

# Type of connectors ONP-VS-53, ONP-VS-54, OKP-VS-68



## Application

Application they are used in radio electronic and radio engineering equipment as connectors of the general type

## Standarts

OST V 11 0121-91  
NSHCHO.364.040 Specification

## Design description

- cut in type
- combination type: radio frequency (RCH) and low frequency (NCH) contacts
- climatic version V
- coding element
- removable contacts
- contacts plating: radio frequency (RCH)-silver, low frequency (NCH) - gold
- mounting method: soldering, crimping
- dust-spray proof at the housings joints

## Characteristics

### Mechanical

- vibration:
- frequency range, Hz - 1...2000
  - acceleration,  $m/s^2$  - 200 (20g)
- single impact:
- acceleration,  $m/s^2$  - 10000 (1000g)
- multiple impacts:
- acceleration,  $m/s^2$  - 1500 (150g)
- linear loads:
- acceleration,  $m/s^2$  - 1000 (100g)

- operating current, not more than:
- low frequency contacts :
    - Ø 0,8 - 1 A
    - Ø 1,5 - 7 A
  - electric contact resistance, not more than
  - low frequency contacts:
    - Ø 0,8 - 5 mOhm
    - Ø 1,5 - 2,5 mOhm
  - radio frequency contacts:
    - Ø 0,6 - 10 mOhm
    - housing-housing - 10 mOhm

- insulation resistance in normal climatic conditions, not less than
- low frequency - 5000 MOhm
  - radio frequency - 1000 MOhm

### Reliability requirements

- minimum operating time, h  
10000
- with mate -unmate operations  
500
- minimum storage life  
20 years

### Climatic

- ambient air temperature,  
from minus 60 - to plus 100°C
- temperature change,  
from minus 60 - to plus 120°C  
(taking in the account the temperature of contacts overheat)
- decrease of atmospheric pressure operating,  
Pa (mm.Hg)  
 $1,3 \times 10^4 (10^{-6})$

### Electric

- maximum operating direct current voltage  
not more than:
- between any adjacent low frequency contacts as well as the housing of the mated connector and any low frequency contact - 250 V
- radio frequency contact - 100V

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Designation									
	ONP-VS-53-	106/	46x37-	V	34-	2-	1-	N- X-	V
Type									
ONP-VS-53- single row connector									
ONP-VS-54- double row connector									
OKP-VS-68 - double row connector with radio frequency contacts									
Number of contacts (ref. table 2)									
Conventional dimension of plug (socket, hybrid)									
Type of contact: V - plug (male connector) R - socket (female connector), G-hybrid (male con- nector and female connector)									
Design version: Fixed connector(socket, hybrid) 21 - without backshell Cable connector(plug, hybrid) 34 - without backshell 35 - with straight open type backshell									
Version of low frequency contacts $\varnothing 0,8$ mm as to mounting method: 1- soldering, 2- crimping									
Number of radio frequency contact depending on connected cable, only for contact location diagram 3 (ref. table 1)									
Additional designation for plugs without local protection of contacts wiring tails Additional designation at return installation of the scheme of an arrangement of contacts									
Universal climatic version									

### Designation while placing the order:

Plug ONP-VS-53-106/ 46x37-V34-2-N-V NSHCH0.364.075 Specification  
 Hybrid ONP-VS-53-84/ 46x37-G34-2-V NSHCH0.364.075 Specification  
 Socket ONP-VS-54-212/ 44x64-R21-2-V NSHCH0.364.075 Specification  
 Hybrid OKP-VS-68-116/ 46x64-G34-2/1-V NSHCH0.364.075 Specification  
 Hybrid ONP-VS-54-190/46x64-G35-2-X-V NSHCH0.364.075 Specification

Table 1

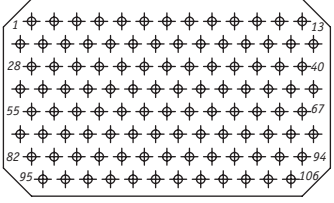
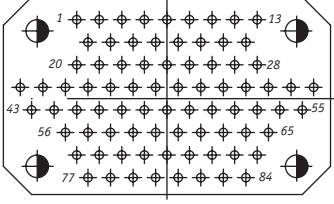
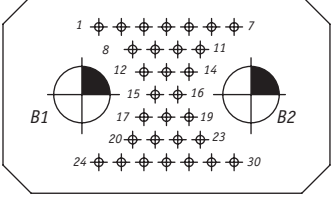
Number radio frequency contacts	Nut outlet diameter, mm
1	2,6
2	4,0
3	4,3

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## Contacts location diagrams

Table 2

Diagram No	Contact location diagram	Total number of contacts	Number of contacts		
			Ø 0,8 mm	Ø 1,5 mm	P4
1		106	106	-	-
2		84	80	4	-
3		32	30	-	2

Design and dimensions of the connectors are shown in the figures 1-14

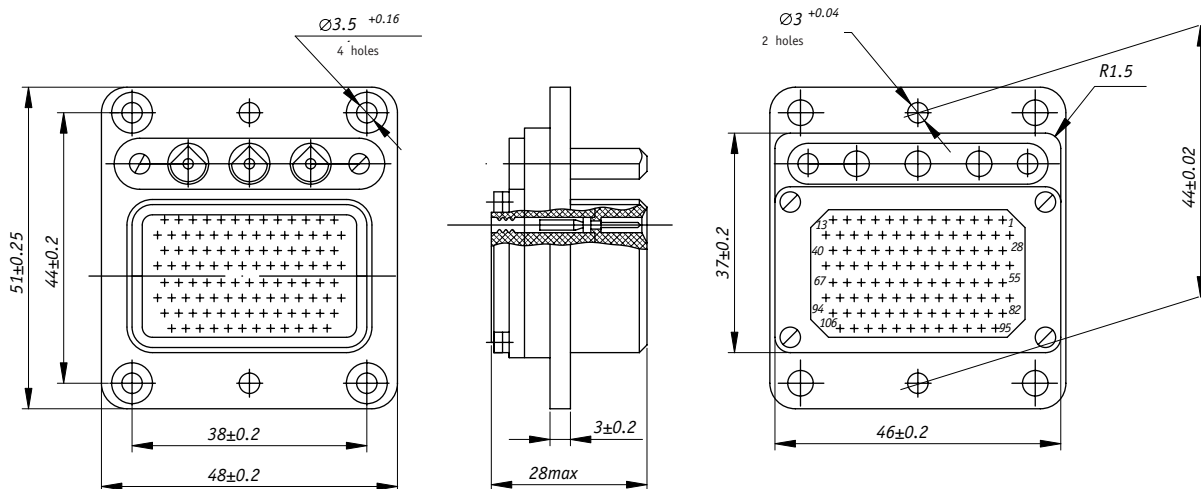


Figure 1 - Cable portion of the single row connector ONP-VS-53

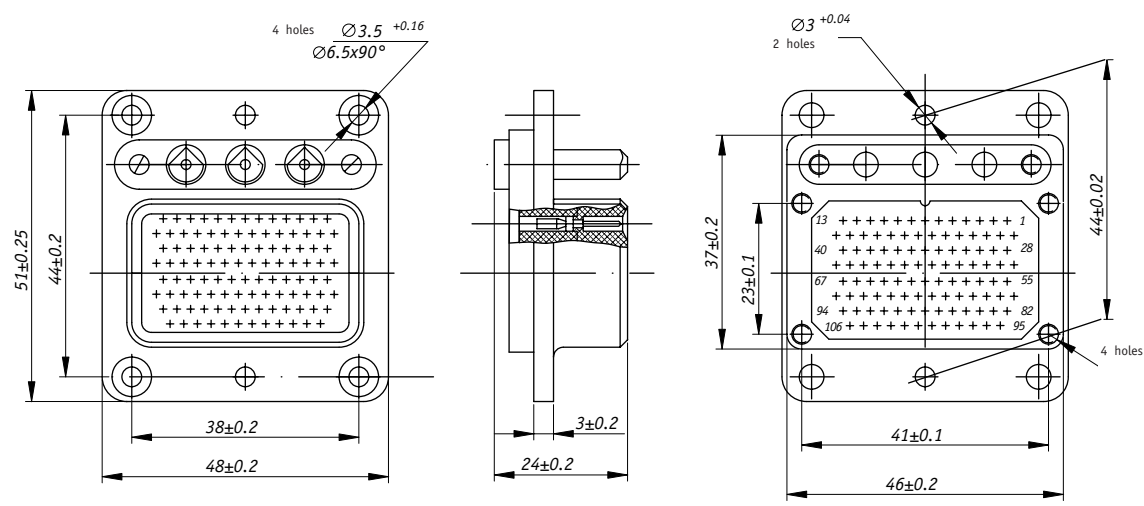


Figure 2 - Cable portion of the single row connector ONP-VS-53 without local protection of the contacts wiring tails

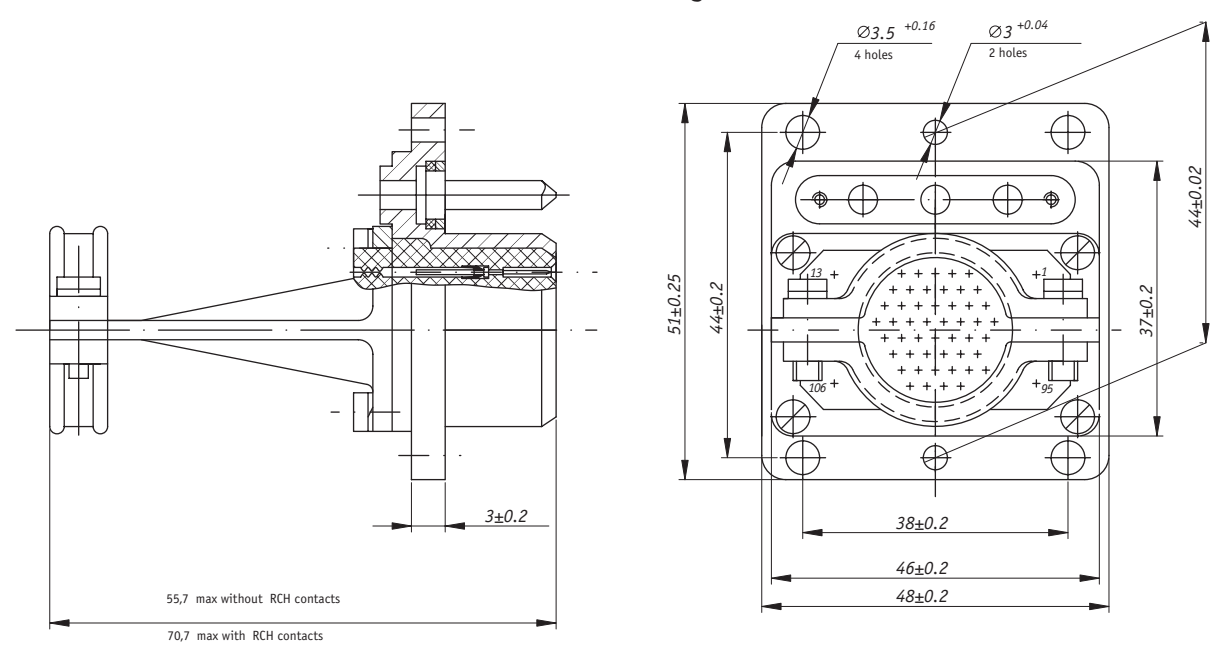


Figure 3 - Cable portion of the single row connector with open type backshell

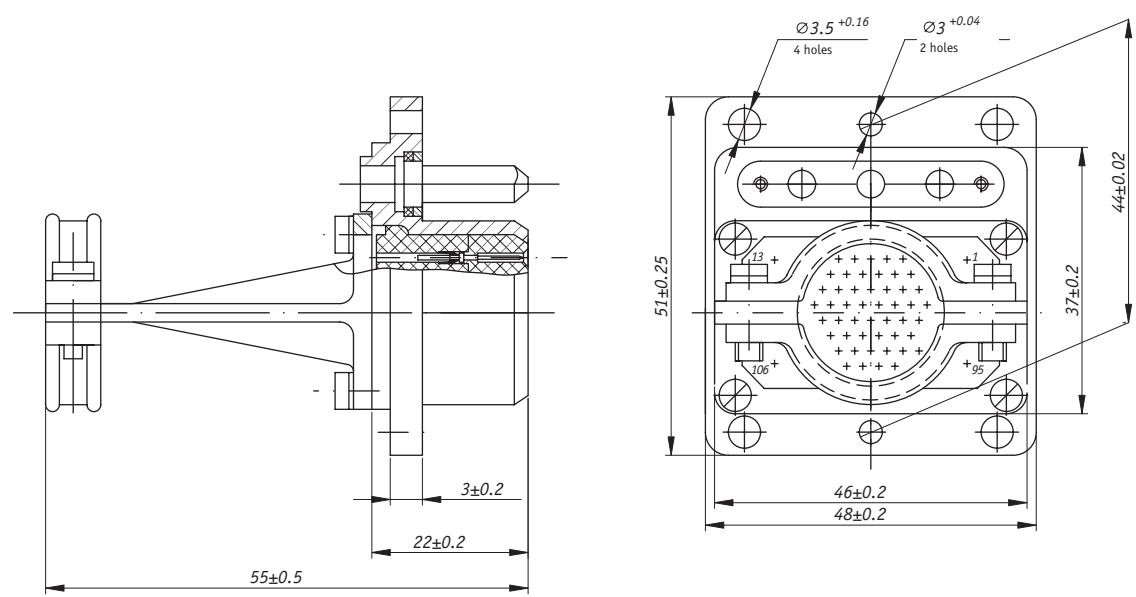


Figure 4 - Cable portion of the single row connector ONP-VS-53 with open type backshell without local protection of the contacts wiring tails

# Type of connectors ONP-VS-53, ONP-VS-54, OKP-VS-68

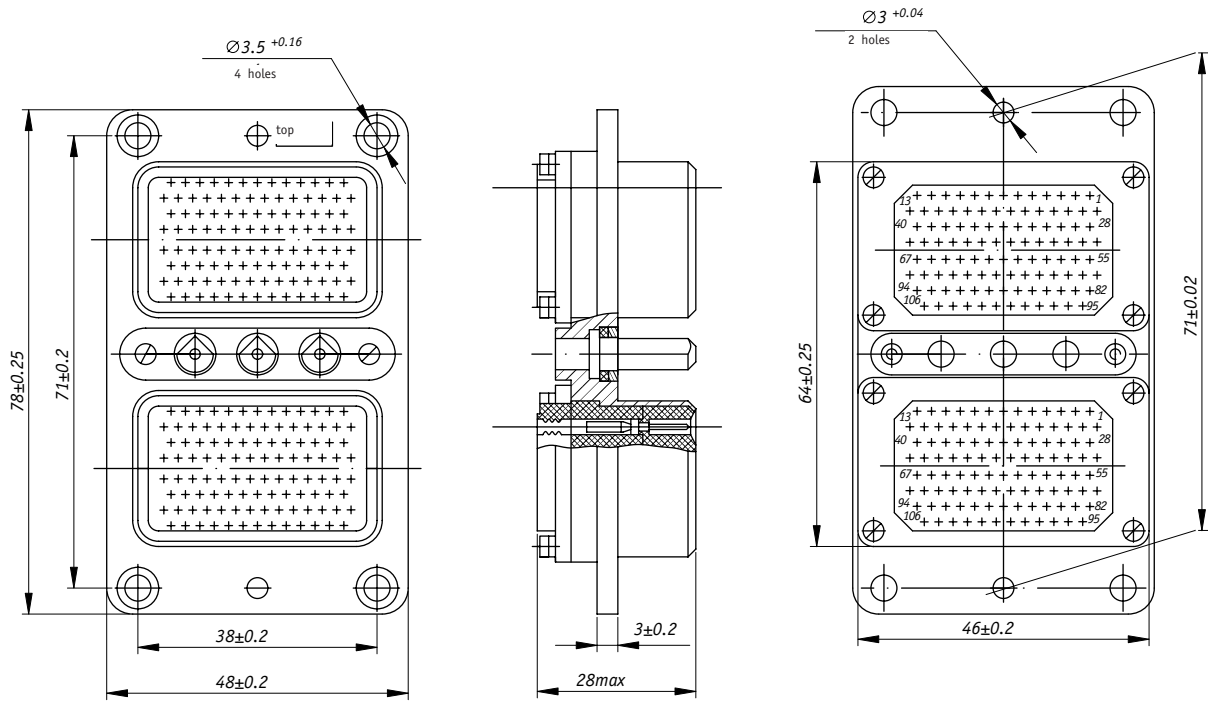


Figure 5 - Cable portion of the double row connector ONP-VS-54

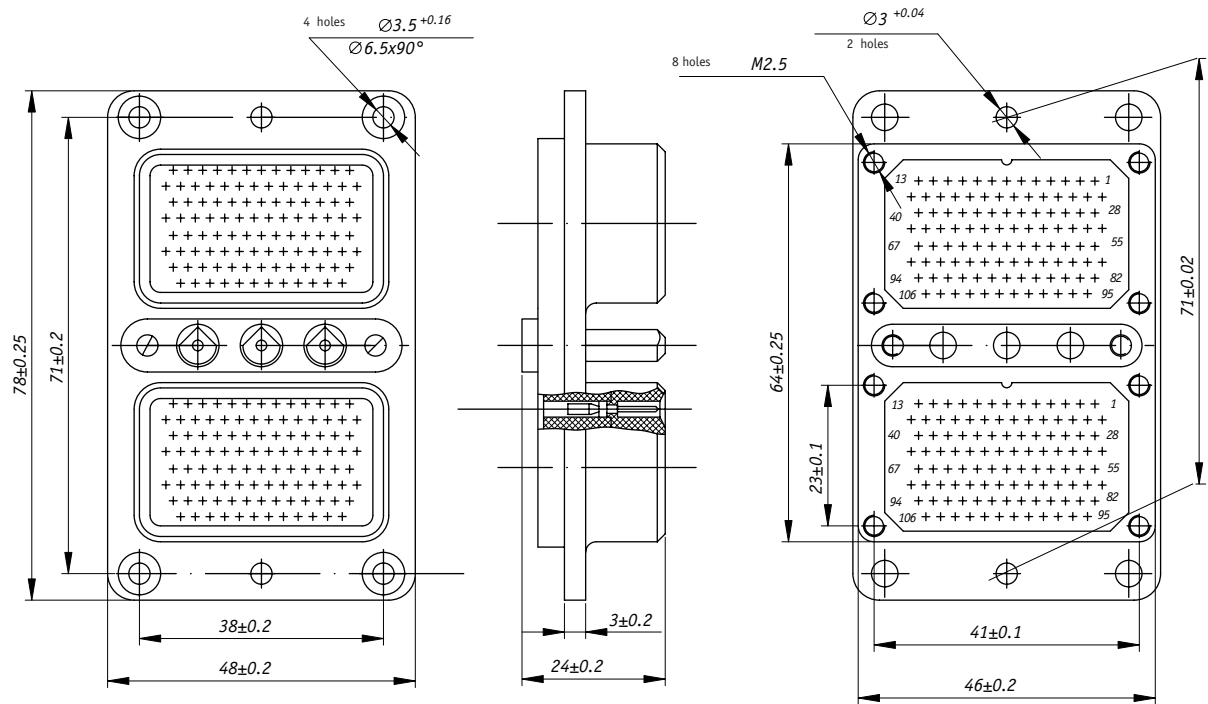


Figure 6 - Cable portion of the double row connector ONP-VS-54 without local protection of the contacts wiring tails

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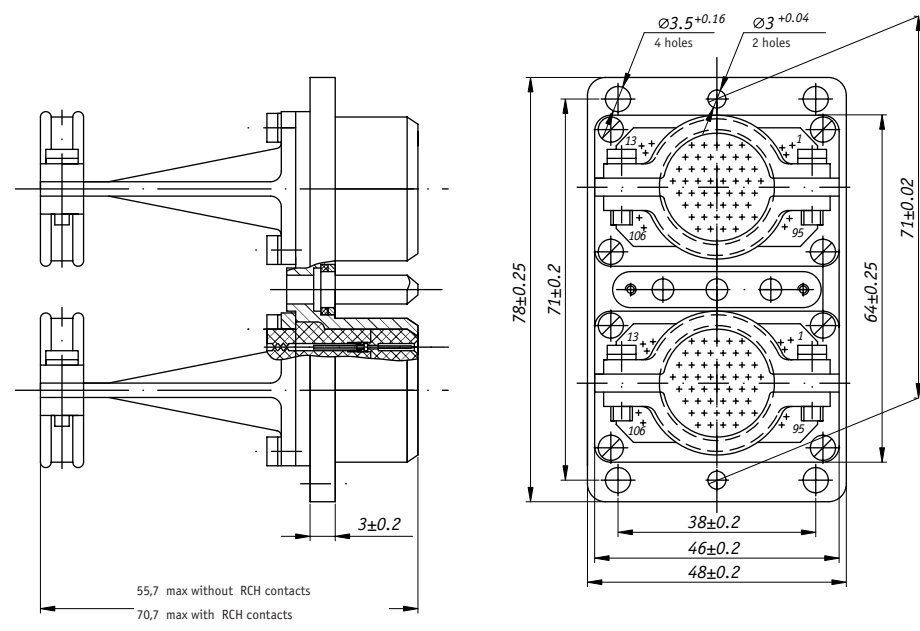


Figure 7 - Cable portion of the double row connector with open type backshell

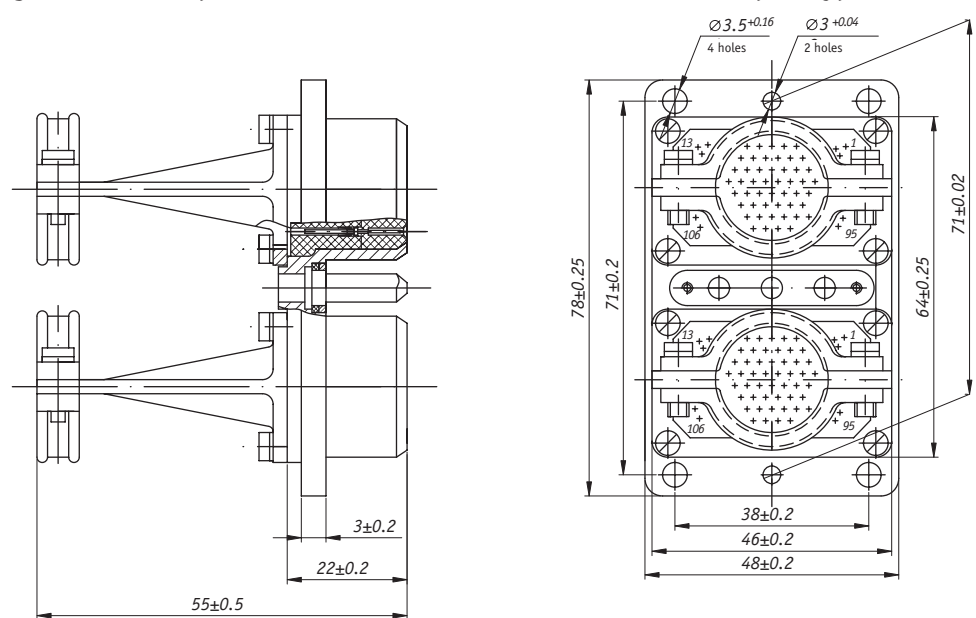


Figure 8 - Cable portion of the double row connector ONP-VS-54 with backshell of the open type without local protection of the contacts wiring tails

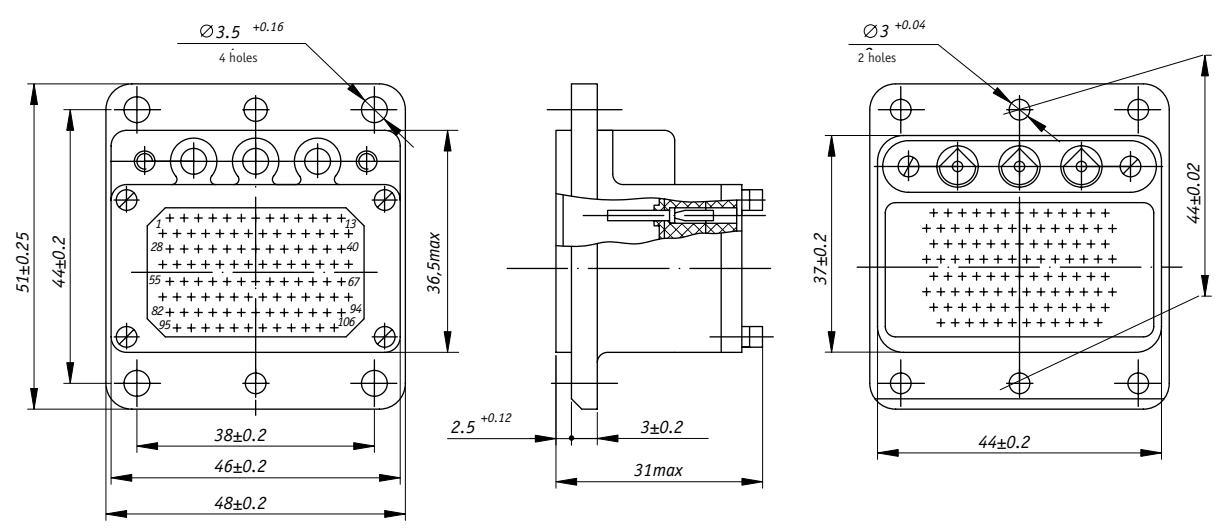


Figure 9 - Fixed portion of the single row connector ONP-VS-53

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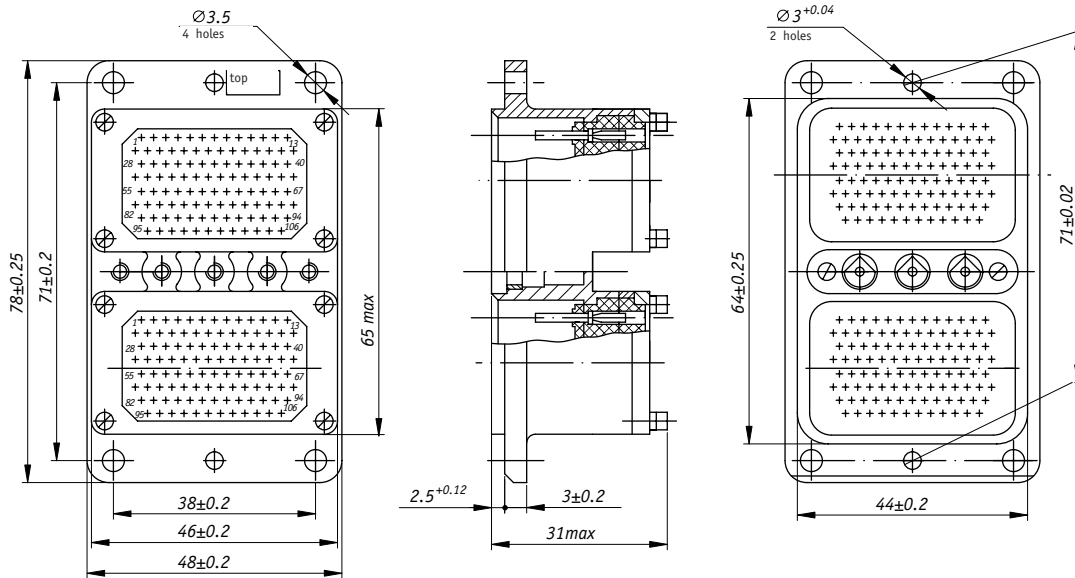


Figure 10 - Fixed portion of the double row connector ONP-VS-54

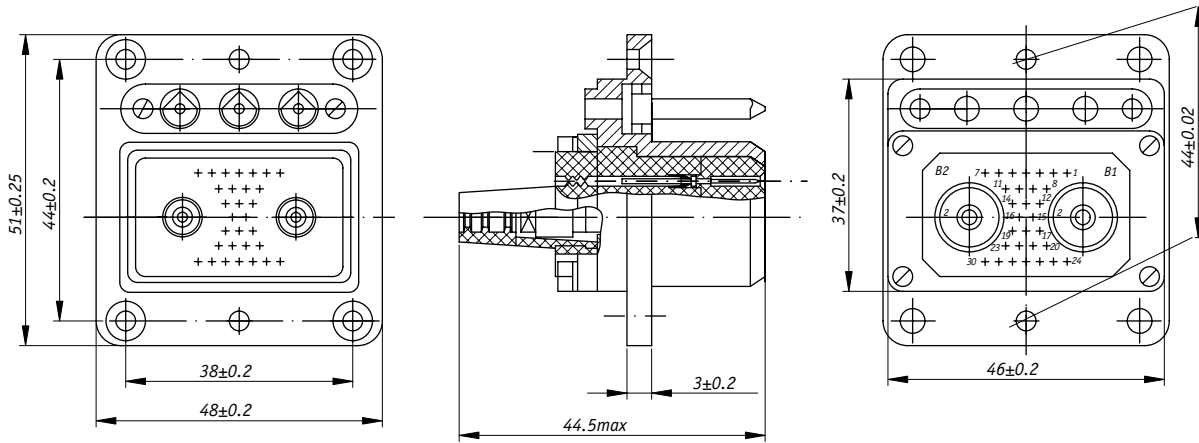


Figure 11 - Cable portion of the single row connector OKP-VS-68

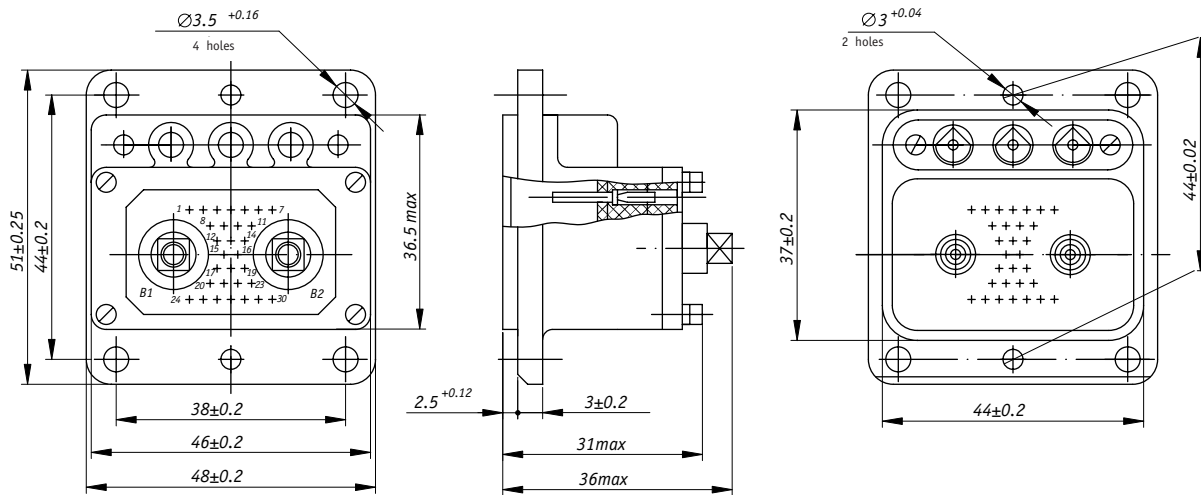


Figure 12 - Fixed portion of the single row connector OKP-VS-68

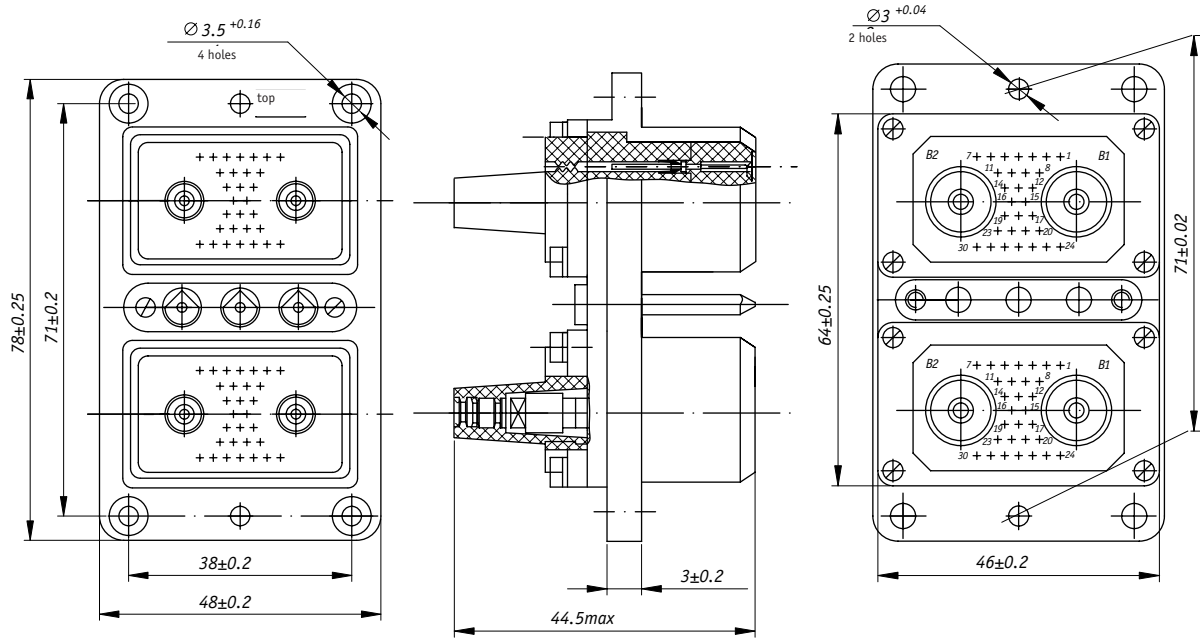


Figure 13 - Cable portion of the double row connector OKP-VS-68

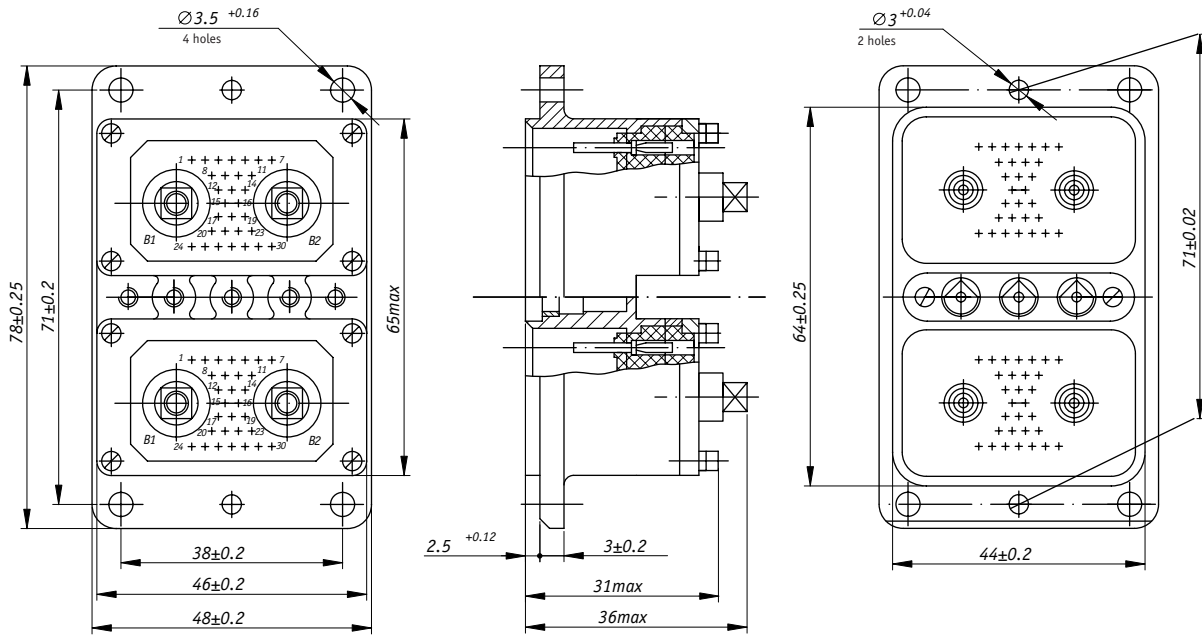


Figure 14 - Fixed portion of the double row connector OKP-VS-68

# Type of connectors

## ONP-VS-53, ONP-VS-54, OKP-VS-68



Range of the plugs, socket and hybrids is listed in the table  
Table 3

Designation	Number of the contacts lay out diagrams	Figure number	Weight,g, not more
<b>Plugs of the single row connectors</b>			
ONP-VS-53-106/46x37-V34-2-V	1	1	83
ONP-VS-53-106/46x37-V35-2-V	1	3	93
ONP-VS-53-106/46x37-V34-2-N-V	1	2	71
ONP-VS-53-106/46x37-V35-2-N-V	1	4	85
<b>Plugs of the double row connectors</b>			
ONP-VS-54-212/46x64-V34-2-V	1/1	5	139
ONP-VS-54-212/46x64-V35-2-V	1/1	7	159
ONP-VS-54-212/46x64-V34-2-N-V	1/1	6	117
ONP-VS-54-212/46x64-V35-2-N-V	1/1	8	147
<b>Sockets of the single row connectors</b>			
ONP-VS-53-106/44x37-R21-2-V	1	9	78
ONP-VS-53-106/44x37-R21-1-V	1	9	78
<b>Sockets of the double row connectors</b>			
ONP-VS-54-212/44x64-R21-2-V	1/1	10	134
ONP-VS-54-212/44x64-R21-1-V	1/1	10	134
<b>Hybrids of the single row connectors</b>			
ONP-VS-53-84/46x37-G34-2-V	2	1	83
ONP-VS-53-84/46x37-G35-2-V	2	3	93
ONP-VS-53-84/44x37-G21-2-V	2	9	77
ONP-VS-53-84/44x37-G21-1-V	2	9	77
OKP-VS-68-32/46x37-G34-2/1-V	3	11	89
OKP-VS-68-32/46x37-G35-2/1-V	3	3	99
OKP-VS-68-32/46x37-G34-2/2-V	3	11	89
OKP-VS-68-32/46x37-G35-2/2-V	3	3	99
OKP-VS-68-32/46x37-G34-2/3-V	3	11	88
OKP-VS-68-32/46x37-G35-2/3-V	3	3	98
OKP-VS-68-32/44x37-G21-2/1-V	3	12	77
OKP-VS-68-32/44x37-G21-1/1-V	3	12	77
OKP-VS-68-32/44x37-G21-2/2-V	3	12	76
OKP-VS-68-32/44x37-G21-1/2-V	3	12	76
OKP-VS-68-32/44x37-G21-2/3-V	3	12	76
OKP-VS-68-32/44x37-G21-1/3-V	3	12	76
<b>Hybrids of the double row connectors</b>			
ONP-VS-54-190/46x64-G34-2-V	1/2	5	143
ONP-VS-54-190/46x64-G35-2-V	1/2	7	163
ONP-VS-54-190/44x64-G21-2-V	1/2	10	136
ONP-VS-54-190/44x64-G21-1-V	1/2	10	136
ONP-VS-54-190/46x64-G34-2-X-V	2/1	5	143
ONP-VS-54-190/46x64-G35-2-X-V	2/1	7	163
ONP-VS-54-190/44x64-G21-2-X-V	2/1	10	136
ONP-VS-54-190/44x64-G21-1-X-V	2/1	10	136
ONP-VS-54-168/46x64-G34-2-V	2/2	5	140
ONP-VS-54-168/46x64-G35-2-V	2/2	7	160
ONP-VS-54-168/44x64-G21-2-V	2/2	10	136
ONP-VS-54-168/44x64-G21-1-V	2/2	10	136
OKP-VS-68-138/46x64-G34-2/1-V	1/3	5	151
OKP-VS-68-138/46x64-G35-2/1-V	1/3	7	171
OKP-VS-68-138/46x64-G34-2/2-V	1/3	5	150
OKP-VS-68-138/46x64-G35-2/2-V	1/3	7	170
OKP-VS-68-138/46x64-G34-2/3-V	1/3	5	150
OKP-VS-68-138/46x64-G35-2/3-V	1/3	7	170
OKP-VS-68-138/44x64-G21-2/1-V	1/3	10	136
OKP-VS-68-138/44x64-G21-2/2-V	1/3	10	134

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Continuation of table 3

Designation	Number of the contacts lay out diagrams	Figure number	Weight,g, not more
OKP-VS-68-138/44x64-G21-2/3-V	1/3	10	134
OKP-VS-68-138/44x64-G21-1/1-V	1/3	10	136
OKP-VS-68-138/44x64-G21-1/2-V	1/3	10	134
OKP-VS-68-138/44x64-G21-1/3-V	1/3	10	134
OKP-VS-68-64/46x64-G34-2/1-V	3/3	13	157
OKP-VS-68-64/46x64-G35-2/1-V	3/3	7	177
OKP-VS-68-64/46x64-G34-2/2-V	3/3	13	155
OKP-VS-68-64/46x64-G35-2/2-V	3/3	7	175
OKP-VS-68-64/46x64-G34-2/3-V	3/3	13	155
OKP-VS-68-64/46x64-G35-2/3-V	3/3	7	175
OKP-VS-68-64/44x64-G21-2/1-V	3/3	14	136
OKP-VS-68-64/44x64-G21-2/2-V	3/3	14	134
OKP-VS-68-64/44x64-G21-2/3-V	3/3	14	134
OKP-VS-68-64/44x64-G21-1/1-V	3/3	14	134
OKP-VS-68-64/44x64-G21-1/2-V	3/3	14	133
OKP-VS-68-64/44x64-G21-1/3-V	3/3	14	133
OKP-VS-68-116/46x64-G34-2/1-V	3/2	13	149
OKP-VS-68-116/46x64-G35-2/1-V	3/2	7	169
OKP-VS-68-116/46x64-G34-2/2-V	3/2	13	148
OKP-VS-68-116/46x64-G35-2/2-V	3/2	7	168
OKP-VS-68-116/46x64-G34-2/3-V	3/2	13	148
OKP-VS-68-116/46x64-G35-2/3-V	3/2	7	168
OKP-VS-68-116/44x64-G21-2/1-V	3/2	14	136
OKP-VS-68-116/44x64-G21-2/2-V	3/2	14	134
OKP-VS-68-116/44x64-G21-2/3-V	3/2	14	134
OKP-VS-68-116/44x64-G21-1/1-V	3/2	14	136
OKP-VS-68-116/44x64-G21-1/2-V	3/2	14	134
OKP-VS-68-116/44x64-G21-1/3-V	3/2	14	134

### Operating instructions

Minimum operating time may be increased to 200000 h if the maximum connector temperature is decreased to 74°C.

During the use, mounting and operation of connectors it is necessary to be guided by the OST V 11 0121, SH60.364.001 Technical Manual and и PM 11 364.009.

The wiring tails of connector contacts permit connection of wires with cross section and method specified in table 4.

Table 4

Contact diameter, mm	Wires cross section, mm <sup>2</sup>		Diameter of the wire across insulation, mm
	connection by crimping	connection by soldering	
0,8	0,12-0,35	0,08	0,7-1,4
1,5	0,85-1,50	-	1,8-2,7

#### Note

The wiring tails of the female connectors  $\varnothing 0,8$  mm permit connection of wires by crimping and soldering while the wiring tails of the male connectors  $\varnothing 0,8$  - only by crimping.