



Bulletin HY11-5715-651/UK

Operation Manual Proportional Pressure Valves with integrated Electronics

RE06M*T Design ≥ 25

RE*M*T Design ≥ 45

RE*R*T Design ≥ 45

RE*E*T Design ≥ 20

R4V Design $\geq A$

R5V Design $\geq A$

R6V Design $\geq B$



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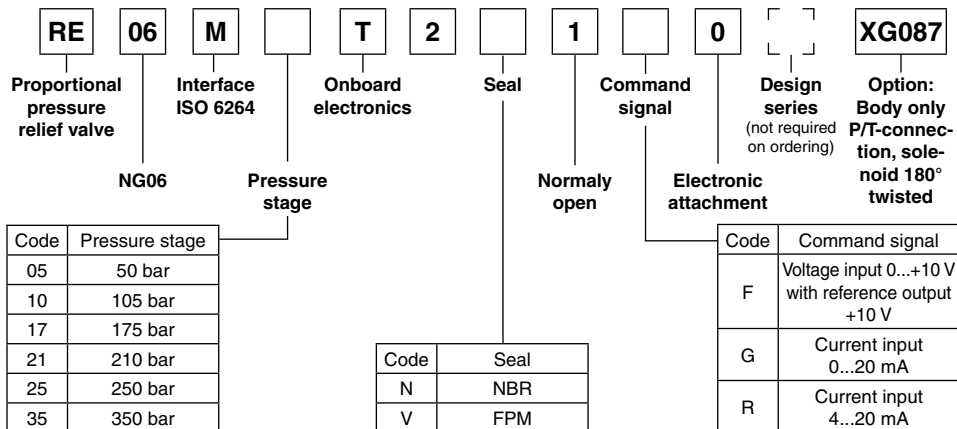
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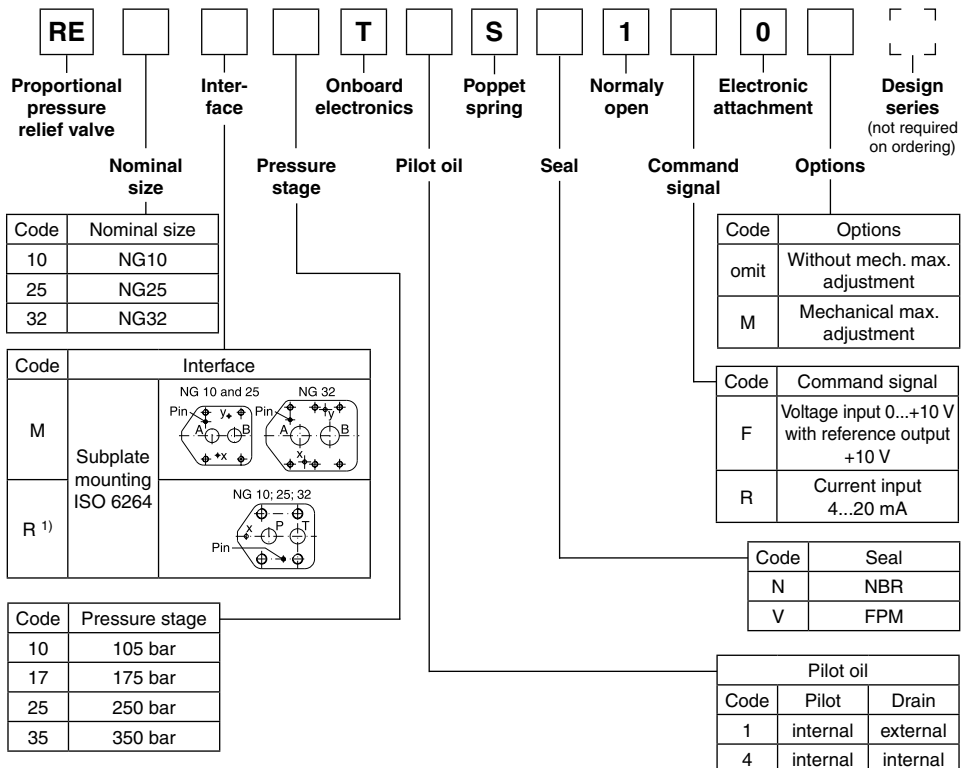
Operation Manual

1. Introduction

Ordering Code RE06M*T 2 1 0

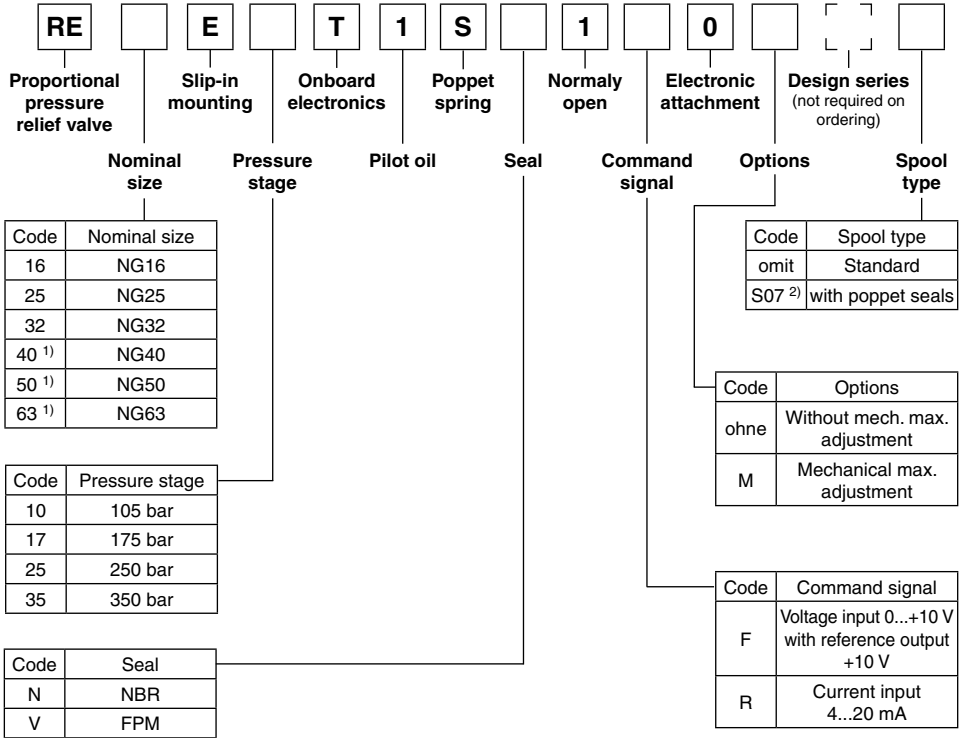


Ordering Code RE*T



¹⁾ external drain with pipe only

Ordering Code RE*E*T

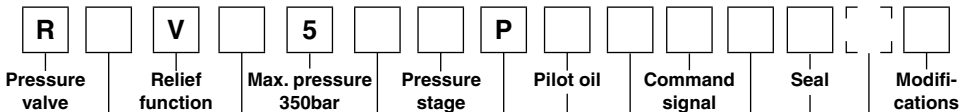


¹⁾ With poppet seal.

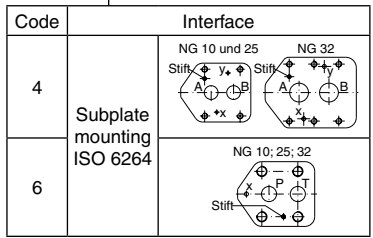
²⁾ Not for NG16

Operation Manual

Ordering Code R*V



Pressure valve Interface Relief function Nominal size Max. pressure 350bar Drain port Pressure stage Proportional pilot Options Design Seal Design series (not required on ordering) Modifications



Code	Nominal size
03	NG10
06	NG25
10	NG32

Pilot oil drain		
Code	Valve	Drain
3	R4V	Y-port at subplate
9	R6V	Y-port = G 1/8"

Code	Pressure stage ¹⁾
1	105 bar
3	210 bar
5	350 bar

Code	Seal
1	NBR
5	FPM

Code	Design series
A	R4V
B	R6V

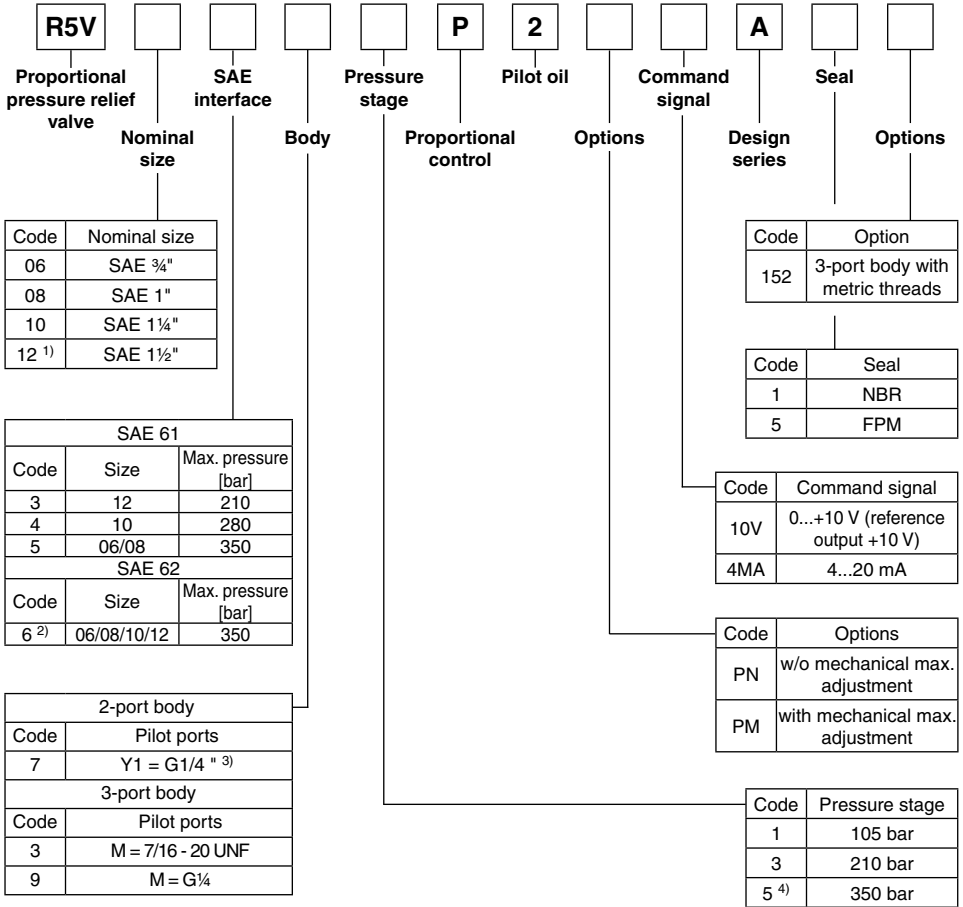
Code	Command signal
10V	0...+10 V (reference output +10 V)
4MA	4...20 mA

Code	Options
PN	Without mech. max. adjustment
PM ⁴⁾	Mechanical max. adjustment

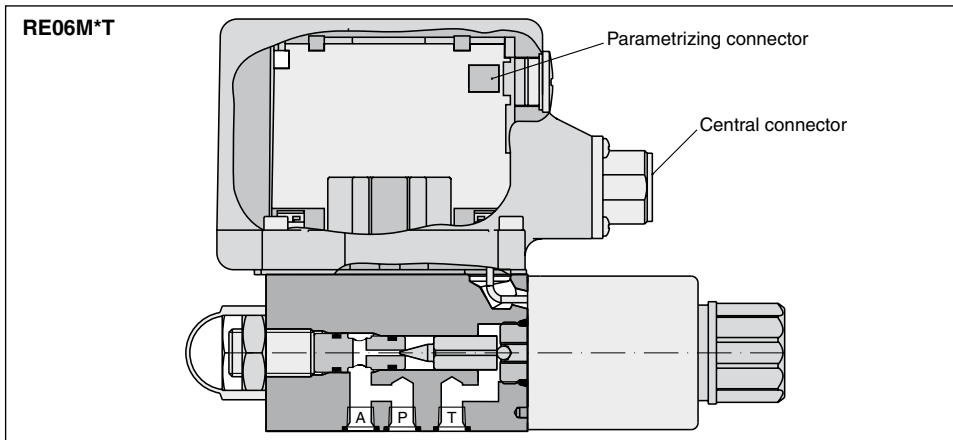
Pilot oil	
Code	Drain
0	internal
1 ²⁾	external from subplate
2 ³⁾	external from valve body (Y-port)

1) Other pressure stages on request
2) Only R4V
3) Only R6V
4) R4V: Adjustment with acorn nut

Ordering Code R5V



1) Only R5V 3port
 2) Only R5V 3port
 3) Y1 only available at external drain (pilot oil code 6).
 4) R5V10-4*5 up to 280 bar.



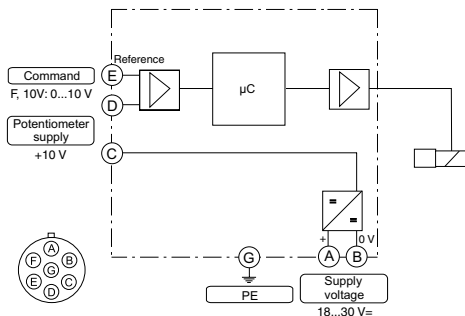
Parker R*V / RE*T pressure valves have an integral electronic and requires only one sole electrical common for the control system. Different flow sizes, as well as command signal options are available to achieve an optimal adaption for different applications.

Characteristics of Valve Driver

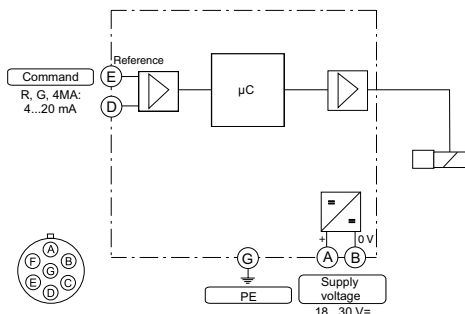
The described integral electronic driver combines all necessary functions for the optimal operation of the valve. The most important features are:

- digital circuit design
- high dynamic constant current solenoid control
- differential input stage with various command signal options
- two quadrant ramp function
- MIN adjustment for deadband compensation
- MAX adjustment to match the command signal span to the valve operating range
- optional reference outputs 10 V for potentiometer supply
- standard central connection
- compatible to the relevant European EMC-standards
- comfortable interface program

**Block diagram of integral electronics
Code F/10V**



Code G/R/4MA



Technical data

General			
Design			Pressure valve
Operation			Proportional solenoid
Mounting pattern			see ordering code
Installation position			any
Hysteresis		[%]	± 1.5 of p _{max}
Ambient temperature range		[°C]	-20...+60
MTTF _D value ¹⁾		[years]	RE06M*T: 150 RE*E*T, RE*M*T, RE*R*T, R4V, R5V, R6V: 50
Protection class			IP65 acc. to EN 60529
Vibration strength		[g]	10 sinus 5...2000 Hz acc. to IEC 68-2-6 30 noise 20...2000 Hz acc. to IEC 68-2-36 15 shock acc. to IEC 68-2-27
Hydraulic			
Fluid			Hydraulic oil according to DIN 51524
Viscosity, permitted		[cSt] / [mm ² /s]	20...400
recommended		[cSt] / [mm ² /s]	30...80
Fluid temperature		[°C]	-20...+70 (NBR: -25...+70)
Filtration			ISO 4406 (1999); 18/16/13
Operation pressure max.		[bar]	350 ports P, A (X); 30 ports T, B (Y) R5V: 350 ports A, B (for SAE61 size 10: 280, size 12: 210); 30 port Y1
Electrical			
Duty ratio ED		%	100
Supply voltage	U _b	VDC	18...30, ripple < 5 % eff., surge free
Current consumption max.		A	2.0
Pre-fusing		A	2.5 medium lag
Potentiometer supply	U _p	V	+10 / ±5 % max. 10 mA
Command signal	U _e	V	Code F/10V: 0...+10, ripple < 0.01 % eff., surge free, R _i = 100 kOhm
	I _e	mA	Code R/4MA: 4...20, ripple < 0.01 % eff., surge free, R _i = < 250 Ohm < 3.6 mA = enable off, > 3.8 mA = enable on (acc. NAMUR NE43)
		mA	Code G: 0...20, ripple < 0.01 % eff., surge free, R _i = < 250 Ohm
Differential input voltage max.		V	30 for terminal D and E against PE (terminal G)
		V	11 for terminal D and E against 0V (terminal B)
Adjustment ranges	Min	%	0...50
	Max	%	50...100
	Ramp	s	0...32.5
Interface			RS 232C, parametrizing connection 5polig
EMC			EN 61000-6-2, EN 61000-6-4
Central connection			6 + PE acc. EN 175201-804
Cable specification		mm ²	7 x 1.0 overall braid shield
Cable length max.		m	50

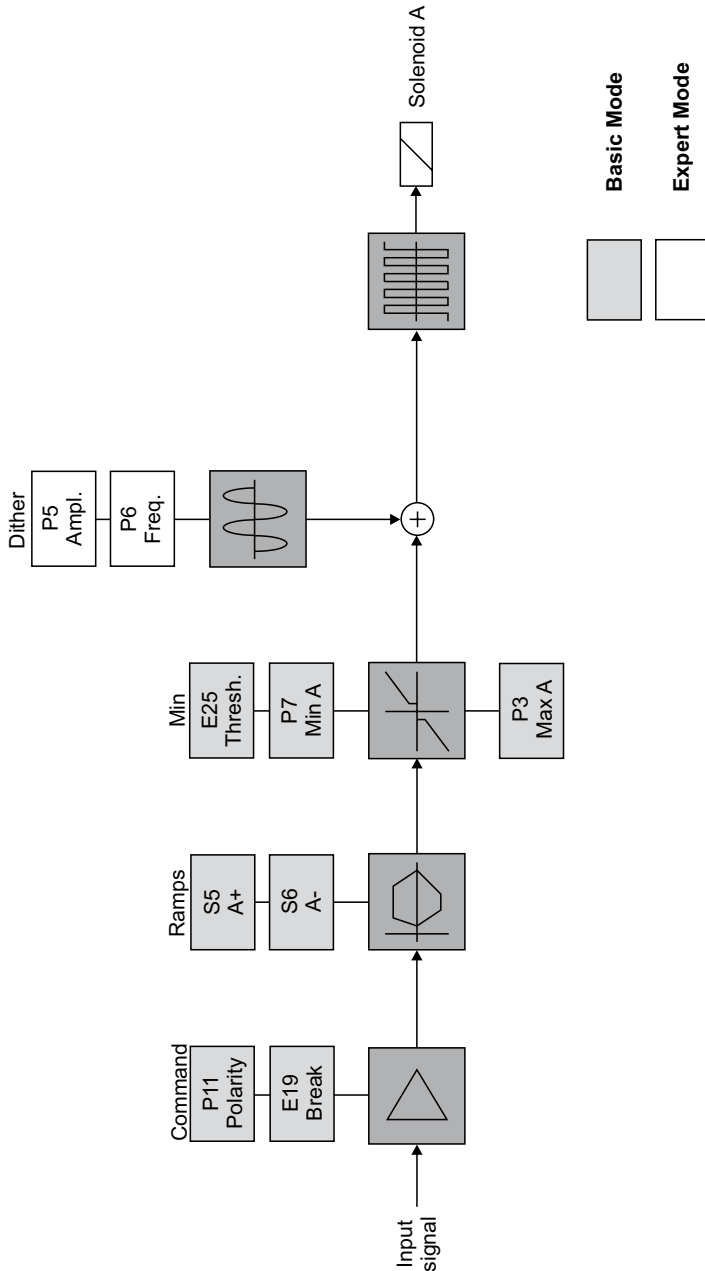
¹⁾ If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.

Name plate example



hydr. circuit symbol
order code

Signal flow diagram



2. Safety Instructions

Please read the operation manual before installation, startup, service, repair or stocking! Paying no attention may result in damaging the valve or incorporated system parts.

Symbols

This manual uses symbols which have to be followed accordingly:



Instructions with regard to the warranty



Instructions with regard to possible damaging of the valve or linked system components



Helpful additional instructions

Marking, Name Plates

Instructions applied on the valve, i.e. wiring diagrams and name plates, must be observed and maintained legibly.

Work at the Valve

Workings in the area of installation, commissioning, maintenance and repair of the valve may only be allowed by qualified personnel. This means persons which have, because of education, experience and instruction, sufficient knowledge on relevant directives and approved technical rules.

3. Important Details

Intended Usage

This operation manual is valid for proportional pressure valves RE06M*T / RE*M*T / RE*R*T / RE*E*T / R4V / R5V / R6V series. Any different or beyond it usage is deemed to be as not intended. The manufacturer is not liable for warranty claims resulting from this.

Common Instructions

We reserve the right for technical modifications of the described product. Illustrations and drawings within this manual are simplified representations. Due to further development, improvement and modification of the product the illustrations might not match precisely with the described valve. The technical specifications and dimensions are not binding. No claim may result out of it. Copyrights are reserved.

Liability

The manufacturer does not assume liability for damage due to the following failures:

- incorrect mounting / installation
- improper handling
- lack of maintenance
- operation outside the specifications



Do not disassemble the valve! In case of suspicion for a defect please return the valve to the factory.

Storage

In case of temporary storage the valve must be protected against contamination, atmospheric exposure and mechanical damages. Each valve has been factory tested with hydraulic oil, resulting in protection of the core parts against corrosion. Yet this protection is only ensured under the following conditions:

Storage period	Storage requirements
12 months	constant humidity < 60 % as well as constant temperature < 25 °C
6 months	varying humidity as well as varying temperature < 35 °C



Outdoor storage or within sea and tropical climate will lead to corrosion and might disable the valve!

4. Mounting / Installation

Scope of Supply


Please check immediately after receiving the valve, if the content is matching with the specified scope of supply. The delivery includes:

- valve
- operation manual

The central connector assembly as well as the parametrizing cable has to be ordered separately and are not included in the delivery.


 Please check the delivery immediately after receiving the shipment for apparent damages due to shipping. Report shipment losses at once to the carrier, the insurance company and the supplier!

Mounting

- Compare valve type (located on the name plate) with part list resp. circuit diagram.
- The valve may be mounted fix or movable in any direction.
- Verify the mounting surface for the valve. Unevenness of 0.01 mm/100 mm, surface finish of 6.3 µm are tolerable values.
-  Keep clean valve mounting surface and work environment!
- Remove protection plate from the valve mounting surface
- Check the proper position of the valve ports and the O-rings.
- Mounting bolts:
use property class ISO 4762-12.9
- Tighten the bolts crisscross with the following torque values acc. to table below

Available bolt kits


Valve type	Bolt dimensions	Torque value	Ordering number
RE06M*T	4 pcs. M5x30 mm	7.6 Nm	BK375
RE10M*T/R4V03	4 pcs. M10x35 mm	63 Nm	BK505
RE25M*T/R4V06	4 pcs. M10x45 mm	63 Nm	BK485
RE32M*T/R4V10	6 pcs. M10x45 mm	63 Nm	BK506
RE10R*T/R6V03	4 pcs. M12x45 mm	108 Nm	BK494
RE25R*T/R6V06	4 pcs. M16x70 mm	264 Nm	BK366
RE32R*T/R6V10	4 pcs. M18x75 mm	398 Nm	BK507
RE16E*T	4 pcs. M8x40 mm	31.8 Nm	BK414
RE25E*T	4 pcs. M12x50 mm	108 Nm	BK391
RE32E*T	4 pcs. M16x55 mm	264 Nm	BK415
RE40E*T	4 pcs. M20x70 mm	517 Nm	BK416
RE50E*T	4 pcs. M20x75 mm	517 Nm	BK417
RE63E*T	4 pcs. M30x100 mm	1775 Nm	BK418
R5V	*	*	*

 Insufficient condition of the valve mounting surface might create malfunction!
Incorrect mounting resp. bolt torque may result in abrupt leakage of hydraulic fluid on the valve ports.

* The dimension of the screws resp. tie rods depends on the used SAE flanges and on the number of SAE valves.

Operation Limits

The valve may be operated within the determined limits only. Please refer to the “technical data“ section as well as to the “characteristic curves“ in the catalog.

 Follow the environmental conditions! Unallowable temperatures, shock load, aggressive chemicals exposure, radiation exposure, illegal electromagnetic emissions may result in operating trouble and may lead to failure!
Follow the operating limits listed in the “specifications“ table!

Pressure Fluids

The following rules apply for the operation with various pressure fluids:



This information serves for orientation and does not substitute user tests among the particular operating conditions. Particularly no liability for media compatibility may be derived out of it.

Mineral oil: usable without restriction.

For operation with the following pressure fluids

HFA	oil-in-water emulsion
HFB	water-in-oil emulsion
HFC	aqueous solution (glycols)
HFD	anhydrous fluids (Phosphor-Ester)

please consult Parker:



For detailed information concerning pressure fluids note VDMA-document 24317 as well as DIN 51524 & 51502.

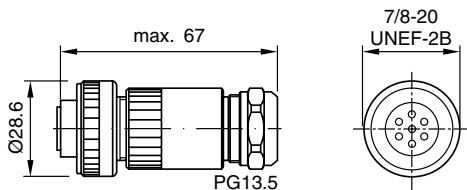
Special gaskets may be available depending on the utilized fluid.

In case of insecurity please consult Parker.

Electrical Connection

The electrical connection of the valve takes place by one common cable, which is coupled to the integrated electronic driver by a central connector assembly.

The connection requires a 6 + PE female connector EN 175201-804.



☞ The female connector has to be ordered separately under article nr. 5004072.

⚠ A female connector with metal housing is required! Plastic made models may create function problems due to insufficient EMC-characteristics.

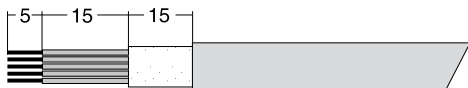
The connecting cable has to comply to the following specification:

Cable type	control cable, flexible, 7 conductors, overall braid shield
Cross section	min. AWG16/1.0 mm ²
Outer dimension	8...12 mm
Cable length	max. 50 m

☞ For cable lengths > 50 m consult factory.

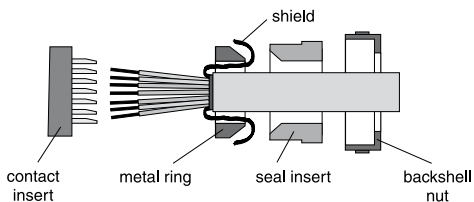
The connection cable is coupled to the female connector by solder joints.

Stripping lengths for the connecting cable:



⚠ Do not disconnect cable socket under tension!

The shielding has to be assembled according to the outline below:



The backshell nut of the cable gland has to be tightened with a suitable tool. The target value for the tightening torque is 4 Nm. Tighten the cap nut with a torque of approx. 5 Nm after attaching the female connector on the socket outlet.

⚠ Incomplete tightening of backshell nut resp. cap nut may result in automatic release of the connection as well as degradation of the water tightness.
Follow the "instructions for use" for installation of female connectors made by other kind of brands!


⚠ The cable connection to the female connector has to take place by qualified personnel! A short between individual conductors resp. to the connector housing, bad soldering as well as improper shield connection may result in malfunction and breakdown of the valve.


⚠ The mounting surface of the valve has to be tied to the earth grounded machine frame. The earth ground wire from the valve connecting cable as well as the cable shield have to be tied to the protective earth terminal within the control unit. It is necessary to use a low ohmic potential connection between control unit and machine frame to prevent earth loops (cross section AWG 6).


Electrical Interfacing


Supply Voltage:

The supply voltage for the valve has to cover the range of 18...30 V. The residual ripple may not exceed 5 % eff.

 The applied power supply must comply to the relevant regulations (DIN EN 61558) and must carry a CE-mark. The operating voltage for the valve must be free of inductive surges. Do not exceed the max. value of 30V! Non-observance of this rule may result in permanent damaging of the valve.

 The increased inrush current of the valve should be considered when selecting the power supply. A stabilized power supply with overcurrent limiting feature should not be used. Due to the inrush current of the valve the current limit circuit may respond prematurely and create problems during energizing of the supply voltage.


 The operation of the valve is blocked if the supply voltage polarity is interchanged.


 Each valve requires a separate pre-fuse (rating: s. techn. data). Non-observance of this instruction may create irreparable damage of valve resp. incorporated system parts.


Command signal input:

The solenoid current behaves proportional to the command signal amplitude.

Details are shown from the technical specifications.

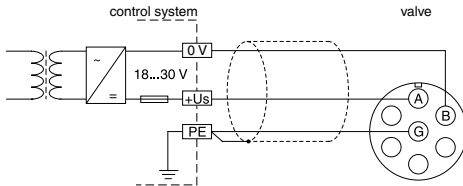
 The command input signal needs to be filtered as well as free of inductive surges and modulations. Due to the sensitivity of the valve a high signal quality is recommended, this will prevent malfunction.

 Incorrect signal amplitude levels may disturb the functionality and can damage the valve.

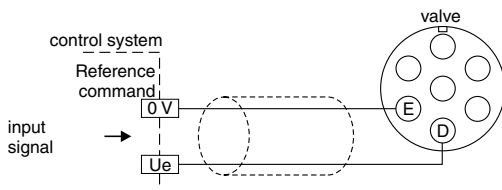
 The option 4...20 mA uses the "0 mA" condition as breakdown-information. This means the presence of an evaluable failure information if the input signal line is interrupted. In this case the actuator drive will be switched off. The drive will switch on when the input signal reaches a value of 3.8 mA, it switches off when the command falls below 3.6 mA. This determination follows the NAMUR-specification NE43.

NAMUR is an association of users of process control technology.

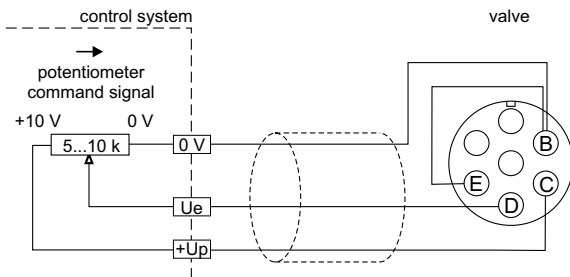
Wiring diagram of supply voltage



Wiring diagram of voltage command input 0...+10 V code F/10V

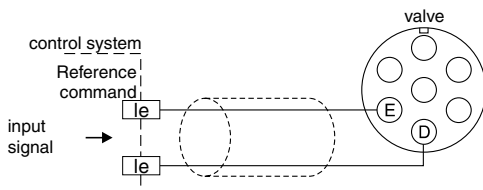


Wiring diagram of voltage command input 0...+10 V via potentiometer code F/10V

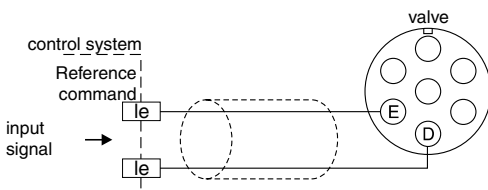


⚠ The external potentiometer is fed via the output “potentiometer supply”. To prevent this output from overload, the resistance value of the potentiometer should be within a range of 5...10 kOhm. A nominal power rating of 0.1 W is sufficient.

Wiring diagram of current command input 0...20 mA code G



Wiring diagram of current command input 4...20 mA code R/4MA



5. Operating Instructions

Basically the valve performs the task of converting a command signal into a proportional spool stroke with the highest possible dynamic. For these purposes the input value will be electronically processed and provides via a power amplifier stage the required current for the valve solenoid.


ProPxD parameterizing software

The ProPxD software permits comfortable parameter setting for the module electronic. Via the clearly arranged entry mask the parameters can be noticed and modified. Storage of complete parameter sets is possible as well as printout or record as a text file for further documentation.


The PC software can be downloaded free of charge at www.parker.com/euro_hcd – see page “Support” or directly at www.parker.com/propxd.

Hardware requirements

- PC with operating system from Windows® XP upwards
- Interface RS232C
- display resolution min. 800 x 600
- connection cable between PC and electronic module
- storage requirement approx. 40 MB

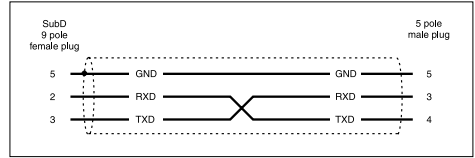
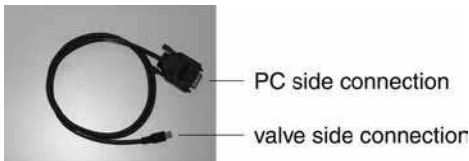
 If your PC has no serial interface according to RS232C standard you require in addition an USB-RS232C adapter.

Cable Specification

 Attention! The valve electronic provides no USB interface, but can only be parameterized via an RS232C - connection. Therefore the usage of USB standard cables is not allowed and may result in damaging of valve resp. PC.

Parametrizing cable

Ordering code: 40982923



cover plug
parametrizing connection



The cover plug has to be re-installed after completion of the parameterizing work.

Program installation

Please check before installation if the above hardware requirements are met. If your PC has already stored an older version of the “ProPxD” program, it has to be deinstalled by using the Windows® - system control feature.

Program installation sequence:

- terminate the execution of other programs
- execute the file “setup.exe”
- follow the instructions on the screen

Answer the question, if an older version should be overwritten, with “ok”. During the installation you may change destination drive resp. installation path, if needed.

Please answer also “ok” if at the end of the installation the program reports any system information. After successful installation the desktop display shows the ProPxD icon for starting the program.

Software Operating

Brief instruction for first startup:

- Connect the valve electronic to the supply voltage.
- Connect the valve electronic to a PC via the parametrizing cable.
- Start the operating program.
- After displaying the program resp. data base version a program window opens and the connected valve will be automatically identified (possibly a manual identification via the button "Receive all" is necessary).
- Select the desired version via the menu "Options/Optionen" with the menu item "Language/Sprache".
- The valve specific default parameters are already available within the parameter table.
- Parameter changes are possible via mouse or the arrow buttons on the bottom left within the program screen, also the parameter values may be edited via the keyboard.
- Modified parameters will be stored via the "Enter" key or via the button "Update list".
- Parameters have to be nonvolatile stored on the valve via the button "save parameter".
- The chosen parameters may be optionally stored on the PC via the "File"-menu with the menu item "Save as", data retrieving is always possible via the function "Load file"

Extended functions:

The user software is shared into 2 parameter ranges:

- basic mode
- expert mode

For normal startup the basic mode is sufficient. It permits the setting of all application specific parameters to match the valve function with the task setting.

In case of special applications the valve parameters may be adapted via the expert mode. The operating mode may be selected from the "Options"- menu and remains after terminating and re-start of the program.



Changing of expert parameters is only permitted for qualified personnel. Incorrect settings may lead to malfunction! In case of parameter changes shut the drive down!

To prevent an unauthorized access for the expert mode, a pass word is requested. The name is "parker" and cannot be changed. Thus additionally to the button "Default" for loading of the default parameters, the button "Send parameter" appears in the "Expert"-operating mode. This button transmits only the setting of one single parameter to the connected valve. Thus a quick tuning of single parameters is permitted during the setup.



A horizontal bar graph readout between the communication buttons shows the data transfer state.



Because the ProPxD program has also without connection to the valve functionality, a manual pre-selection of the parameters is possible. After selection of the valve type via the menu "Options" the parameters may be set and stored for later transmission.

Note the design series while selection of the valve!

The "File" menu provides the functions "Printer setup", "Print preview" and "Print". The print preview includes the option for parameter set storage as text file (format.txt) prior to further processing. The "Options" menu provides also the selection of the RS232C interface port via the menu item "Port". Via the menu item "Load file" previously stored parameter sets may be loaded.

Adjustment parameters

The available parameters may be divided into multiple groups and are characterized by different letters:

S-parameters

P-parameters

J-parameters

Parameter overview for basic mode

Parameter	Description	Unit	Parameter range		Default setting	Comment
			from	up to		
S5	ramp accel. channel A	ms	0	32500	0	
S6	ramp decel. channel A	ms	0	32500	0	
P3	MAX channel A	%	50.0	100.0	100.0	
P7	MIN channel A	%	0.0	50.0	0.0	
P11	polarity command	-	0	1	0	
E19	cable break detection command	-	0	1	0	Codes R/S/4MA only
E25	MIN operating threshold	-	0 = 1%		0 = 1%	
			1 = 0.01%			

Individual description of basic parameters

S5 ramp accel. channel A	Adjustment of ramp rate for increasing of the positive signal polarity. To avoid switching noise.
S6 ramp decel. channel A	Adjustment of ramp rate for decreasing of the positive signal polarity. To avoid switching noise.
P3 MAX +	Adjustment of maximum signal span for positive output signal. To match the command signal span to the valve operating range.
P7 MIN +	Adjustment for positive output signal step at 0,1% command signal. To compensate for the operate threshold of the valve function.
P11 command signal polarity	Adjustment of the command signal polarity. To match the command signal polarity to the valve function.
E19 cable break detection command	Adjustment of the operating mode for the command cable break detection. To turn on resp. off of the cable break detection of the command signal at a selected command signal option of 4...20 mA.
E25 MIN operating threshold	Adjustment of the MIN operating threshold. To match the response sensitivity for the MIN-stroke step.

Parameter overview for expert mode

Parameter	Description	Unit	Parameter Range		Default Setting	Comment
			from	up to		
P5	dither amplitude	%	0	10.0	depending on valve type	
P6	dither frequency	Hz	0	300	depending on valve type	

Individual description of expert parameters

P5 dither amplitude	Adjustment of dither amplitude. To reduce the influence of solenoid friction.
P6 dither frequency	Adjustment of dither frequency. To match the dither signal to the valve dynamic.

Error messages

Malfunctions when using the ProPxD software program will be indicated via appropriate failure messages.

Failure messages and corrective actions:

Failure message	Description/corrective action
The Com Port is not available!	Terminate the other program, or quit the message and select another RS232C port via the menu "Options > Port". Afterwards reconnect the parametrizing cable.
Unable to open COM port	Com port is not available. Quit the message and select another RS232C port via the menu "Options > Port". Afterwards reconnect the parametrizing cable.
There is no module/valve connected or the communication is disturbed! Please check also the interface!	No data exchange possible. Either the electronic has been removed, the port is mismatched, or the connection will be disturbed by strong electrical fields. Check if the Com port is set for "9600, 8, 1. none, none" via the menu "Options > Port".
Wrong password	Retype the password, notice the exact spelling (case sensitivity).
Wrong input	An unvalid character or a value outside the permitted range has been used at parameter entry.
Keep the entered parameters?	During parameter loading from the electronics memory the preset parameters from the left hand screen display may be rejected or maintained.
The chosen module/valve isn't the same as the connected hardware. Attention! Unsaved parameters will be lost.	In principle, parameters dedicated to a type which deviates from the connected valve may be edited. However, for data transmitting the correct valve has to be connected. If parameters will be loaded from a valve which deviates from the selected one, the parameters from the left hand side screen display of the program will be overwritten.
The chosen hardware isn't the same as the connected module/valve.	The wrong valve type has been selected from the database, afterwards the function "send all" has been executed.
Attention! Factory settings will be changed! Transmit anyhow?	Default parameters has been read out from the database instead from the valve via the function "receive all".
file name.pxd already exists. Do you want to replace the file?	The file name already exists within the indicated directory. Select another name, another directory or overwrite the existing file with "OK".

Air Bleeding of Hydraulic System

During initial startup, after an oil change as well as after the opening of lines or valves the hydraulic system must be air bled.

Filter

The function and lifetime of the valve are strongly affected by the cleanliness of the fluid.

purity level class of 18/16/13 acc. ISO4406 is required.

Flushing

It is recommended to flush the pipelines by short circuiting the pressure and return lines. This prevents the installation dirt from entering the valve.

6. Trouble Shooting

Basis of troubleshooting is always a systematic approach.



For suspect of a sluggish spool the valve may be flushed with clean pressure fluid.



Troubleshooting in a hydraulic system requires detailed knowledge about function and construction of the system. Therefore the work may exclusively be performed by qualified personnel.

malfunction at hydraulic load runtime					
				- generally no function	
				- high frequent oscillation	
				- low frequent oscillation	
				- pressure at unchanging command	
				- pressure too low	
				- drifting without command	
				possible reasons for malfunction	corrective actions
x				hydraulic pump resp. motor defective	replace hydraulic pump resp. motor
x	x	x	x	drive overloaded	reduce pressure resp. speed, increase valve size
x	x	x	x	valve contaminated	clean pressure fluid, filter / flush valve
		x	x	hydraulic fluid too viscous / too cold	change fluid grade, provide operational temperature
x	x			too low oil level within tank	refill pressure fluid
		x	x	filter contaminated	replace filter
x	x	x	x	supply voltage too low	keep supply voltage range
	x			supply voltage carries too much ripple	reduce ripple
x			x	command signal too low	increase command signal
	x			command signal carries too much ripple	reduce ripple
	x			dither signal amplitude too high	reduce parameter P5
		x		dither signal amplitude too low	increase parameter P5
x	x	x	x	central connector contact failure	clean contacts resp. replace connector
x				feed cable interrupted	fix feed cable
x	x	x	x	wiring sequence incorrect	correct wiring sequence
	x			feed cable without shielding	change cable grade

7. Accessories / Spare Parts

Accessories

The following accessories are available for the valves series:
female connector 6+PE ordering code 5004072
Bolt kits: see table on page 11.

Spare parts / seal kits

Valve type	NBR	FPM
RE06M*T	SK-RE06MTN	SK-RE06MTV
R4V03	S26-58507-0 ¹⁾	S26-58507-5 ¹⁾
R4V06	S26-58475-0 ¹⁾	S26-58475-5 ¹⁾
R4V10	S26-58508-0 ¹⁾	S26-58508-5 ¹⁾
R6V03	S26-98589-0	S26-98589-5
R6V06	S26-96396-0	S26-96396-5
R6V10	S26-96392-0	S26-96392-5
RE16E*T	SK-RE16EN	SK-RE16EV
RE25E*T	SK-RE25EN	SK-RE25EV
RE32E*T	SK-RE32EN	SK-RE32EV
RE40E*T	SK-RE40EN	SK-RE40EV
RE50E*T	SK-RE50EN	SK-RE50EV
RE63E*T	SK-RE63EN	SK-RE63EV
R5V06	S16-91850-0	S16-91850-5
R5V08	S16-91851-0	S16-91851-5
R5V10	S16-91852-0	S16-91852-5
R5V12	S26-27421-0	S16-27421-5

¹⁾ Please combine seal kit of one size with seal kit of proportional section P2 for complete seal kit.
NBR: S26-58473-0, FPM: S26-58473-5.

Please direct technical product enquiries to:

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