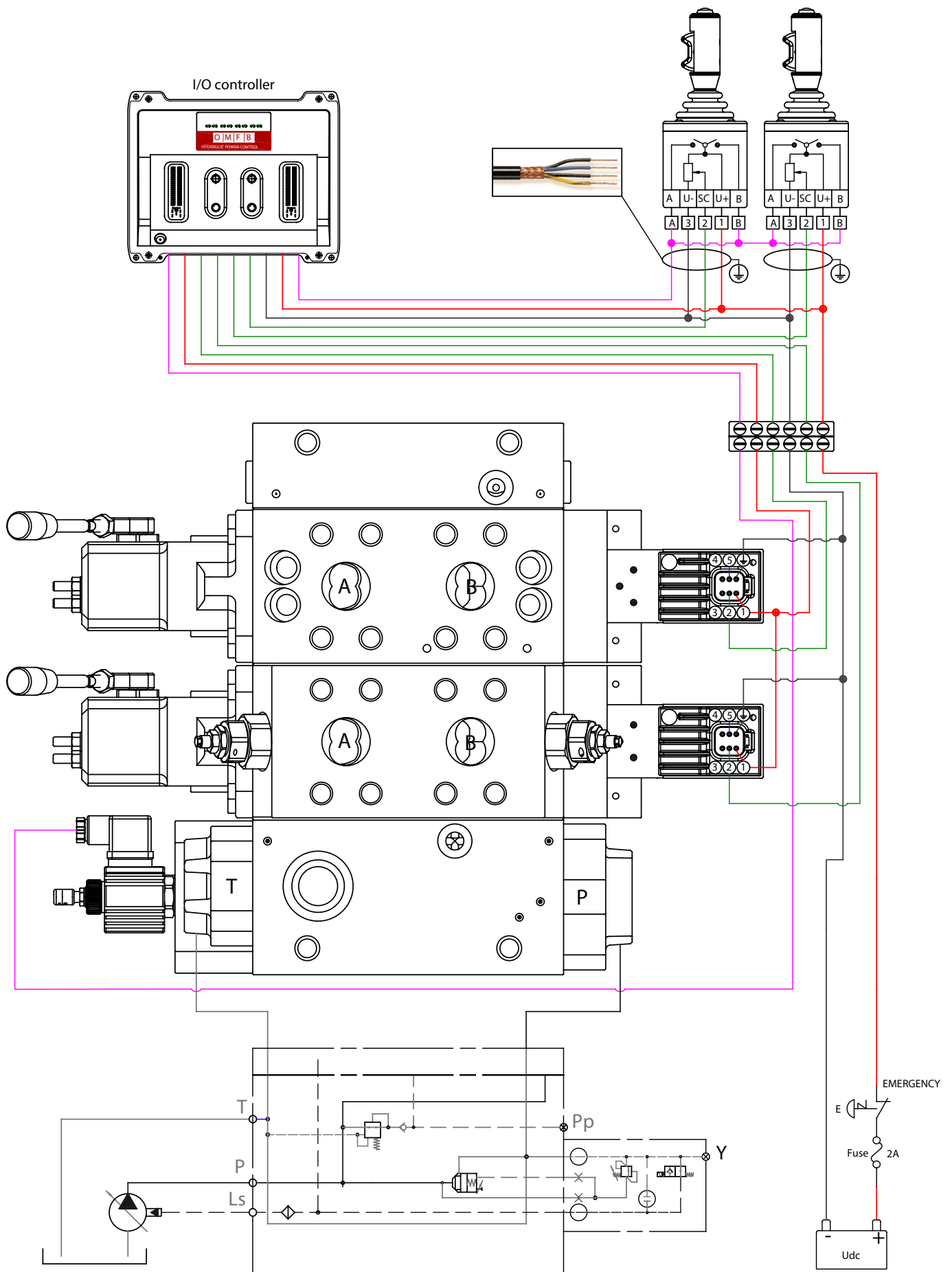
Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
	1	Power supply
	2	Input signal control
	3	CAN-high
	4	CAN-low
	5	Free
	6	Ground

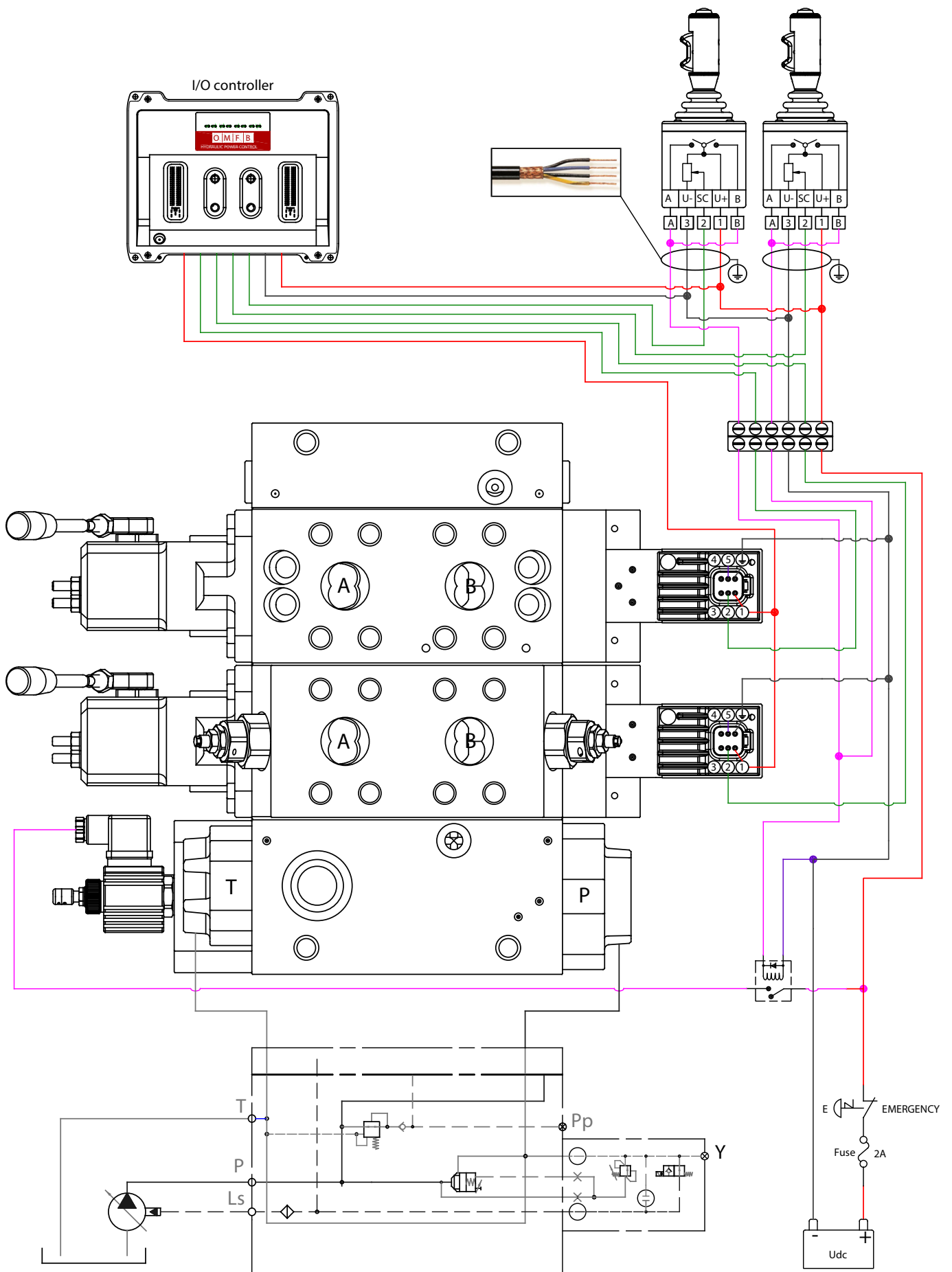


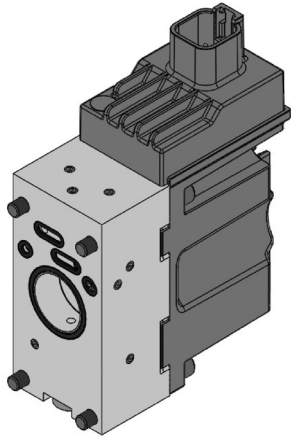
Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
	1	Power supply
	2	Input signal control
	3	Free
	4	Ground

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0081000	PEAC1081000	PEAC0071000	PEAC1071000
DIN 43650	PEAC0081200	PEAC1081200	PEAC0071200	PEAC1071200







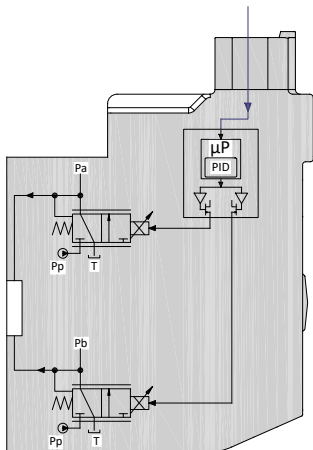


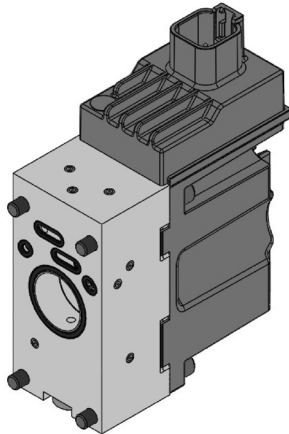
PEAC032 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC032 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAC032 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.

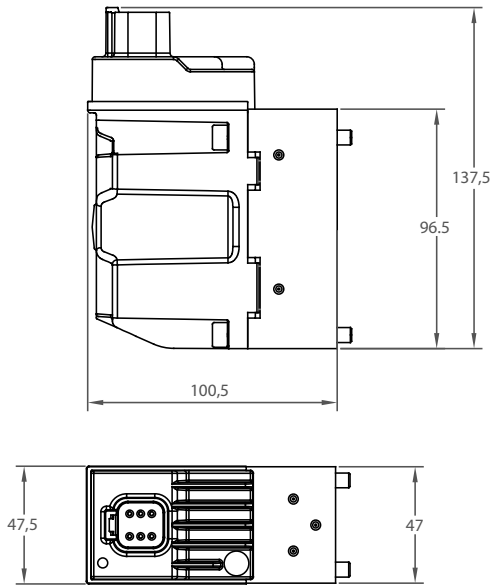


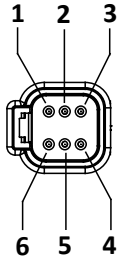

PEAC032 is defined by:

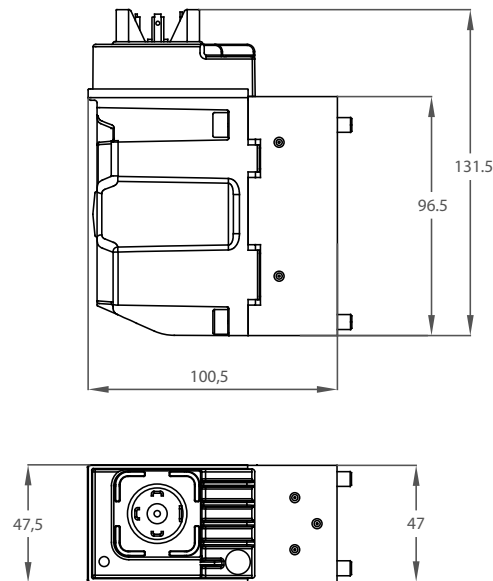
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

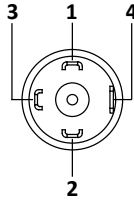
PEAC032 Technical data

Rated supply voltage	10-30 Vdc	
Max ripple	5%	
Signal control	0-10 V	
Range control signal	2,5 V to 7,5 V	
Neutral spool position	5 V	
Max threshold signal, A port	1 V	
Max threshold signal, B port	1 V	
Max current signal @ rated voltage	48 mA	
Input capacitor	100 nF	
Signal control impedance	25 kΩ	
Power consumption	8,7 W	
Heat insulation	Class H (180°C)	
Duty cycle	ED 100%	
Max current consumption	650 mA	
Current consumption in neutral position	80 mA	
Coil impedance @ 20°C	8,9 Ω	
Dither frequency	50-200 Hz	
Recommended frequency	100 Hz	
Enclosure degree	(Electrical wiring excepted) IP 66 - IP 67 - IP 69K	
Weight cast iron body	1,8 kg	
Weight aluminium body	1,3 kg	
Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S		
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

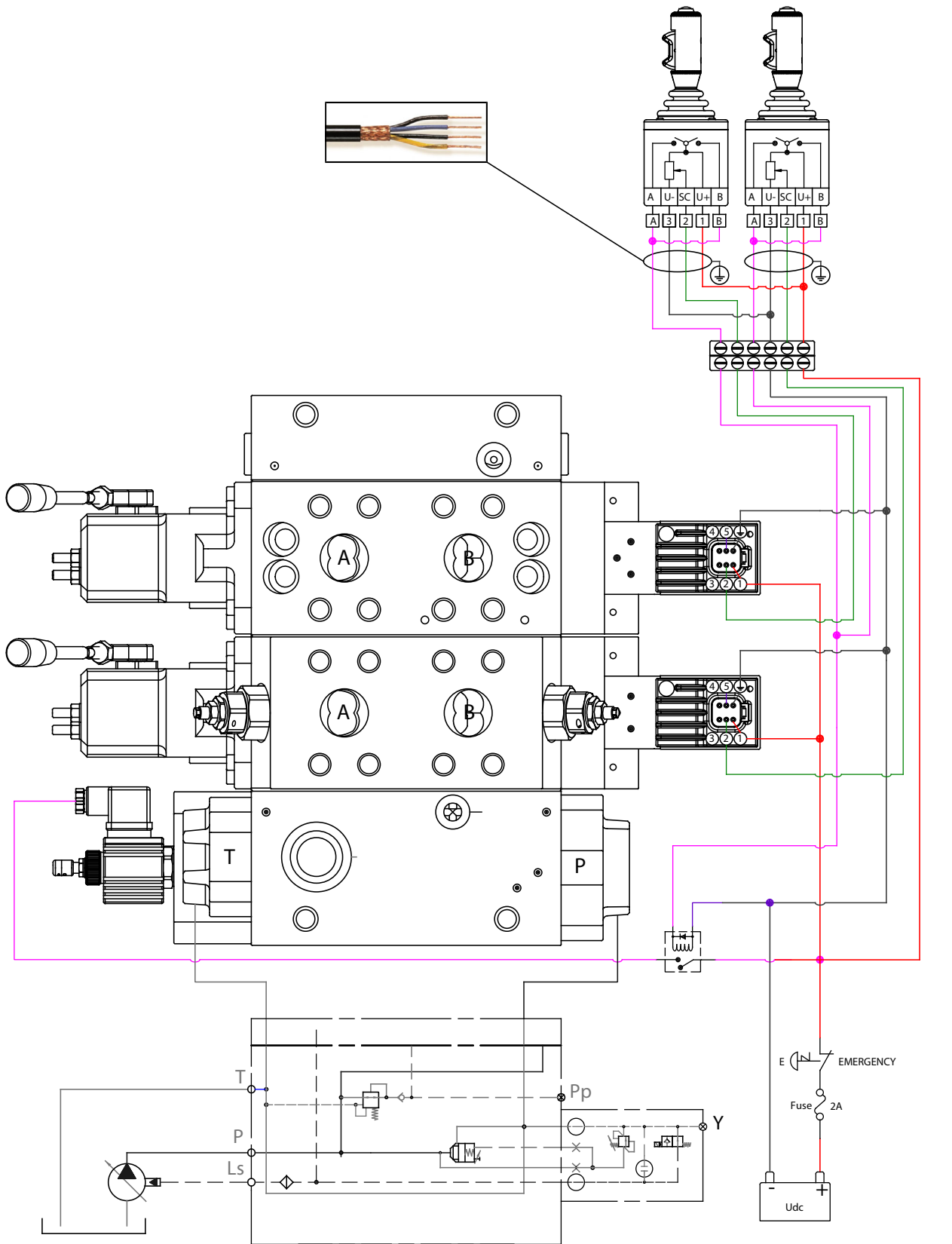


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
	1	Power supply
	2	Input signal control
	3	CAN-high
	4	CAN-low
	5	Free
	6	Ground

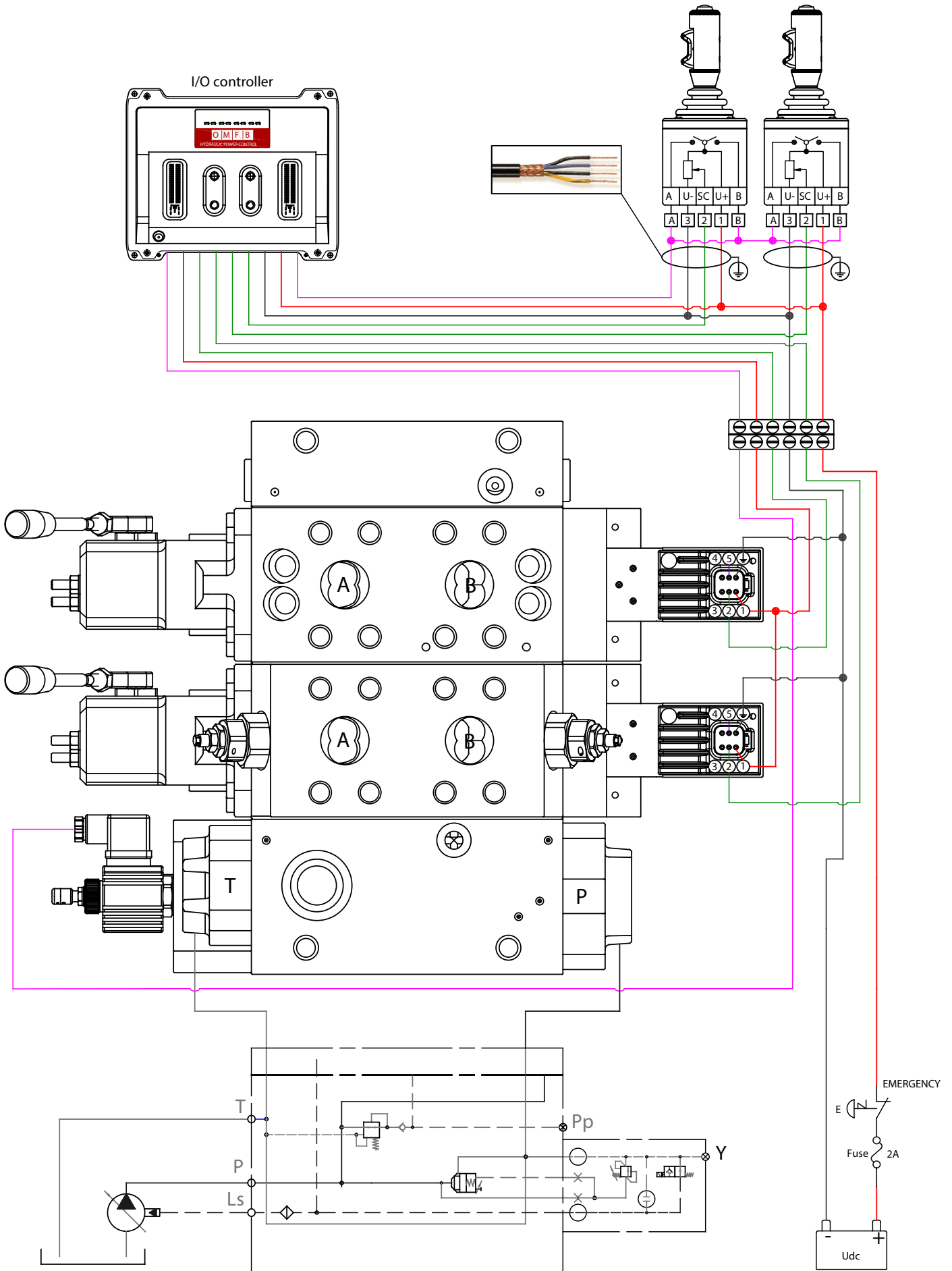


Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
	1	Power supply
	2	Input signal control
	3	Free
	4	Ground

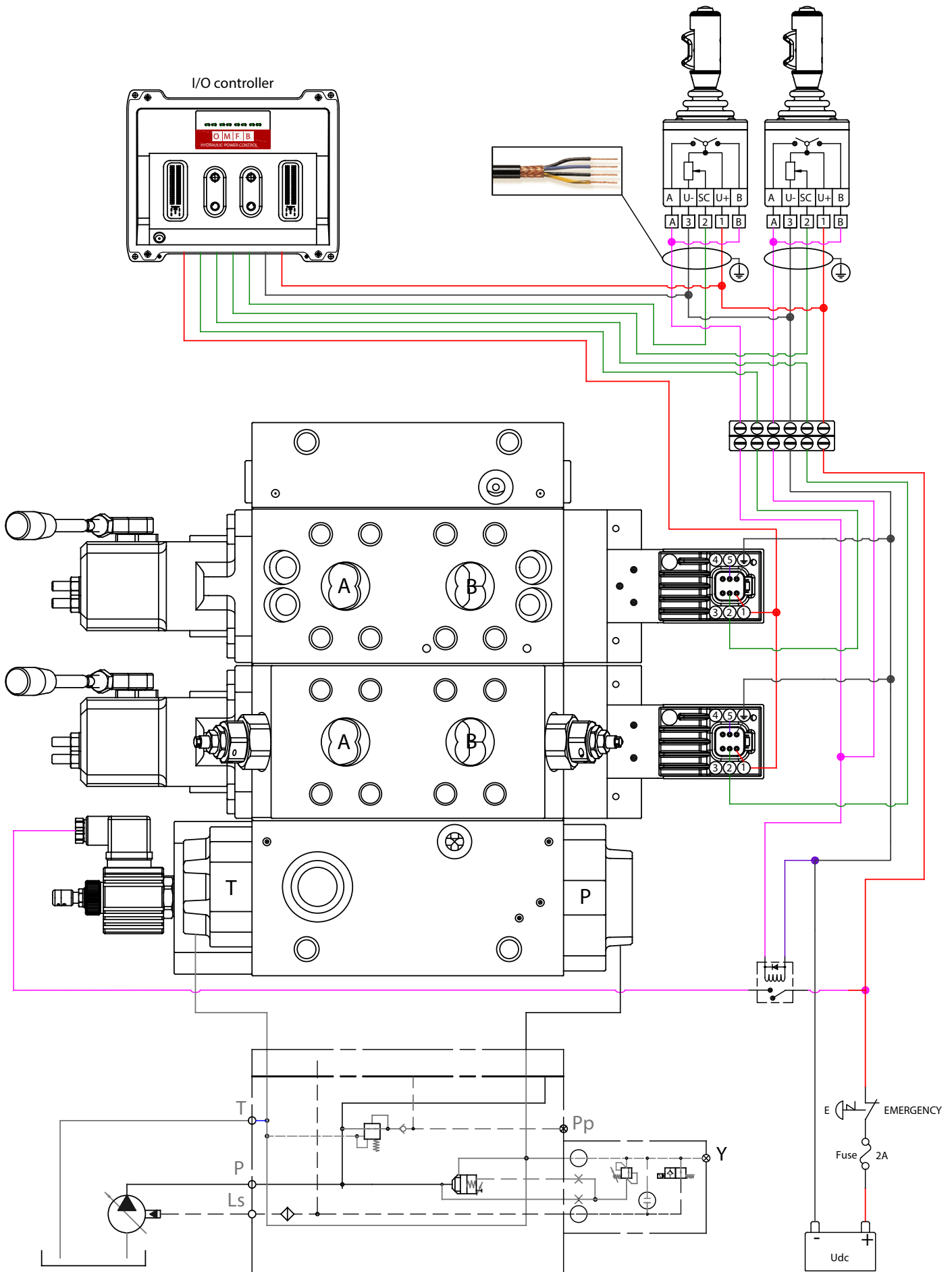
Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC082000	PEAC1082000	PEAC0072000	PEAC1072000
DIN 43650	PEAC082200	PEAC1082200	PEAC0072200	PEAC1072200

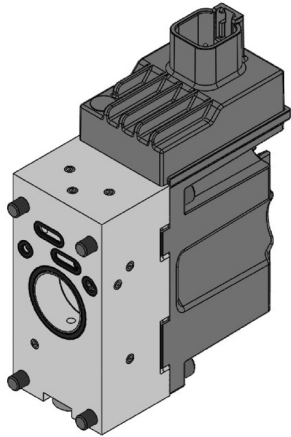


PDV315 - PEAC032 Electro-hydraulic proportional actuation
Electrical wiring diagram with OMFB I/O controller
Input signal 0 ÷ 10 V



PDV315 - PEAC032 Electro-hydraulic proportional actuation
Electrical wiring diagram with OMFB I/O controller
Input signal 0 ÷ 10 V



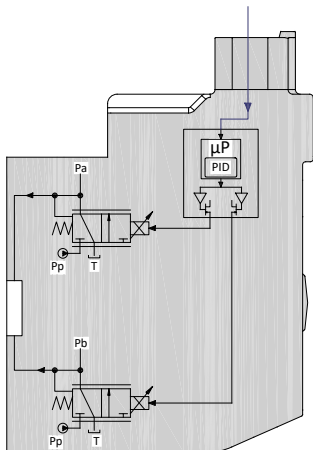


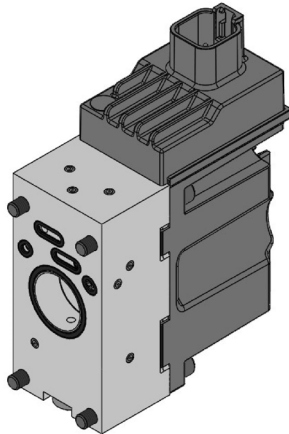
PEAC036 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC036 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

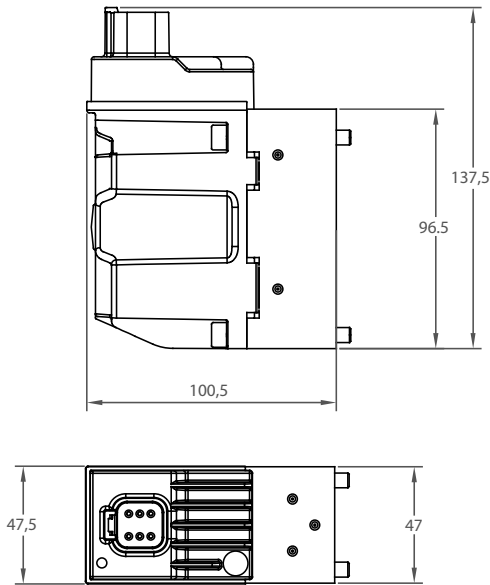
PEAC036 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.



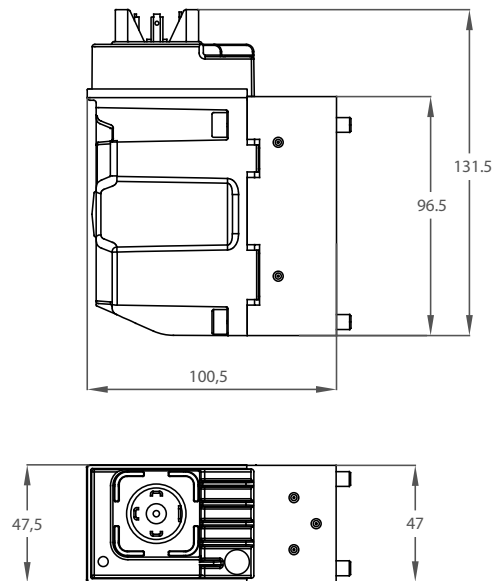

PEAC036 is defined by:

- High spool control accuracy
- EMC performace according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC036 Technical data		
Rated supply voltage		10-30 Vdc
Max ripple		5%
Signal control		4-20 mA
Range control signal		4 mA to 20 mA
Neutral spool position		12 mA
Max threshold signal, A port		1,5 mA
Max threshold signal, B port		1,5 mA
Input capacitor		100 nF
Input impedance		220 Ω
Power consumption		8,7 W
Heat insulation		Class H (180°C)
Duty cycle		ED 100%
Max current consumption		650 mA
Current consumption in neutral position		80 mA
Max current start spool travel		140 mA
Max current end spool travel		450 mA
Coil impedance @ 20°C		8,9 Ω
Signal control impedance		50 KΩ
Dither frequency		50-200 Hz
Recommended frequency		100 Hz
Enclouser degree	(Electrical wiring excepted)	IP65 - IP66 - IP69K
Bootloader function, debugging parameters and set-up function available with Deutsch connector DT06-6S, only		
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms



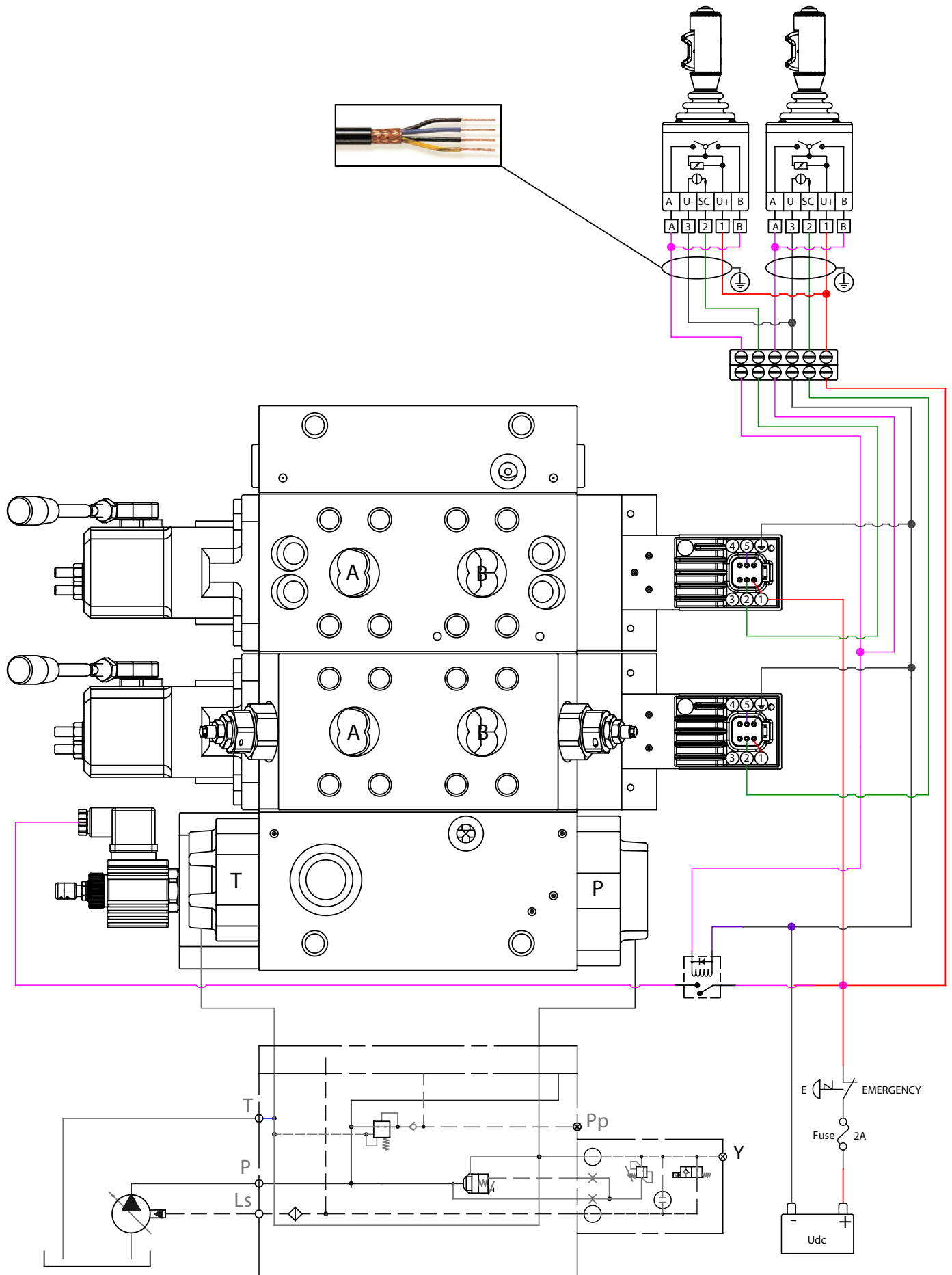
Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
	1	Power supply
	2	Input signal control
	3	CAN-high
	4	CAN-low
	5	Free
	6	Ground



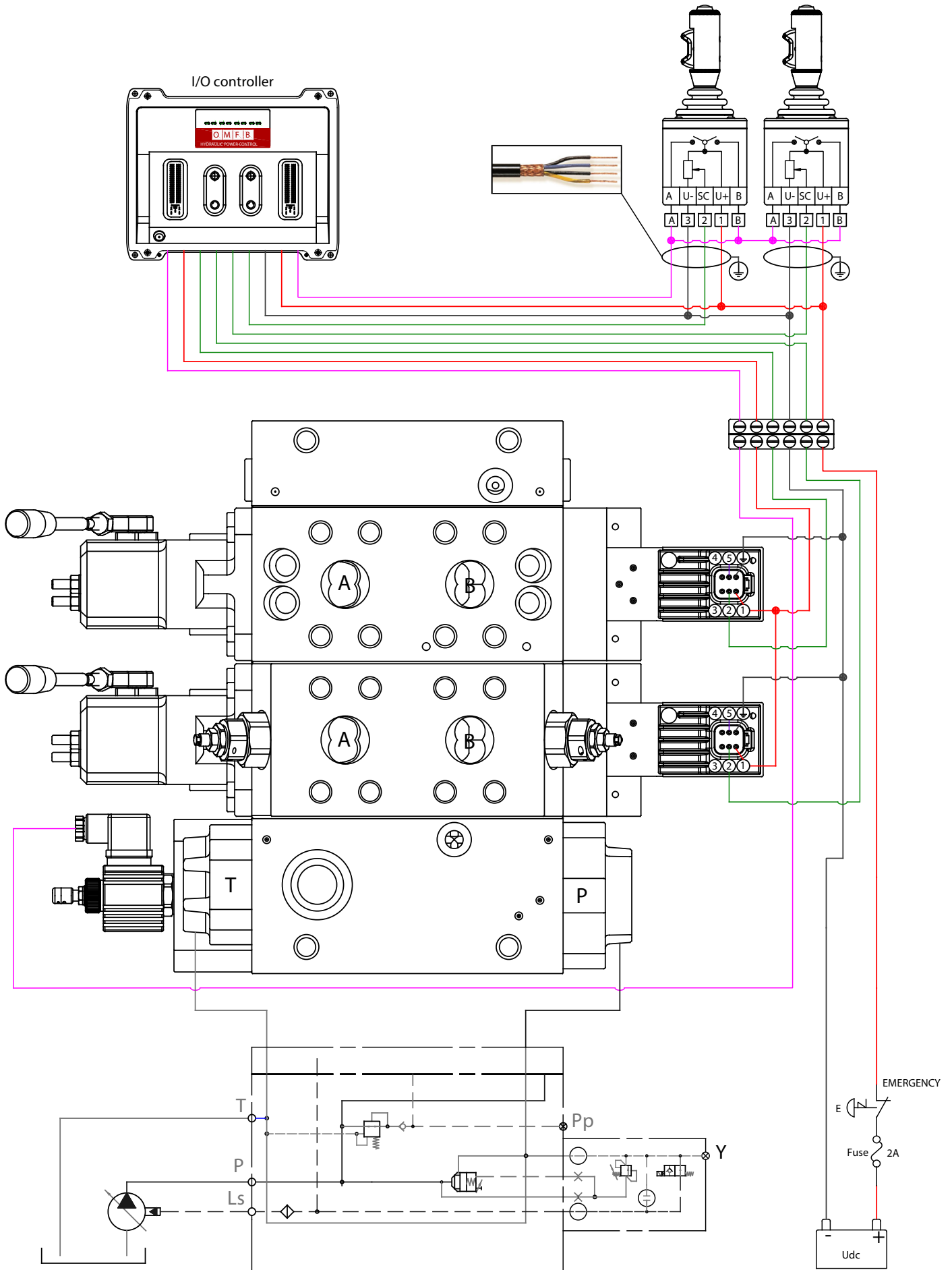
Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
	1	Power supply
	2	Input signal control
	3	Free
	4	Ground

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0086000	PEAC1086000	PEAC0076000	PEAC1076000
DIN 43650	PEAC0086200	PEAC1086200	PEAC0076200	PEAC1076200

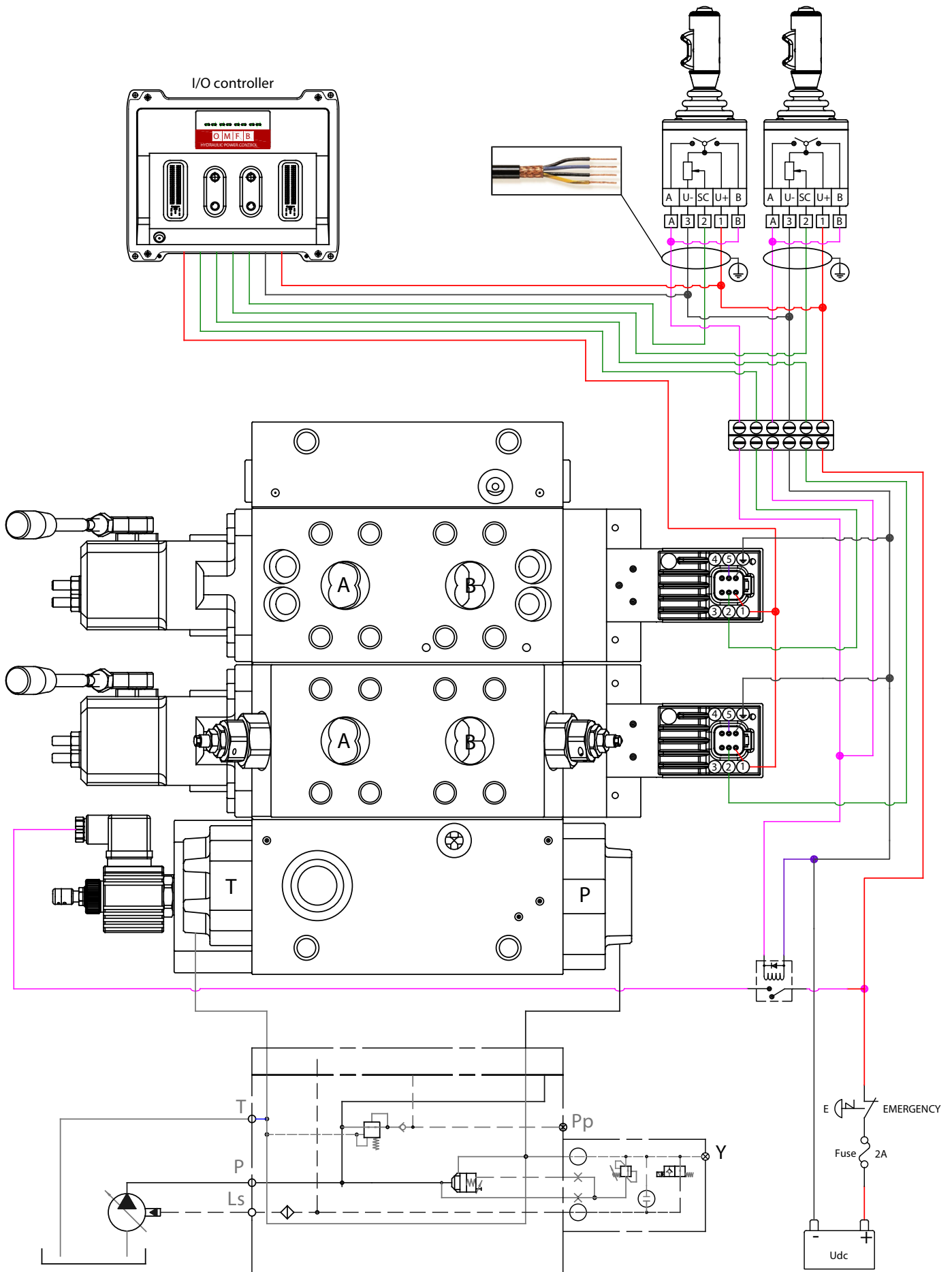
PDV315 - PEAC036 Electro-hydraulic proportional actuation.
Input signal control 4-20 mA
Electrical wiring

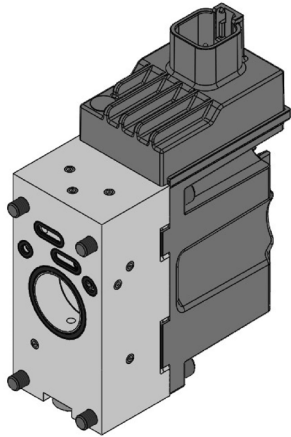


PDV315 - PEAC036 Electro-hydraulic proportional actuation.
Electrical wiring with OMFB I/O controller
Current input signal 4 ÷ 20 mA



PDV315 - PEAC036 Electro-hydraulic proportional actuation.
Electrical wiring with OMFB I/O controller
Current input signal 4 ÷ 20 mA



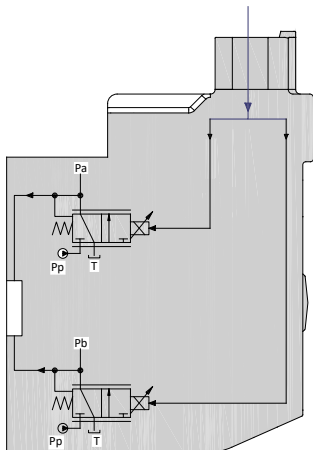


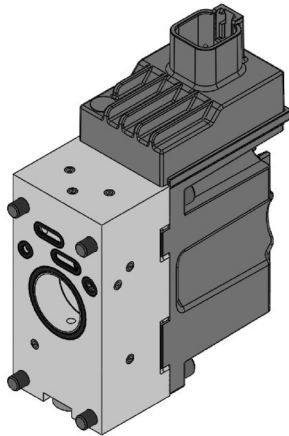
PEAD3 is a proportional open loop spool actuation without integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAD3 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

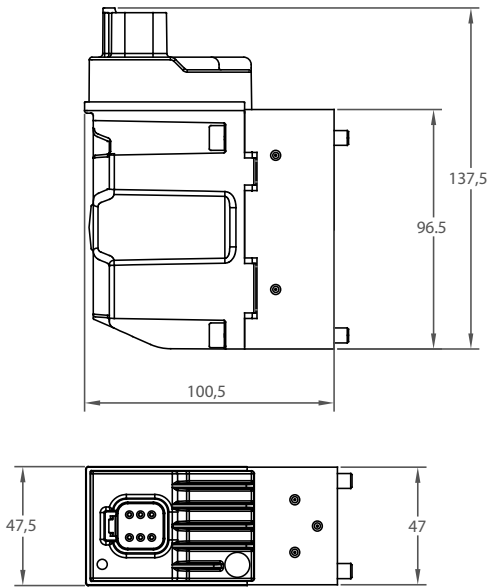
PEAD3 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.



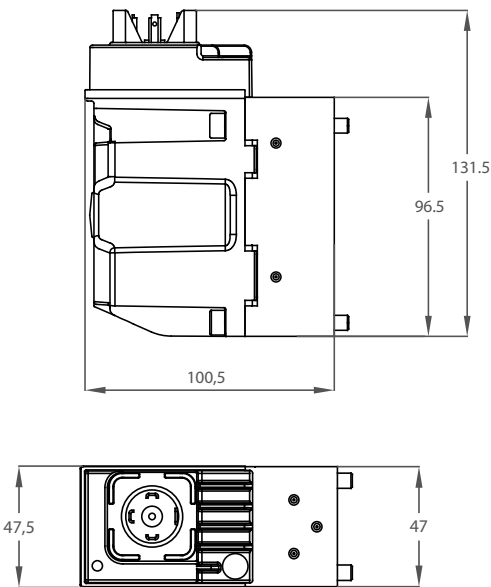

PEAD3 is defined by:

- High spool control accuracy
- EMC performace according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

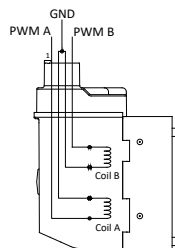
PEAD3 Technical data		
Supply voltage		12 Vdc 24 Vdc
Voltage range		10-16 V 20-30 V
Max ripple		5% 5%
Current consuption at rated voltage		750 mA @ 12 Vdc 400 mA @ 24 Vdc
Power consumption		9 W 9,6 W
R @ 20°C		8,9 Ω 35 Ω
Start spool travel		220 mA 140 mA
End spool travel flow control		650 mA 350 mA
Max spool flow in pre-floating position		650 mA 350 mA
Spool floating position		750 mA 400 mA
Heat insulation		Class H (180°C)
Oil temperature (Recommended)		20 ÷ 60 °C
Oil temperature (Min)		-30 °C
Oil temperature (Max)		80 °C
Ambient temperature		-30 ÷ 60 °C
PWM frequency		50 ÷ 200 Hz
Best frequency		100 Hz
Duty cycle		100% ED
Plug connector		6 pins Deutsch or 4 pins DIN
Enclouser degree	(Electrical wiring excepted)	IP69K
Weight cast iron body		1, 8 kg
Weight Aluminium body		1,3 kg
Max current output signal for spool direction moviment		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms



Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
	1	A port +
	2	Free
	3	A port -
	4	B port +
	5	Free
	6	B port -

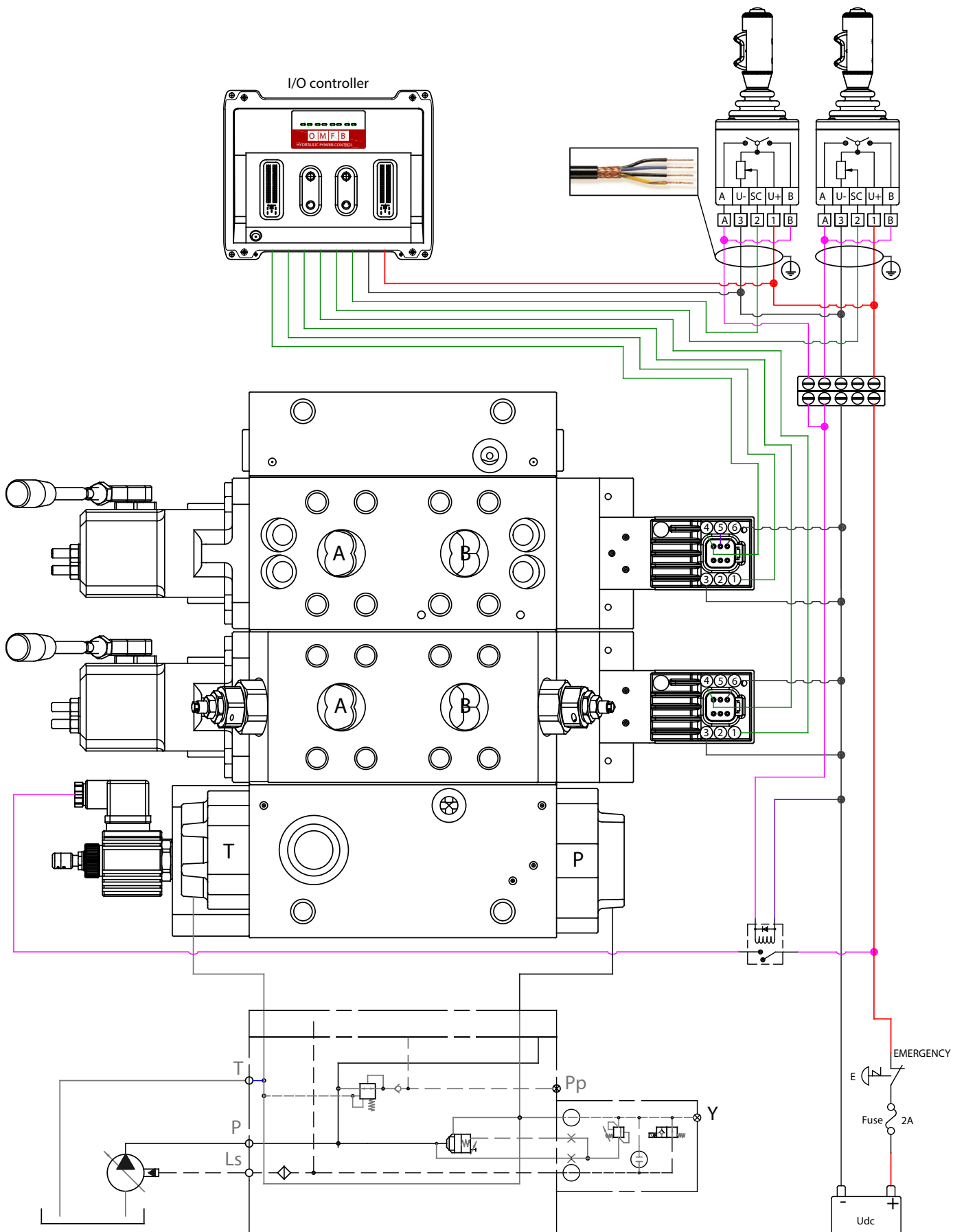


Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
	1	A port +
	2	B port +
	3	Free
	4	Ground

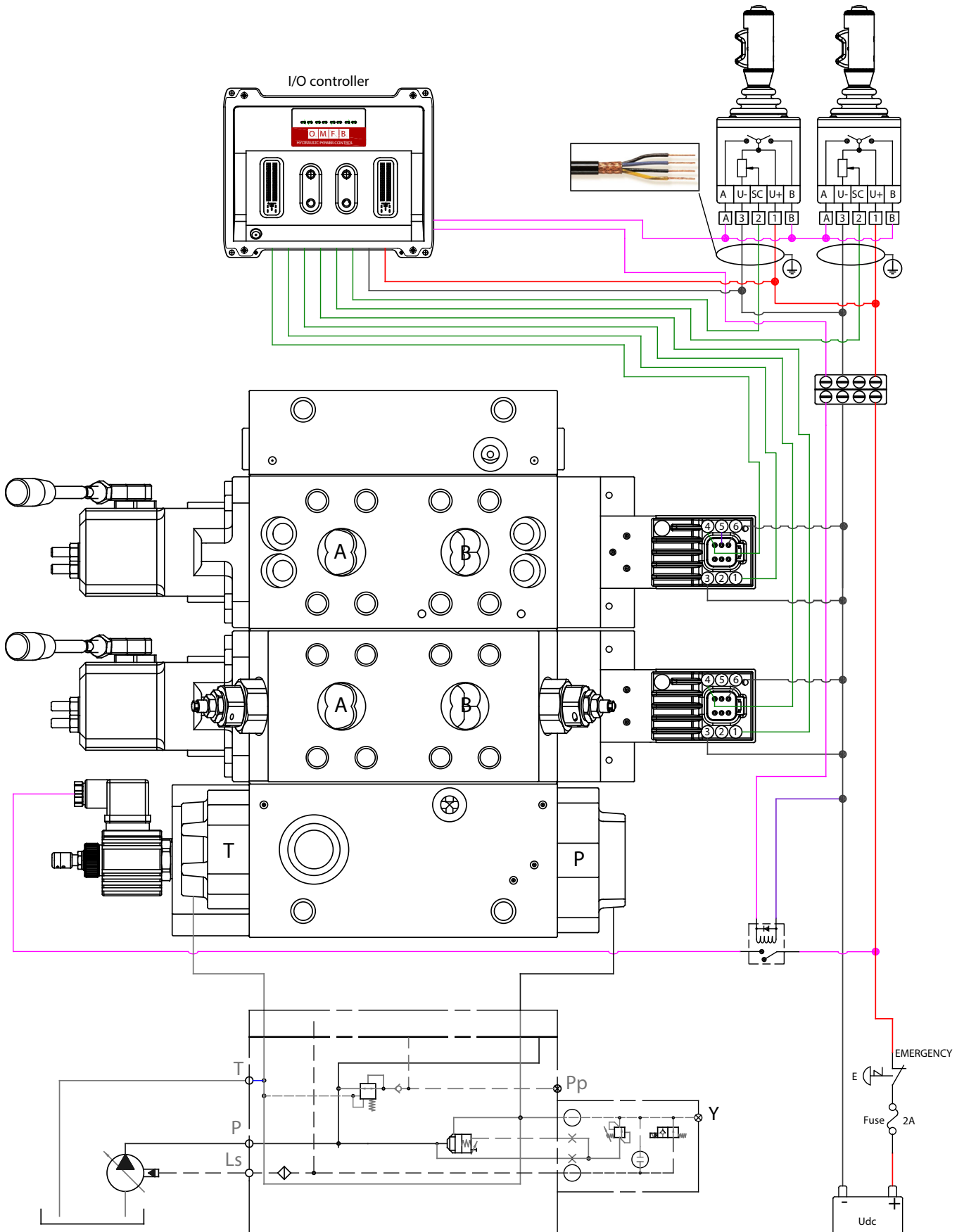


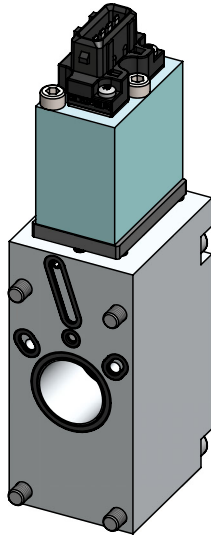
Connector version	Code numbers			
	12 V		24 V	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAD0100002	PEAD1100002	PEAD0200002	PEAD1200002
DIN 43650	PEAD0120002	PEAD1120002	PEAD0220002	PEAD1220002

PDV315 - PEAD3 Electro-hydraulic proportional actuation.
Electrical wiring with OMFB I/O controller - Current input signal for PWM or supply voltage for ON/OFF control



PDV315 - PEAD3 Electro-hydraulic proportional actuation.
Electrical wiring with OMFB I/O controller - Current input signal for PWM or supply voltage for ON/OFF control

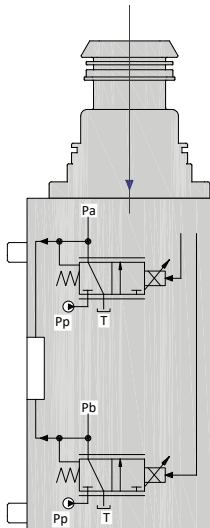




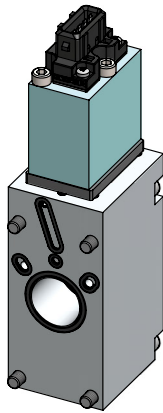
PEAP3 is a proportional open loop spool actuation without integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAP3 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

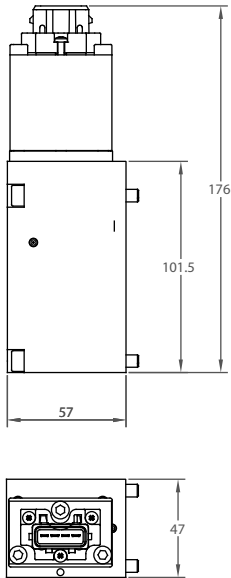


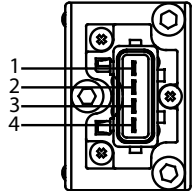
PEAP3 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.

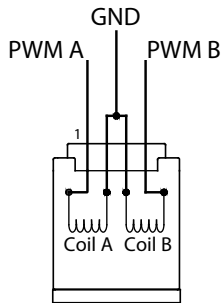

PEAP3 is defined by:

- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAP3 Technical data		
Supply voltage	12 Vdc	24 Vdc
Voltage range	10-16 V	20-30 V
Max ripple	5%	5%
Current consumption at rated voltage	1330 mA @ 12 Vdc	630 mA @ 24 Vdc
Power consumption	23 W	21 W
R @ 20°C	6,3 Ω	27 Ω
Start spool travel	220 mA	140 mA
End spool travel flow control	1330 mA	550 mA
Max spool flow in pre-floating position	1330 mA	630 mA
Spool floating position	750 mA	400 mA
Heat insulation	Class H (180°C)	
Oil temperature (Recommended)	-20 ÷ 60 °C	
Oil temperature (Min)	-30 °C	
Oil temperature (Max)	80 °C	
Ambient temperature	-30 ÷ 60 °C	
PWM frequency	50 ÷ 200 Hz	
Best frequency	100 Hz	
Duty cycle	100% ED	
Plug connector	Amp Junior Power Timer 4 pins	
Enclouser degree	(Electrical wiring excepted) IP69K	
Max current output signal for spool direction movement	50 mA	
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

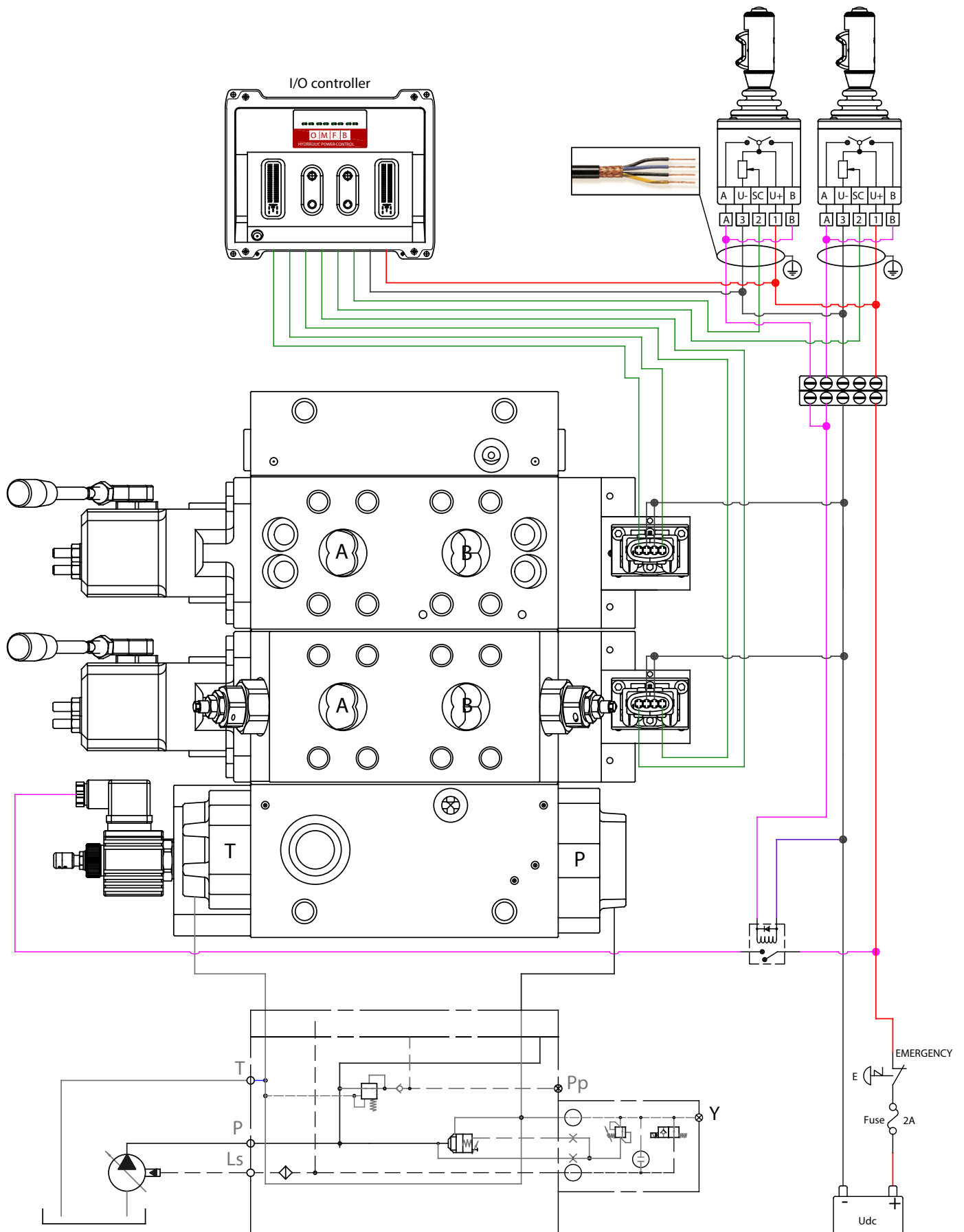


Amp Junior Power Timer 4 pin connector Enclosure degree IP 65 PIN-assignment	
	1 A port +
	2 A port -
	3 B port -
	4 B port +

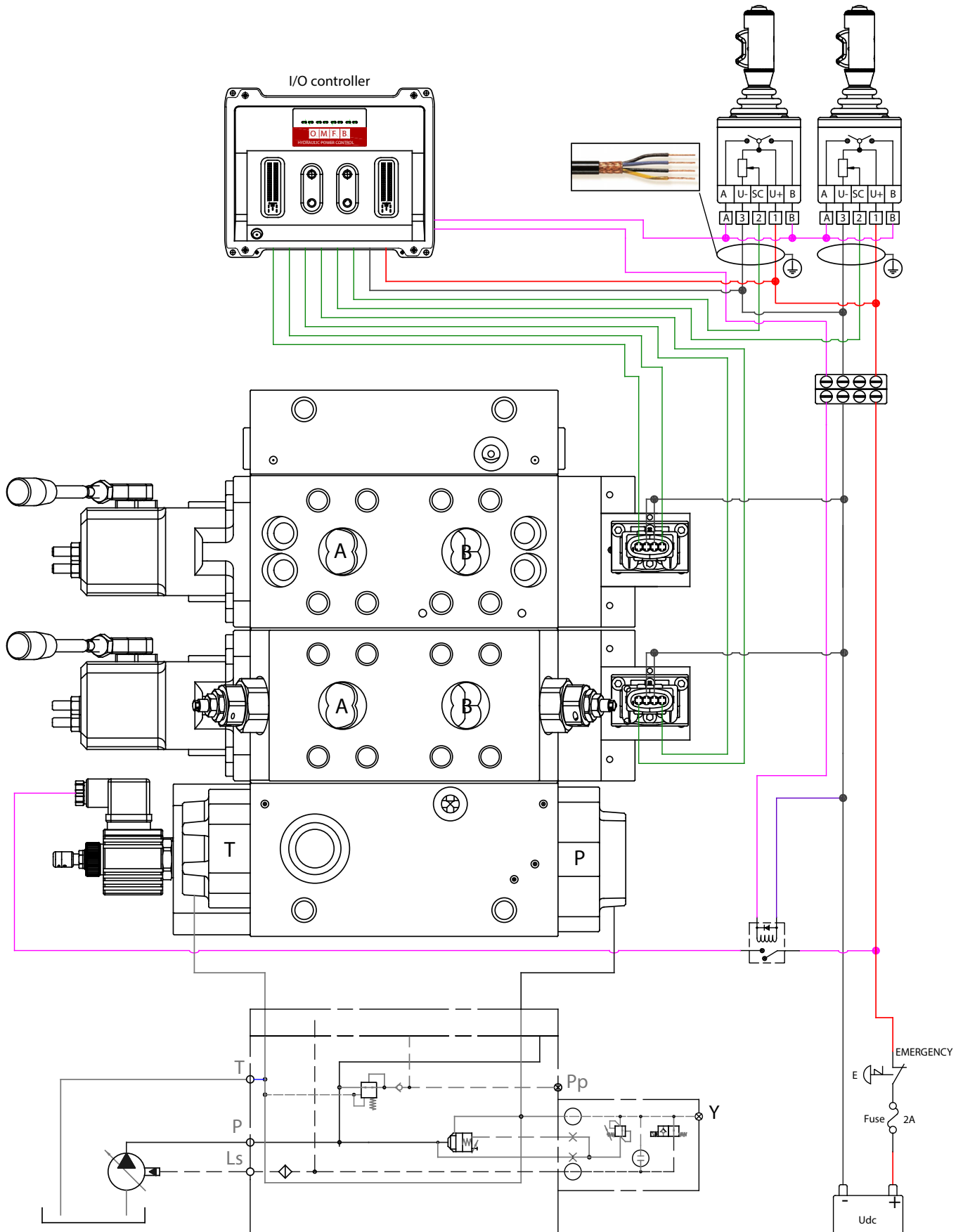


Connector version	Code numbers			
	12 V		24 V	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
AMP Junior timer 4 Pin	PEAP0312002	PEAP1312002	PEAP0412002	PEAP1412002

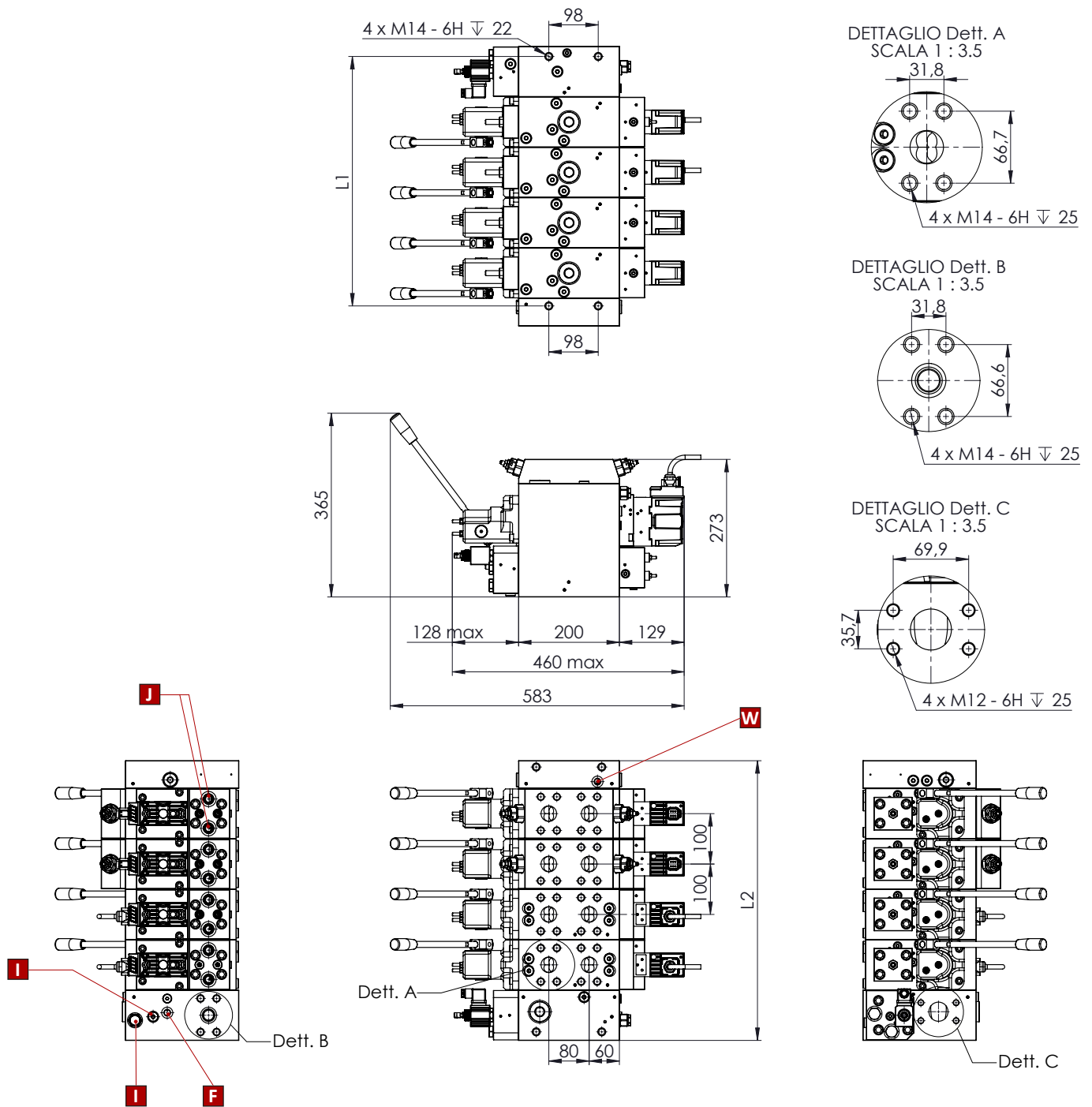
PDV315 - PEAP3 Electro-hydraulic proportional actuation
Electrical wiring with OMFB I/O controller - Current input signal for PWM or supply voltage for ON/OFF control



PDV315 - PEAP3 Electro-hydraulic proportional actuation
Electrical wiring with OMFB I/O controller - Current input signal for PWM or supply voltage for ON/OFF control



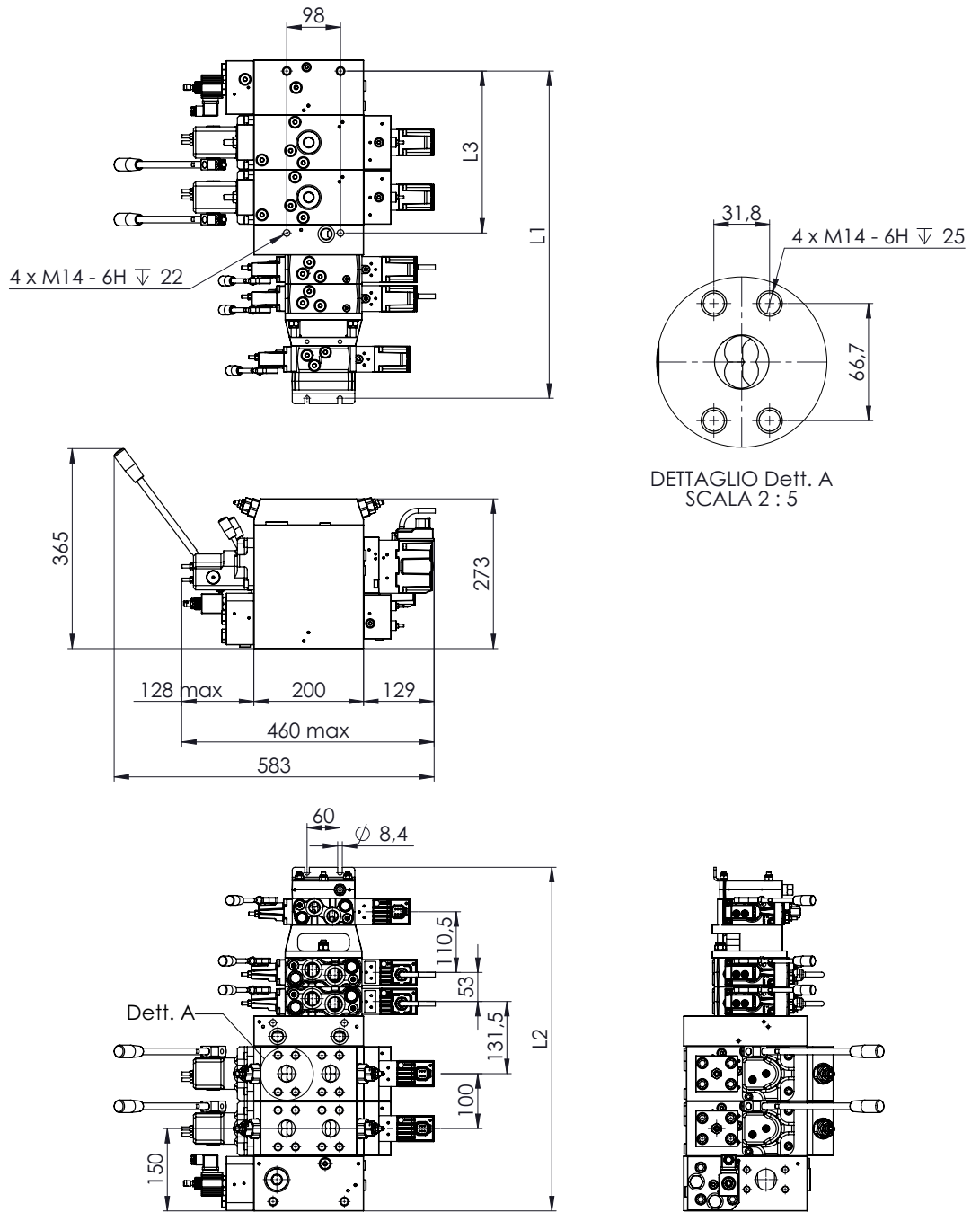
PDV315 Proportional valve
Overall dimensions drawing with standard inlet section
Right assembly version



PDW		1	2	3	4	5	6	7	8	9	10	11	12
L1	mm	180	228	276	324	372	420	468	516	564	612	660	708
	in	7,09	8,98	10,87	12,76	14,65	16,54	18,43	20,31	22,20	24,09	25,98	27,87
L2	mm	200	248	296	344	392	440	488	536	584	632	680	728
	in	7,87	9,76	11,65	13,54	15,43	17,32	19,21	21,10	22,99	24,88	26,77	28,66

- A** = Pump side port - 3/4" BSPP - 17 mm deep [1 1/16 in 12 UN-2B - 0,67 in deep]
B = T port - 3/4" BSPP - 17 mm deep [1 1/16 in 12 UN - 2B - 0,67 in deep]
C = Main pressure relief valve
D = Main pressure reducing valve
E = Pump pressure gauge connection - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
F = LS connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
G = External pilot pressure supply connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
H = External feeding main pressure reducing valve 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
I = Tank pressure gauge connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
J = Electrical LS/pump unloading function
K = Pump unloading drain port, 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
L = Pump unloading mechanical override
M = A-B port mechanical flow adjustment
N = LSA
O = LSB } remote pilot pressure connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
P = LS }
Q = Port A } 1/2" BSPP - 17 mm deep [7/8 in-14 UNF-2B - 0,67 in deep]
R = Port B }
S = LSB } pilot pressure relief valve
T = LSA }
U = Shock/suction valve B port
V = Shock/suction valve A port
W = External drain connection electric actuations - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]

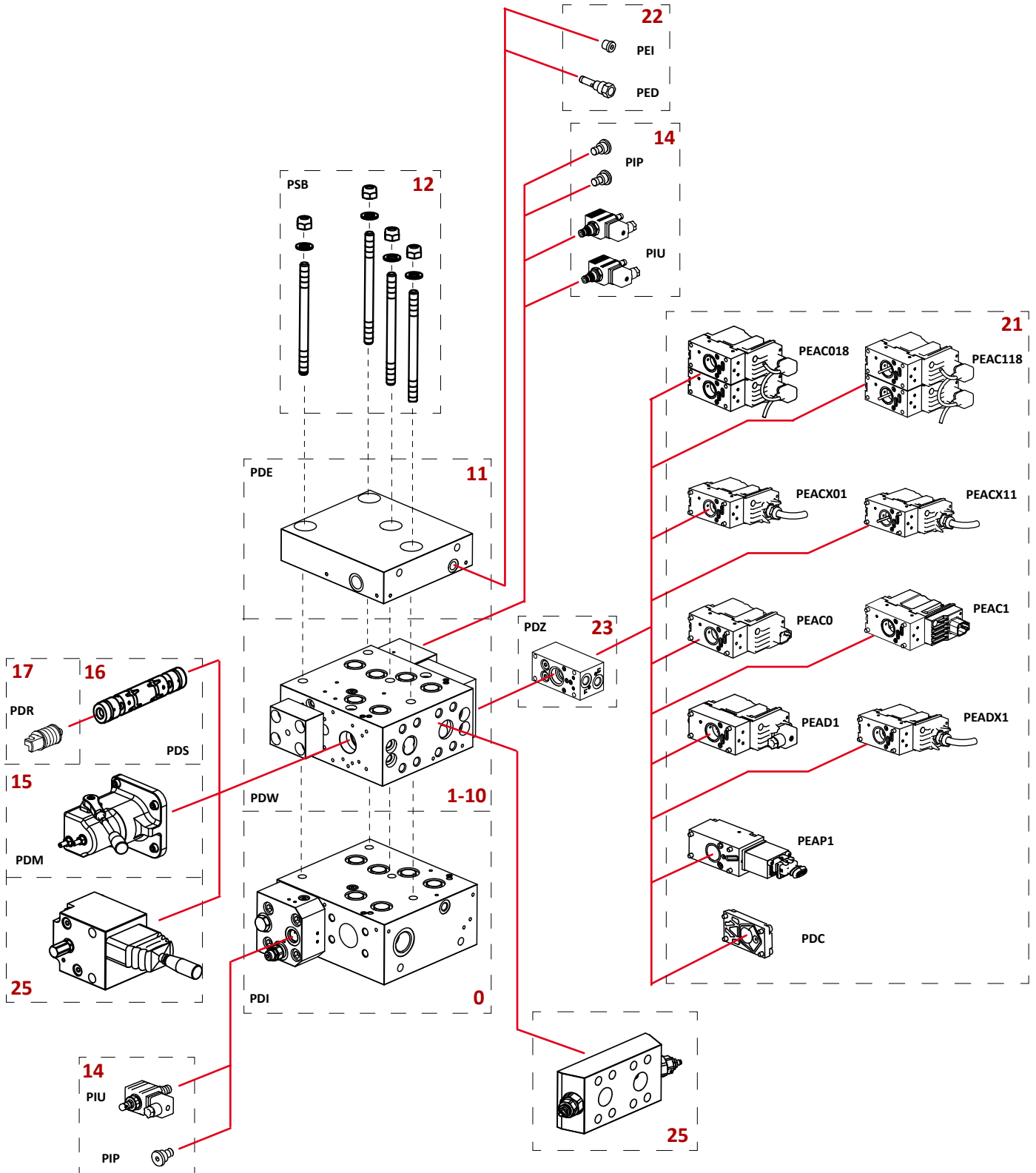
PDV315 Proportional valve
Overall dimensions drawing with double inlet
and MID end section



PDW		2	3	4	5	6	7	8	9	10	11	12
L1	mm	331	379	427	475	523	571	619	667	715	763	811
	in	13,03	14,92	16,81	18,70	20,59	22,48	24,37	26,26	28,15	30,04	31,93
L2	mm	351	399	447	495	543	591	639	687	735	783	831
	in	13,82	15,71	17,60	19,49	21,38	23,27	25,16	27,05	28,94	30,83	32,72

- A** = Pump side port - 3/4" BSPP - 17 mm deep [1 1/16 in 12 UN-2B - 0,67 in deep]
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P = LS }
Q = Port A } 1/2" BSPP - 17 mm deep [7/8 in-14 UNF-2B - 0,67 in deep]
R = Port B }
S = LSB } pilot pressure relief valve
T = LSA }
U = Shock/suction valve B port
V = Shock/suction valve A port
W = External drain connection electric actuations - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]

PDV315 Proportional Valve PDV Standard configuration



Reference field	Description		Code numbers see pag
0	Inlet sections	Open centre	PDI
		Closed centre	
1-10	Working sections	with pressure compensator	PDW
		without pressure compensator	
11	End sections		PDE
12	Stay bolt set		PSB
14	Solenoid Ls unloading		PIU
	Plug for LS unloading cavity		PIP
15	Mechanical actuation		PDM
16	Spool		PDS
17	Spool centered set		PDR
21	Proportional electro-hydraulic actuations	Open loop spool control current signal for PWM and ON-OFF control	PEAD1
		Open loop spool control high resolution	PEAC0
		Closed loop spool control high performance resolution	PEAC1
		Open loop spool control high resolution CAN-Bus	PEAC018
		Closed loop spool control high performance resolution CAN-Bus	PEAC118
		Open loop spool control high resolution ATEX	PEACX01
		Closed loop spool control high performance resolution ATEX version	PEACX11
		Open loop spool control current signal for PWM and ON-OFF control ATEX version	PEADX1
		Open loop spool control current input signal for PWM and ON-OFF control - AMP JPT 4 pin	PEAP1
	Rear cover for	Hydraulic control	PDH
		Detent	PDD
		Friction detent	PDF
		Mechanical actuation	PDC
22	End sections	External drain line cartridge	PED
		Internal plug	PEI
23	Dual function control body		PDZ
25	Antishock body		

 HYDRAULIC POWER CONTROL		Code: PDV315			Customer:			
		Date: / /			Customer ref:			
		Review index: -			Issued by:			
		Review date: -			OMFB sales ref:			
I	Valve type:	PDV 315	V	Working sections Up:	8	IX	Rated voltage [V]:	12
II	Type of threads:	BSPP	VI	Working sections Down:		X	Certifications:	None
III	Type of inlet:	standard	VII	Inlet section side:	Right version	XI		
IV	Pump type:	Open Center	VIII	2 nd pump type:		XII	Pump flow [l/min]:	
0	Notes						Notes	
	B Port		0	bar			13	A Port
			23				14	
	Actuation side							Handle side
1	21		1	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
2	21		2	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
3	21		3	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
4	21		4	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
5	21		5	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
6	21		6	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
7	21		7	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
8	21		8	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
9	21		9	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
10	21		10	bar		bar	16	15
	17		20				20	
			19				19	
			18				23	
11			11				12	
			22					